



The Week In Summary

[1] Boardman Coal Plant Off Line for Repairs; Customers Ask If It Should Return

A crack in a low-pressure turbine rotor blade has kept the Boardman coal-fired plant off line since December, and some of Portland General Electric's customer groups are questioning if the plant should return to service at all. The utility says that if all goes well, Boardman will be back in service this spring. But customer groups say that given that the plant is scheduled to stop burning coal in 2020, its future should be based on the cost of the fix and current market conditions for replacement power. *At [8], down, but not out.*

[2] Prospect of Washington Carbon Tax Initiative Drives Some Support of Tax Bill

Testimony during a Washington legislative hearing on a carbon-emissions tax proposed by Gov. Jay Inslee garnered support from utilities and other businesses, as well as environmental groups, although some said it came because of the prospect of "well-funded groups ready to pursue a ballot measure." *At [11], utilities urge a more moderate tax with a pause to take stock.*

[3] Proposed Oregon Mega Solar Project Intended to Swap Coal for Sun Power

Obsidian Renewables has proposed a massive solar-photovoltaic facility in central Oregon, which it hopes will help the region replace the loss of over 2,000 MW of coal-fired power over the next few years. The Obsidian Solar Center at Fort Rock would be up to a 600-MW solar facility, with an option for a battery storage component. The proposed project would be the largest solar venture in the state by a long shot, and could usher in an era of mega solar projects in Oregon. *At [9], despite a straight shot to California, the Northwest market is the target.*

[4] Montana Lawmakers Express Concern About Coal's Decline

Montana's coal industry faces challenges from greater market competition, shifting consumer preferences and more stringent regulation of greenhouse gas emissions. For Montana lawmakers, coal's decline is more than a question of finding new capacity sources. *At [10], less coal means less tax revenue and lost jobs, according to a state legislative report.*

[5] POTOMAC: FERC Commissioners Expect Regional Resilience Approaches

Grid operators are likely to bring up regionally specific approaches for strengthening system resilience, two members of the Federal Energy Regulatory Commission said at a Jan. 16 forum at the Bipartisan Policy Center in Washington, D.C. Meanwhile, Montana

Inside

Avangrid Seeks to Add Solar, Battery Storage to Montague Wind Project **Jump to [6].**

FERC Affirms Two-Year Stay of Enloe Construction, Rejects Rehearing.. **Jump to [6.1].**

Grant PUD to Consider 2 Percent Rate Hike; Irrigation Wheeling Pilot Starts. . **Jump to [6.2].**

Brief Mentions: News Roundup. . **Jump to [6.3].**

Energy alphabet soup got you confused?
Click here for a list of acronyms we use.

Opinion & Perspectives

Capacity Metric Can Quantify Habitat Benefits, Idaho Experts Say **Jump to [7].**

Price Report

Western Power Prices See Modest Movement **Details on Page 4.**

Energy Jobs Portal

Go to www.EnergyJobsPortal.com for the latest in regional energy career opportunities.

PSC Vice Chairman Travis Kavulla called PURPA “largely needless,” speaking at a House hearing exploring reform legislation. *Zinke pushes Interior reorganization; Western oil and gas producers have their doubts, at [12].*

Briefs

[6] Avangrid Seeks to Add Solar, Battery Storage to Montague Wind Project

Avangrid Renewables has asked regulatory permission to add a solar array and battery storage, both provisionally sized at 100 MW, to its planned 404-MW [Montague wind project](#), to be sited in Gilliam County, Ore., about 1.5 miles south of Arlington.

Avangrid filed the request Jan. 9 with the state’s Energy Facility Siting Council as changes to its site certificate.

The array and storage additions would be developed during the second phase of the project, the company said.

The solar array—planned for up to 640 acres—would “stabilize the wind resource and provide flexibility in responding to market and customer demands,” the request stated, while the storage component would “store and later deploy energy generated by the facility, providing flexibility in responding to market and customer demands.”

Originally approved in 2010 as a 404-MW wind project to be completed by September 2020, Avangrid has opted to develop it as two 202-MW phases, and will sell generation from the first phase—slated to be on line by the end of this year—to Apple for its data center near Prineville, Ore. (CU No. 1797 [12]).

The proposed changes would also expand the project’s 33,402 acres by about 13,365 acres, and relocate some of its wind turbines. *[Rick Adair]*

[6.1] FERC Affirms Two-Year Stay of Enloe Construction, Nixes Rehearing Requests

FERC has affirmed a two-year stay granted to Okanogan County PUD in September for the start of upgrade construction on the 9-MW Enloe hydro project *[P-12569-014]*, and rejected calls for a rehearing jointly filed on Oct. 20 by seven conservation groups.

In a [decision](#) issued Jan. 18, the commission said it was unpersuaded by the group’s five arguments to revisit the order approving the stay. It noted, in fact, that several points raised by the group were already rejected in the Sept. 20 order (CU No. 1819 [10.5]).

Okanogan asked for the stay in a June 22 filing, citing delays due to litigation over its water rights. The matter had been in court almost continuously since the license was issued in July 2013, but was finally resolved in March 2016 when the state Supreme Court refused to hear a challenge of a July 2016 appeals court ruling siding with the PUD (CU No. 1758 [10.2]).

Normally, construction must start within two years after the license is issued, with only a single two-year delay allowed, which Okanogan had already been granted in 2014 (CU No. 1688 [9]; 1709 [10.1]), resetting the start-of-construction deadline to July 2017.

Under the September ruling, Okanogan has until July 9, 2019, to start construction. *[R. A.]*

[6.2] Grant PUD to Consider 2 Percent Rate Hike; Irrigation Wheeling Pilot Starts

Grant County PUD commissioners plan to consider a 2 percent rate increase at their Jan. 23 meeting.

The rate increase is called for in the \$274.3 million budget for 2018 passed in December, which represents a \$33 million decrease in net spending from 2017.

The budget estimates a positive bottom line of \$57.3 million, which will be invested in electric generation, delivery and environmental assets. It also includes \$139.6 million for capital spending, including upgrades to Priest Rapids and Wanapum dams.

In other news, the PUD has started charging wheeling rates for moving electricity generated at federal dams to local irrigation districts, under the terms of a one-year contract it signed with BuRec in December, effective Jan. 1 (CU No. 1831 [8.1]).

The agreement follows one for six months requested by the districts—Quincy Columbia Basin, South Columbia Basin and East Columbia Basin—to allow them to study the PUD’s cost-of-service calculations.

The electricity moves in part over transmission lines the PUD acquired from BPA decades ago. At the time, Grant PUD agreed to not charge wheeling rates for 40 years, a period that ended in June. The utility expects to collect about \$800,000 each year to cover its costs.

BuRec and the irrigators will continue payment-related discussions and potential for a long-term wheeling agreement with the PUD. *[D. C.]*

[6.3] Brief Mentions: News Roundup

FERC on Jan. 16 approved the merger of Avista and Toronto-based Hydro One, valued at \$5.3 billion. The companies filed an application with the federal agency on Sept. 14. Other approval requests are pending before the utility commissions of Washington, Idaho, Oregon, Montana and Alaska. Another approval must be obtained from the Federal Communications Commission. Also required is clearance by the Committee on Foreign Investment in the United States, and compliance with applicable requirements under the U.S. Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended. The filings with these agencies will be made in the coming months.

Ann Gravatt has been nominated by Oregon Gov. Kate Brown to the Energy Facility Siting Council, effective Feb. 14. If approved by the state’s Senate, she will serve out the remainder of Renee Dowlin’s term, through Dec. 12, 2020. Gravatt has been an environmental strategies manager with the Port of Portland since January 2016, and before that was Oregon director/policy advisor with Climate Solutions. She also served as policy director for eight years with Renewable Northwest. The council has seven members selected based on their knowledge and abilities, and to ensure broad geographic representation of the state. Gravatt, like the outgoing Dowlin, is from Multnomah County.

Two challengers have filed to run for Travis Kavulla’s District 1 seat on the Montana PSC—state Rep. Rob Cook (R-Shelby) and Cory McKinney, a registered Republican from Great Falls, according to the Montana Secretary of State’s Office. Cook is a moderate leader among GOP lawmakers, reports the

Bozeman Daily Chronicle. Kavulla currently is vice chairman of the PSC, and cannot run again due to term limits. Only one candidate, Tyrel Suzor-Hoy, a registered

Democrat from Helena, has filed to run for the seat of PSC Chairman Brad Johnson. Johnson also cannot run again due to term limits. [C. U.]

Opinion & Perspectives



Bearing Down

[7] Capacity Metric Can Quantify Habitat Benefits, Idaho Experts Say

SUMMARY: Among new methods being developed to more effectively evaluate which habitat-restoration actions are the most beneficial and to measure how much such actions contribute to salmon and steelhead recovery, Idaho's integrated rehabilitation assessment is one of the more promising, its proponents say. *Editor's note: This column marks the last Clearing Up piece from Laura Berg, who retired in December. We appreciate her many contributions as our fish reporter, and wish her all the best in retirement. Her successor, K.C. Mehaffey, will start with us in early February.*

Idaho scientists say they have a promising new method for prioritizing habitat-restoration actions and evaluating their contribution to salmon and steelhead recovery.

The new [approach](#), described at a Northwest Power and Conservation Council meeting in November, could be a breakthrough for salmon managers and project funders who have been frustrated by the difficulty of demonstrating, quantitatively, whether habitat actions are achieving regional goals, including delisting goals.

In fact, U.S. District Judge Michael Simon, in rejecting the 2008-2014 BiOp on the Federal Columbia River Power System (CU No. 1748 [15]), said the BiOp and its reasonable and prudent alternatives (RPAs) relied too heavily on uncertain benefits from habitat-improvement projects.

The new approach, the integrated rehabilitation assessment (IRA) being used in Idaho's Salmon River subbasin, was explained to Council members by Mike Edmondson, Idaho Offices of Species Conservation; Chris Beasley, Quantitative Consultants; Jude Trapani, Bureau of Reclamation; and Mark Davidson, The Nature Conservancy.

IRA uses a life-stage, habitat carrying-capacity metric that sequentially identifies and targets the most limiting life-stages of salmonids. It employs a machine-learning technique called quantile random forest (QRF) to estimate the available capacity.

This approach and similar recent habitat initiatives in the region contrast with past approaches that isolated habitat limiting factors and tried to fix them without distinguishing the fish life-stages affected.

To determine if a particular stream or reach has the capacity to support salmonids at particular life stages, IRA uses data and analyses from two BPA-funded efforts—integrated status and effectiveness monitoring program (ISEMP) and Columbia habitat monitoring program (CHaMP).

ISEMP and CHaMP use various sampling and identification techniques, including in-stream PIT-tag detection systems to estimate adult and juvenile fish abundance and life stage-specific growth and survival.

These programs have come under extra scrutiny because of high costs and the difficulty of ascertaining their value to salmon recovery.

While the Council is requiring modifications to the two habitat-monitoring programs, their potential importance to habitat restoration in the region is highlighted by the Idaho work.

Modeling the data using QRF allows linking stream quantity and quality data with fish life-stage survival, which in turn permits estimating habitat capacity.

To determine how much habitat capacity is needed to improve salmon and steelhead abundance, IRA defines regional goals on the basis of habitat capacity requirements for different life stages.

For instance, if a goal for a particular tributary is 2,000 adult fish, that number of adult fish requires 980 redds, or spawning areas, which requires 1.5 million parr (fish stage between fry and smolt) to emerge from the redds, which in turn requires 700,000 parr to survive to the pre-smolt life stage.

Because QRF can estimate how much a proposed rehabilitation action is likely to increase survival and habitat capacity, it can be used to prioritize prospective projects.

For example, although data might suggest that one rehabilitation project would increase a stream's capacity significantly more than another, if IRA indicates that spawning habitat for redds is not currently limiting capacity, it would place projects to improve spawning habitat at a low priority.

A completed restoration project also can be evaluated on how much it has increased survival at critical life

Continued on page 5



PIT-tag antennae being installed in Lemhi River, Idaho.

Credit: Milstein/BPA

Price Report

Western Power Prices See Modest Movement

Power prices saw modest movement during the trading week, thanks to an absence of extreme weather in the West to goad them higher.

Western daytime power prices generally shed between 25 cents and \$2.35 between Jan. 11 and 18 although Palo Verde was the exception. That hub added \$1.25, on average, to end at \$25/MWh. Markets were closed Jan. 15, in observance of the Martin Luther King Jr. holiday.

Peak power prices traded in a range from \$20.25/MWh at Mid-Columbia to \$34.10/MWh at South of Path 15 by Jan. 18.

Off-peak power prices logged gains of between \$1.65 and \$2.65 by the close of the trading week, save for SP15, which shed \$1.35 in trading. Mid-C gained the most value, up \$2.65 to \$16.50/MWh.

Nighttime power prices traded in a range from \$16.50/MWh at Mid-C to \$28.45/MWh at SP15.

Power demand on the California ISO grid reached 28,619 MW Jan. 17, which was the week's high. Total renewable generation reached 9,658 MW that same day, while thermal generation reached 10,526 MW Jan. 16.

Meanwhile, working natural gas in storage was 2,584 Bcf as of Jan. 12, according to U.S. Energy Information Administration estimates. This is a net decrease of 183 Bcf compared to the previous week.

Storage levels are now 12.5 percent less than a year ago and 12.3 percent less than the five-year average.

National natural gas use remained at 102.3 Bcf per day, on average, again this week, according to the EIA. Natural gas used for power generation increased 6 percent week over week.

Natural gas prices varied throughout the week, with Henry Hub spot prices hitting \$5.09/MMBtu before dropping to \$3.38/MMBtu by Jan. 18.

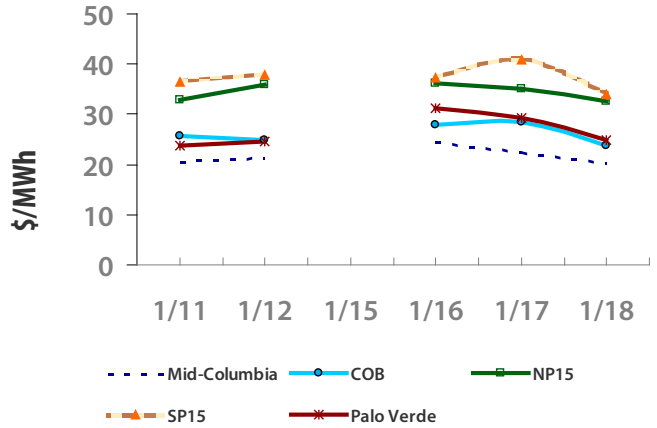
Western natural gas prices generally lost between 1 cent and 59 cents in Thursday-to-Thursday trading. Alberta natural gas lost the most value among Western hubs, dropping 59 cents to \$1.46/MMBtu.

The Malin, Southern California CityGate, and PG&E CityGate hubs posted gains of between 1 cent and 6 cents in the trading period.

What's next: Low-elevation rain and mountain snow are expected in the Western U.S. beginning Jan. 22. Temperatures may drop between 5 and 15 degrees below seasonal norms by Jan. 26, according to the National Weather Service. Southern California expects increasingly drier, warmer weather. *[Linda Dailey Paulson]*

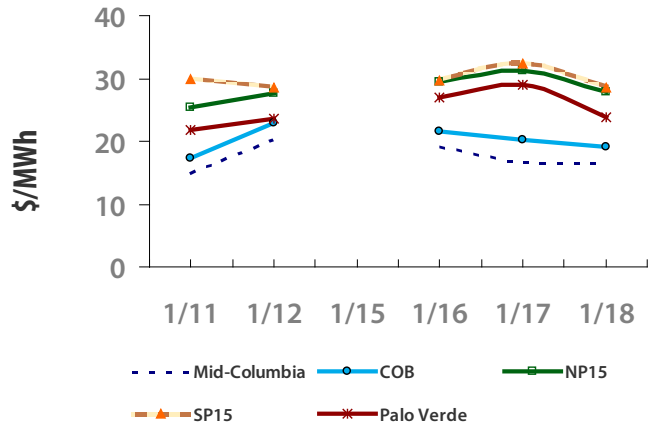
Average Peak Power Prices

Thurs., 01/11 - Thurs., 01/18



Average Off-Peak Prices

Thurs., 01/11 - Thurs., 01/18

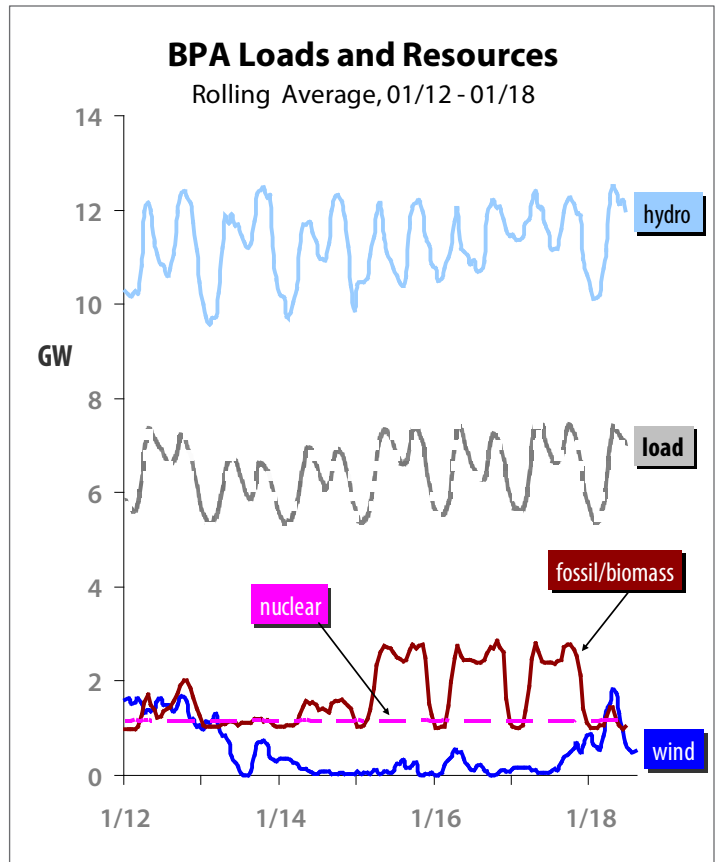
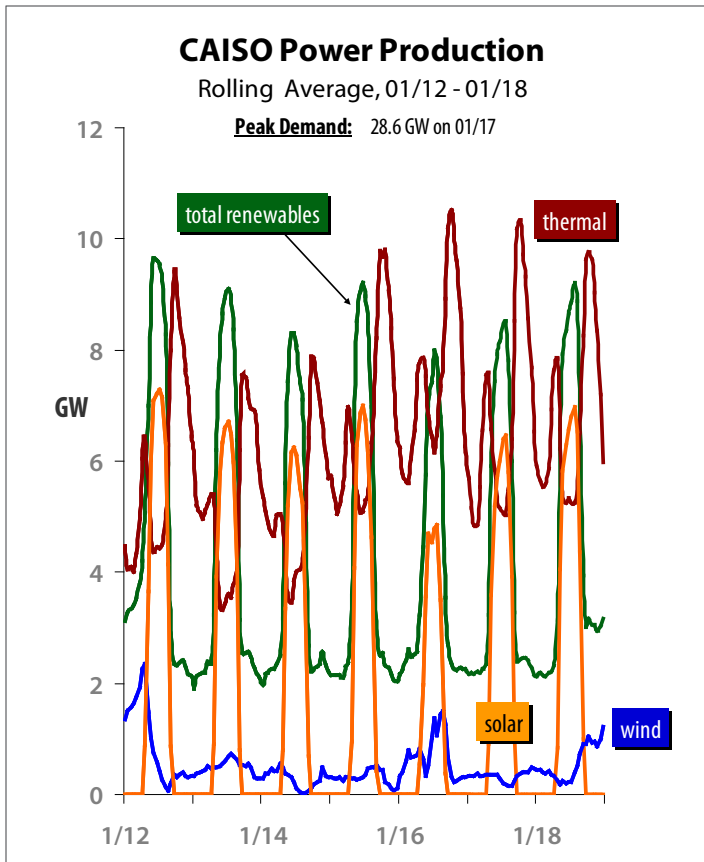


Average Natural Gas Prices (\$/MMBtu)

| | Th., 01/11 | Tue., 01/16 | Th., 01/18 |
|----------------|------------|-------------|------------|
| Henry Hub | 3.24 | 5.09 | 3.33 |
| Sumas | 2.70 | 3.53 | 2.69 |
| Alberta | 2.05 | N/A | 1.46 |
| Malin | 2.73 | 2.83 | 2.74 |
| Opal/Kern | 2.79 | 3.72 | 2.76 |
| Stanfield | 2.64 | 2.76 | 2.61 |
| PG&E CityGate | 2.89 | 3.02 | 2.95 |
| SoCal Border | 2.86 | 3.78 | 2.79 |
| SoCal CityGate | 3.29 | 4.37 | 3.33 |
| EP-Permian | 2.67 | 3.62 | 2.51 |
| EP-San Juan | 2.72 | 3.77 | 2.60 |

Power/gas prices courtesy of Enerfax

Power Gauge



Sources: CAISO and BPA

Continued from page 3

stages and how much that contributes to achieving population goals.

Such calculations will help salmon managers and project funders estimate the amount of rehabilitation necessary to achieve life-stage recovery goals and identify the best opportunities for restoration actions.

In the future, the Idaho scientists predicted, the QRF approach will be able to compare existing and proposed modeling results to inform project-engineering design.

Using IRA methods, measuring progress toward goals can be completed faster and more cost-effectively than the standard monitoring and evaluation metric can

be replicated in other interior Columbia River Basin watersheds, the scientists said.

They also said the new metric would use existing information with no or very limited new data necessary, with the possible exception of the Clearwater River watershed in the Snake River Basin.

This would lower the costs of monitoring and evaluation, one of the more expensive items in the Columbia Basin Fish and Wildlife Program.

And, importantly, new approaches like IRA can help pick the projects most likely to increase salmon and steelhead survival in the basin, which is what the road to recovery is all about, they said. **[Laura Berg]**

CLEARING UP is a weekly report to clients of Energy NewsData, covering public utility and energy policy development, markets, litigation and resource development in the United States Pacific Northwest and Western Canada. ISSN 0738-2332. Report text section copyright date of publication, NewsData Corporation. All rights reserved; no reprinting without permission, no electronic storage or transmission without written license agreement. News clippings reproduced in CLEARING UP are copyrighted by the newspaper or magazine of original publication. **EDITORIAL OFFICES:** Mail & Express delivery: 4241 21st Avenue W, Suite 306, Seattle, WA 98199-1250. Voice: [206] 285-4848; Fax: [206] 216-4116. Email: newsdata@newsdata.com. Website: www.newsdata.com. For newsletter subscription information, call John Malinowski at [206] 285-4848, ext. 203 or johnm@newsdata.com. **MANAGEMENT AND STAFF:** Publisher & Editor-in-Chief, Mark Ohrenschall • Vice President & Controller, Mary Noe • Business Manager, Jackie Fields • Director of Information Systems, Daniel Sackett • Client Services Director, John Malinowski • CLEARING UP Editor, Steve Ernst • News Editor, Rick Adair • B.C. Correspondent, Brian Lewis • Contributing Editors, Kavya Balaraman, Leora Broydo Vestel, Dan Catchpole, Jim DiPeso, Kali Kotoski, Alan Mountjoy-Venning, Jude Noland, Linda Dailey Paulson and Mavis Scanlon • Contributing Columnists, Phil Jones, Bill Virgin • Billing & Accounts Receivable, Jennifer West McCarthy • Production Coordinator, Amber Schwanke • CLEARING UP Production Editor, Michelle Noe • Energy NewsData Founder, Cyrus Noë (1929-2017).

Supply & Demand

[8] Boardman Down for Repairs; Customer Groups Ask If It Should Return • from [1]

A crack in a low-pressure turbine rotor blade has kept the Boardman coal-fired plant off line since December, and some of Portland General Electric's customer groups are questioning if the plant should return to service at all.

The 585-MW plant in northeastern Oregon, which is slated to close in January 2020, is one of PGE's least-used resources, according to customer groups. And whether the plant comes back into service should depend on the cost of repairs when balanced with its already short life span, they say.

"Based on what we know, at this point we expect the repairs will be cost-effective and the plant should return to service in the spring," PGE spokesman Steve Corson told *Clearing Up*.

Corson said a slight vibration was detected in the turbine in the evening of Dec. 8 and the plant was subsequently taken off line. The damaged rotor has been sent to a Siemens facility in North Carolina for repair and should be ready for service in the spring. It's unclear how much it will cost to repair, Corson said.

Boardman had a very similar issue in October 2005, when a cracked low-pressure turbine rotor took the plant down for six months. The utility attempted to restart the plant in February 2006, but the restart failed. It was later determined that the restart failed because loose and missing bolts caused the rotor to vibrate.

PGE initially asked the Oregon PUC to recover \$45 million in replacement power costs during the 105-day outage. The commission eventually allowed the company to defer \$26.4 million in excess power costs (CU No. 1276 [9]).

The plant went down again in 2013 after a "thermal water hammer event" knocked it out for about six months and cost \$10 million to repair.

More recently, PGE took Boardman down on Aug. 2, 2017, to repair a leak in a boiler tube. The plant was back in service two days later, Corson said.

Corson said that if all goes as planned, the recently cracked rotor blade will be repaired and the plant will be back in service this spring, giving it about 18 months before it's scheduled to stop burning coal in January 2020.

But the utility's customer groups say the plant's return should depend on the costs of the fix.

Tyler Pepple, an attorney representing Industrial Customers of Northwest Utilities, said that "given that the plant almost never runs anyway, there's a good argument not to fix it."

"Boardman is almost always out of the money," Pepple said, meaning it's one of PGE's most expensive resources to run. "Normally in December-January it will be running, but it really hasn't been that cold. So we may get to the shoulder months and it won't be needed either."

Pepple said the utility's last power cost adjustment (PCA) filing showed the plant only runs about four months of the year; December through January, and at times June through August.

"If they can make a case they need it for summer, then that's on them," Pepple said. "But their bilateral negotiations for capacity power have shown that there's plenty of capacity available on the market, and there is no reason not to go buy it."

PGE has not made a filing with state regulators about the outage, nor has it made a public announcement as of *Clearing Up* deadline. Pepple suspects the issue will be taken up in the utility's PCA filing scheduled for April.

"Any additional investment has to be looked at over the short remaining life of the plant, and the costs of repairs versus the current market condition," Bob Jenks, executive director of Oregon's Citizens' Utility Board, told *Clearing Up*, after being informed of the outage. [Steve Ernst]

[9] Oregon Mega Solar Project Planned to Swap Coal for Sun Power • from [3]

Obsidian Renewables has proposed a massive solar-photovoltaic facility in central Oregon that it hopes will help the region replace the loss of over 2,000 MW of coal-fired power over the next few years.

The company began its permitting process for the proposed Obsidian Solar Center at Fort Rock, in Lake County, Ore., with the Oregon Energy Facility Siting Council on Jan. 16.

The project would be located on nearly 7,000 acres of high-desert sagebrush country in south-central Oregon near the 500-kV California-Oregon Intertie. The company has 1,000 MW of interconnection requests pending on two of the three COI lines—600 MW of capacity on Portland General Electric's line and 400 MW on BPA's.

David Brown, principal with Obsidian Renewables, told *Clearing Up* that the site isn't the sunniest spot in the state. That distinction belongs to the southeastern corner of Oregon near the Nevada border, but that remote locale doesn't have any transmission lines.

"This would be the largest and lowest-cost solar project in the region," he said. "This is the sunniest place in the state that has access to transmission lines."

Brown said current modeling shows power from the project could sell for about \$36/MWh.

If so, that would be among the cheapest solar energy in the country. A recent RFP by Xcel Energy in Colorado found the median bid for solar-plus-storage was \$36/MWh. According to GTM Research, the previously lowest-known bid for solar was \$45/MWh in Arizona.

"We expect batteries to add about \$6-\$8 per MW hour to the base cost at the high side of the transformer (i.e. at 500 kV)," Brown said in a follow-up email to *Clearing Up*.

The Obsidian Solar Center would come with a capacity factor in the mid 30-percent range, Brown said.

The additional hours of energy provided from battery discharge would be, to some extent, subject to utility dispatch, and would be able to be targeted to times of day when the energy would be most valuable, he said.

"We are quickly learning that energy being purchased in the open market is not as valuable in the middle of

the day due to a developing surplus of supply, and that energy delivered in the late afternoon and early evening is more valuable due to a developing shortage of supply. Batteries not only improve the capacity factor, they improve the value of the plant's capacity," he said.

Higher-priced energy delivered at the hours it's needed can be more economic than lower-priced energy delivered at the hours when demand is down, he said.

"I think that the emphasis on 'nameplate value' found in power purchase agreements, which is all we have seen for 10 years now, is going to give way to utilities pricing energy and capacity value on an hour-by-hour basis, 24 hours a day and 365 days a year," Brown said. "I think the value proposition of the Obsidian Solar Center will be much stronger with that type of analysis."

Brown said the project could be built in phases, depending on customers' needs. It could be built in 50 MW, 100 MW or 200 MW chunks. The site could be home to up to 600 MW of solar PV, plus a battery-storage component.

While the project is near the California border, with a direct shot into the largest market for renewables in North America via the intertie, Brown has its sights set on the Northwest market and the region's investor-owned utilities.

"I have no designs on selling into California," Brown said. "My market is replacing Boardman, Centralia and the coal plants in Utah and Wyoming."

He said demand for the project wouldn't come from utilities needing to satisfy their RPS requirements, but from utilities that need to fill a hole in their portfolios from coal plants shutting down. The three most-likely customers for the project would be Portland General Electric, PacifiCorp and Puget Sound Energy, since those utilities will be shutting several coal units in the next few years.

'We are quickly learning that energy being purchased in the open market is not as valuable in the middle of the day.'

"The price we are quoting—\$36/MWh—might be a little high," Brown said. "I think we can compete with BPA prices, so we hope we get some interest from Snohomish PUD, Seattle City Light and Tacoma Power, as well."

The project could also attract a corporate buyer, Brown said.

At total build-out of 600 MW, Brown said the project would cost roughly \$650 million. With a battery-storage component, depending on the size, the total costs would come in at nearly \$1 billion, he said.

The permitting process is expected to take two years, but Brown hopes to begin construction by the end of 2019 to qualify for the 30-percent federal investment tax credit, which begins to phase down in 2020. Construction would likely get rolling in mid-2020 and be done in phases that would be completed in 2022 and 2023.

Obsidian Solar Center at Fort Rock would become the largest solar project in Oregon, by a long shot. The current title-holder is Avangrid's 56-MW Gala Solar near Bend (CU No. 1789 [7.4]).

Invenegy's proposed 75-MW Boardman Solar Facility is poised to take the crown (CU No. 1826 [8.2]).

The Oregon Department of Energy has concluded the 75-MW project meets all applicable state laws and on Dec. 29 recommended that EFSC approve the project (CU No. 1832 [5]).

However, Avangrid earlier this month filed for an amendment to its Montague wind project that would add a nominal 100 MW of solar and battery storage to the site certification, which calls for construction to be finished by 2020 ([see \[6\]](#)).

Oregon currently has 144 MW of solar capacity, according to the Northwest Power and Conservation Council's website

Brown thinks the Obsidian Solar Center is only the first of what could be several mega solar projects built in the state.

"I think there will be several more. I think this an idea whose time has come," he said.

How many more?

"Not 10, maybe 5 or more," he told *Clearing Up*.

"I think about the time when construction starts on my project, you'll start to see continuous construction of these kinds of projects for the next 10 or 11 years, as coal plants start to shut down." [Steve Ernst]

[10] Montana Coal Industry Faces Hazy Future • from [4]

Montana's coal industry is being undercut by cheap natural gas and rising demand for cleaner alternatives, which could seriously erode state and local tax revenues, while also eliminating a host of well-paying blue-collar jobs, according to a [report](#) presented Jan. 17 to the state Legislature's [Environmental Quality Committee](#).

"This is just the tip of the iceberg," Montana Rep. Jim Keane (D-Butte) told the committee during public comments. "It's a study that just scares the heck out of everybody in here, including me."

If nothing is done, "legislatures into the future for the next 15 years will be trying to come up with money to patch the holes" in Montana's budget as coal-related tax revenue drops.

The report was produced by the Montana Legislative Services Division.

Montana collected \$113.2 million in tax revenue from coal-related operations in 2016, and as much as \$316 million in property taxes from generating plants, mines, transmission lines and other land used at least in part for coal-related activities, according to the report, which cited data provided by Montana's Department of Revenue.

Coal production in Montana in 2017 was about 35 million tons, a roughly 8 percent increase over the previous year's 32.4 million tons. Despite the uptick, 2016 and 2017 had the lowest coal output since at least 2007, according to the [report](#). The state produced 43.2 million tons in 2007 and 42.1 million tons in 2015.

About 75 percent of Montana coal is shipped out of the state. About 22.5 percent of the state's coal goes to the Colstrip Generating Station. A small fraction also goes to Hardin Generating Station, which is up for sale and could close in 2018 (CU No. 1828 [7]). Michigan and Minnesota burn a lot of Montana coal. Some goes to TransAlta's Centralia coal plant in Washington, which is

scheduled to begin closing in 2020. Foreign consumers, mostly in Asia, also use Montana coal.

Centralia received 2.5 million tons of coal from Montana's Spring Creek mine in 2016, about 15 percent of the mine's average annual production, according to the report. TransAlta has said it plans to speed up plans to stop burning coal at Centralia by 2025.

Colstrip units 1 and 2 are scheduled to shut down by July 2022. Across the country, 12.7 GW of coal generation is slated to be retired by 2020, and the U.S. Energy Information Administration estimates that 90 GW will go off line between 2017 and 2030, according to the report.

"The facts are the facts, and coal is in decline," Anne Hedges, the Montana Environmental Information Center's executive director, told the committee.

Demand is falling because coal is not as competitive as it was, she said.

However, the average price of Montana coal—\$17.44 per ton at the mine in 2015—is nearly half the U.S. average price of \$31.83/ton, according to the report. The difference is due largely to lower transportation costs and the lower heat content of the coal.

The state needs to work with legislators in Washington and Oregon, the biggest consumers of Colstrip energy, to help Montana replace dwindling coal demand with wind and solar generation, Hedges told the committee.

Moving renewable energy produced in the state to West Coast markets is "where Montana's future lies in the energy system," Hedges said. "You can fight this if you want—that Washington and Oregon are concerned about climate change," but the trend is not changing.

Several legislators raised concerns that Washington and Oregon will incentivize only in-state clean-energy developments, leaving Montana with shuttered mines and retired coal plants but few new wind turbines.

But "Montana wind is a perfect complement to Washington demand," Hedges argued. Montana's wind-energy production is highest in the winter, when Washington wind generation tends to drop.

Developing cheap Montana wind is good for Washington ratepayers, Hedges said. "Our wind blows, and it blows when they need it."

BPA and Montana Gov. Steve Bullock's task force to analyze the barriers to wind development in Montana and develop strategies to overcome transmission and other barriers is the single most important thing that can be done to help both financially and environmentally, she told *Clearing Up* in an email.

State Sen. Duane Ankney (R-Colstrip) is less optimistic about the situation. "We really don't have a lot of options as far as revenue for the state and jobs," he told *Clearing Up* in an interview.

Ankney places little hope in working with Washington and Oregon legislators to ensure future markets for Montana wind energy, he said. Clean-energy advocates have big pull in those states, he added.

Ankney is skeptical of those advocates' intentions—they are anti-coal rather than pro-clean energy, he said. Moreover, they are not concerned about what the decline in coal will mean for people with fixed and

low incomes.

Nonetheless, during the committee meeting, he said he will reach out to elected officials in Washington to discuss proposed carbon taxation in that state.

Montana lawmakers must focus on keeping Colstrip units 3 and 4 working into the 2040s, Ankney told *Clearing Up*.

That is a dead end, Hedges said in her email. "Colstrip is on life support."

Most utilities that own a stake in units 3 and 4 will be required to speed up their depreciation schedules for their portion, or have indicated they will, clearing the way for retiring the plant, she said.

NorthWestern Energy's current depreciation schedule runs to 2043, and may be revised when the utility files for its next rate case, which it is expected to do later this year.

In the meantime, Ankney said, "We'll keep digging until they tell us to stop." [*Dan Catchpole*]

'It's a study that just scares the heck out of everybody in here, including me.'

Clearing It Up

[11] Inslee Carbon Tax Proposal Finds Some Utility, Business Support • from [2]

Testimony during a Washington legislative hearing on a carbon-emissions tax proposed by Gov. Jay Inslee garnered support from utilities and other businesses, as well as environmental groups, although some said it came because it was preferable to the outcome of an initiative this November.

"I must say, we absolutely prefer a legislative solution to this issue rather than an initiative," said Charlie Brown, who represented NW Natural and Cascade Natural Gas, in comments to the Senate Energy, Environment and Technology Committee Jan. 16. "We think that we can get it right by doing it through a legislative process."

Inslee's proposal, contained in [Senate Bill 6203](#), would impose a tax of \$20 per metric ton on greenhouse gas emissions starting in July 2019 that increases over time

(CU No. 1830 [8]; 1833 [16]).

The revenue from it would go toward projects that reduce GHG emissions, provide flood control and reduce wildfire risks. It would also help low-income families and mitigate the tax on so-called energy-intensive, trade-exposed businesses.

The measure includes several exemptions, such as fuel used solely for agricultural purposes and aircraft fuel.

In response to a question from Ranking Sen. Doug Ericksen (R-Ferndale), a Ways and Means Committee staffer estimated the escalating tax would amount to 35 cents per gallon of gasoline by 2030. Other consumer impacts were estimated as a 4-5 percent increase in electricity costs, and a 9-11 percent increase in natural gas.

Altogether, 60 individuals testified, including Inslee, and to accommodate them all the hearing went on for 2 1/2 hours, rather than the 1 1/2 hours normally allotted.

In addition to avoiding a potential alternative carbon-pricing plan passed by ballot, utilities also praised the bill's provision for credits against their carbon tax levies, based on carbon-mitigation projects funded by customer surcharges.

But they were concerned by a lack of clarity about where in some cases the tax would be collected.

In some cases, said John Rothlin, Avista's manager of Washington government relations, the bill appears to allow natural gas to be taxed upon entry into the state, even if it ultimately ends up in a market outside the state and would therefore not contribute to the state's GHG emissions.

It might be best to instead tax gas and power at the point of sale if it's inside the state, he said.

Another concern utility representatives expressed was with the starting level of the tax and its "steep" increase. The tax would start at \$20/metric ton, and increase six months later, on Jan. 1, 2020, by inflation, plus 3.5 percent, a rate that would be in place "in perpetuity," Rothlin noted.

Given this would be the "first of its kind" statewide carbon tax, Rothlin said, it might be "appropriate that there be a modest tax rate and a pause at some point to ensure that it is meeting its environmental objectives without creating adverse economic impacts."

Sen. Kevin Ranker (D-Orcas Island)—cosponsor of the bill with committee Chair Sen. Reuven Carlyle (D-Seattle)—pushed back a bit on this sentiment, which was echoed by several testifiers, saying, "I think the actions of doing nothing are far more costly than the actions of this bill."

Brown replied, "I think it's important to note that [NW Natural and Cascade] are up here saying we're willing to work with you, so we're not saying that there are not any costs.

"In fact," he continued, "[NW Natural] has made carbon reduction a top priority for them. We're trying to figure out how to do it in the context of this legislation."

Puget Sound Energy viewed that tax as helping it fulfill customer expectations.

"Our customers care about protecting the environment for future generations, and they expect us to show leadership in reduction efforts," said Steve Secrist, PSE senior VP and general counsel.

He also expressed concern about potential "interactions and impacts on energy markets, and our ability to continue our participation in the [Western] Energy Imbalance Market," and requested additional flexibility and latitude in crafting investments that would reduce GHG emissions.

George Caan, executive director of the Washington PUD Association, noted that while members of his organization were "divided" on the tax, some who were not opposed echoed concerns about where the tax would be collected, as well as requesting that a cap on the carbon price be imposed, rather than having the inflation and fixed adders applied without end.

Corporate supporters testifying included Microsoft and REI.

Microsoft, which recently worked a deal to have Puget Sound Energy wheel renewable generation it

buys itself to help achieve corporate sustainability goals (CU No. 1808 [11]), said there was no reason to delay a tax.

"We believe the time has come for Washington state to accelerate its efforts to address climate change and we stand ready to work with you all to get that done," Irene Plenefisch, Microsoft's government affairs director, said.

However, she sided with the utilities in urging that a "more gradual" tax be considered.

Marc Berejka, REI's director of government and community affairs, noted that the tax would help protect the state's \$20 billion outdoor recreation industry, which he said a recent study showed brings in \$2 billion in annual tax revenue.

"If government is going to raise billions in the name of the environment, it should assure that a healthy amount is reinvested back into programs that both protect natural places and help us access them," he said. "It's fantastic that this bill recognizes the importance of healthy forest and waters, that it combats forest fire and that sets aside money to address environmental hazards that disproportionately impact sectors that rely on a healthy environment."

But several critics said the measure would hurt consumers and businesses.

Tim Boyd said his clients—Industrial Customers of Northwest Utilities and Northwest Industrial Gas Users—oppose the bill, and called it "a step backwards from many other past proposals."

Problems include a "high starting tax, high escalator, and it doesn't take [energy-intensive, trade-exposed issues, or EITE] seriously," Boyd said.

It also doesn't provide the certainty needed for planning, said Boyd, noting that NWIGU members are "currently already using the most efficient, clean fuel they can," and that

ICNU members have no control over the fuel that generates the electricity they use, so the price signal to lower carbon emissions is of no use to them.

Bill Stauffacher said his clients, the Northwest Pulp and Paper Association's 11 pulp and paper mills, would not fare well under the tax, because they are the largest EITE sector, "by far," in the state.

"Our initial analysis paints a stunning and painful picture about how we would be impacted," he said. These include a \$56 million impact by 2020, increasing to \$90 million by 2030, he said.

The bill also doesn't offer "certainly or predictability on keeping EITE status," he said.

In comments made after the hearing by Republican leadership, Senate Minority Leader Mark Schoesler (R-Ritzville) acknowledged that some energy companies preferred a carbon tax legislative deal over an initiative, but said Republicans are looking to protect smaller businesses that aren't at the table.

Rep. Drew Stokesbary (R-Auburn) characterized the tax as an energy tax that would hurt consumers, and contrasted it to the gas tax increase from the 2015 transportation package. "At least we got a big new freeway out of it," he said, adding that he was unsure about what the payoff would be for the carbon tax. **[Rick Adair]**

'Our customers care about protecting the environment for future generations.'

[12] POTOMAC: FERC Commissioners Expect Regional Resilience Approaches • from [5]

Grid operators are likely to bring up regionally specific approaches for strengthening system resilience, two members of the Federal Energy Regulatory Commission said at a Jan. 16 forum at the Bipartisan Policy Center in Washington, D.C.

Commissioners Neil Chatterjee and Cheryl LaFleur also said resilience policies should be “fuel-neutral,” and that FERC cannot factor in elected officials’ preferences for particular generation resources.

Chatterjee and LaFleur spoke following the commission’s unanimous Jan. 8 decision to reject Energy Secretary Rick Perry’s proposal to make grid-resilience payments to baseload coal and nuclear generators with 90 days of on-site fuel storage.

“A resilience issue had not been demonstrated in that docket and the proposal was not just and reasonable,” LaFleur said.

Chatterjee said Perry “asked the right question, but he proposed the wrong remedy.”

The commission directed the California ISO and other centralized power market operators to report back in 60 days on resilience risks and how they’re addressing them. The commission specified an additional 30 days for reply comments. FERC may then consider steps to strengthen resilience.

LaFleur said regional operators are likely to spotlight a range of resilience issues and

Perry ‘asked the right question, but he proposed the wrong remedy.’

approaches. “How you make your system more resilient depends on what risks you’re mitigating against. I think we’ll hear about different risks from different regions,” she said. LaFleur pointed to regional differences in U.S. grids, such as California’s high levels of solar generation during peak demand periods and gas-pipeline capacity constraints in New England.

Noting what he called Perry’s “predisposition to favor particular fuel sources,” Chatterjee said the commission likely would continue to feel pressure from elected officials to show favoritism toward generation sources they prefer.

“I do believe elected officials are going to continue to fight for the various modes of power generation that are beneficial to the constituents that they represent, but it’s FERC’s role to block all that out and focus on an evidence-based, fact-based, record-supported, legally justified path forward,” he said.

Montana PSC’s Kavulla: PURPA ‘Largely Needless’

The Public Utility Regulatory Policies Act is a “largely needless” relic of a time when renewable energy sources were scarce and power demand was rising, Montana Public Service Commission Vice Chairman Travis Kavulla said Jan. 19 in backing PURPA reform legislation at a House subcommittee hearing.

Kavulla, speaking for the National Association of Regulatory Utility Commissioners, said in prepared testimony that NARUC supports HR 4476, which would

allow competitive resource solicitations to substitute for mandatory purchases of qualifying facilities using administratively set avoided costs.

Kavulla said PURPA has become outdated at a time of surging renewables development, widespread competitive sourcing of generation, and flat demand.

At a hearing of the House Energy and Commerce Committee’s Energy Subcommittee, Kavulla spoke in favor of the bill’s expanded exemption of utility purchase requirements for resources in competitive markets. Under PURPA currently, utilities in those markets are not required to buy from resources with capacity larger than 20 MW. HR 4476 would lower the exemption threshold to 2.5 MW.

In addition, Kavulla testified in favor of the bill’s revision of current language that he says results in “regulatory arbitrage” in which developers break projects into several facilities to get around the 80 MW cap on the size of QFs.

The practice “represents an attempt by certain QFs to avoid competition by safe-harboring themselves in what has been called the ‘one-mile rule,’ as [FERC]’s determination that a bright line of one mile’s distance qualifies projects as separate QFs,” he said.

HR 4476 “would allow a fact-dependent investigation by FERC to police such abuse,” Kavulla said.

Renewables industry representatives have spoken out against PURPA reform. At a Sept. 6 hearing of the subcommittee, solar finance specialist Todd Glass, speaking for the Solar Energy Industries Association, said the QF purchase obligation is still needed to ensure renewables projects can obtain financing.

“PURPA’s mandatory purchase obligation is a vital backstop that financing parties require as a necessary condition of their investments,” Glass told the panel.

Zinke Pushes Interior Reorganization

Interior Secretary Ryan Zinke released a reorganization plan on Jan. 10 for the Department of the Interior that would realign administrative boundaries along watershed lines instead of state borders.

The plan also could include moving the headquarters of some Interior agencies from Washington, D.C., to Western cities.

In a video to department employees, Zinke said “better integration at the ecosystem level for such missions as [National Environmental Policy Act reviews], permits, habitats, and recreation is what we need to do to be better stewards in the next century.” He cited John Wesley Powell, a 19th-century explorer who advocated drawing Western state boundaries along watershed lines.

An Interior Department map dated Jan. 3 shows the Western U.S. outside Alaska divided into eight administrative regions, with all 11 coterminous Western states except Arizona split among more than one region. Today, the Bureau of Land Management, which handles planning and permitting for onshore energy projects, is divided administratively into state offices.

At a Dec. 7 House subcommittee hearing, the Western Energy Alliance’s Kathleen Sgamma backed moving BLM’s headquarters to a Western city, but spoke critically about realigning the agency’s administrative boundaries.

“The notion of organizing BLM in such a way smacks of the BLM 2.0 planning rule that Congress overturned earlier this year under the Congressional Review Act. A reorganization based on ecosystems or watersheds sounds remarkably like the ‘landscape-level planning’ that Congress rejected,” Sgamma testified to the House Natural Resources Committee’s Oversight and Investigations Subcommittee.

Sgamma said under Zinke’s proposal, governors would have to deal with more than one BLM office, diluting their influence.

The Western Energy Alliance is an advocacy group for oil and gas producers.

FERC to Consider Grid Supply Chain Standard

FERC opened a rulemaking Jan. 18 on standards aimed at tightening cybersecurity in grid software and hardware supply chains.

A FERC staff report said outsourcing of information-technology components increases cybersecurity risks, including insertion of malware into software sold for bulk power-system operations.

FERC directed NERC to include in its proposed standards electronic access control and monitoring systems for “medium and high-impact bulk electric system cyber systems.”

Trump Signs LED Standards Exemption Bill

President Donald Trump signed a bill into law Jan. 12 that exempts LED lighting from external power supply energy-efficiency standards.

Bill author Rep. Diana DeGette (D-Colo.) said standards for external power supplies don’t work for LED lighting because of differences in power-conversion design. Standards for external power supplies, first adopted in 2007, were mandated by the Energy Policy Act of 2005, which became law when LED lighting was not widely available.

Both houses of Congress waved through DeGette’s bill on voice votes last year.

Energy Firms Defend Accumulating Federal Leases

Oil and gas producers defended their accumulation of energy leases and drilling permits on federal lands at a Jan. 18 House subcommittee hearing, arguing the practice is necessary for pulling together enough acreage for efficient production.

Accumulated leases and permits came under fire in testimony at a hearing of the House Natural Resources Committee’s Energy and Mineral Resources Subcommittee, which was called to explore what panel Chairman Paul Gosar (R-Ariz.) called “regulatory burdens,” including leasing delays of “over a decade.”

Nada Culver, senior counsel for The Wilderness Society, said one-third of leases sold for oil and gas production in 2017 went for \$10 per acre or less. She quoted a Government Accountability Office report saying such leases are put into production only 8 percent of the time. The Trump administration, she testified, is “encouraging widespread and wasteful speculation by the industry.”

Culver said 53 percent of the 27 million acres under lease at the end of 2016 was not in production, and 7,950 approved drilling permits have not been put to use.

Shane Schulz, government affairs director for Denver-based QEP Resources, an oil and gas producer, said companies seek to accumulate “lease blocks” to improve production efficiency.

“That not only benefits the operator, which selfishly, economically, that’s something we want, but it also lessens the environmental impact. You have less air emissions, you have less disturbance from a wildlife standpoint,” Schulz said.

Brian Steed, BLM’s deputy director for programs and policy, told the subcommittee the agency is seeking to streamline leasing, including a move to eliminate master leasing plans, which he called a “needless bureaucratic layer.”

Culver said master leasing plans address “potential conflicts up front” and direct energy leasing to lands “most suitable for that purpose.”

Ex-Interior Officials Decry Bird Law Reinterpretation

Former Interior Department officials took issue on Jan. 10 with the Trump administration’s recent memo saying the Migratory Bird Treaty Act does not prohibit “incidental take,” a potential source of liability for energy projects.

In a letter to Interior Secretary Ryan Zinke, the former officials called the reinterpretation “a new, contrived legal standard that creates a huge loophole” in protections. Acknowledging disagreement over the extent of the law’s protections, the officials noted that “over the course of our collective careers, significant progress has been made in defining the limits of this law through refined interpretations, court decisions, and common sense.”

In the memo issued Dec. 22, the Interior Department said imposing liability for accidentally killing any of the more than 1,000 bird species covered by the 1918 law would put “the sword of Damocles over a host of otherwise lawful and productive actions, threatening up to six months in jail and a \$15,000 penalty for each and every bird injured or killed.”

The letter said Interior officials in past administrations worked cooperatively with wind-energy developers to improve turbine siting.

“It has never been the goal to entirely eliminate the unintentional killing of birds, but when we find techniques and technologies that can be used at reasonable cost to protect bird populations, we had a responsibility to do so,” they said.

Signatories on the letter included directors of the U.S. Fish & Wildlife Service under Presidents Barack Obama, George W. Bush, Bill Clinton, George H.W. Bush, Jimmy Carter, Gerald Ford and Richard Nixon.

IEA Chief Sees Strong Renewables, Gas Growth

Renewables and natural gas-fired generation will surge in the coming decades, as onshore wind and solar become price-competitive without subsidies and fast-growing developing countries replace coal with gas to generate power, the head of the International Energy Agency told a Senate committee Jan. 16.

Renewables are projected to make up two-thirds of global investment in power plants between now and 2040, and will hold a 40 percent share of global power generation

by then, Fatih Birol, the IEA's executive director, told the Energy and Natural Resources Committee.

Birol said falling costs are making onshore wind and solar price-competitive with fossil fuels. "Around the year 2020, most of the renewables in the world may not need any more subsidies. They can be competitive with traditional sources of energy," Birol said in response to questions from Sen. Tina Smith (D-Minn.).

Birol also said the U.S. is "the undisputed global oil and gas leader," and is projected to become the world's largest liquefied natural gas exporter by the mid-2020s. He added that the U.S. is well-positioned to sell LNG to Asian countries, especially China and India, that are seeking to reduce urban air pollution by cutting back on coal-fired generation.

For China, "our projections suggest that coal use peaked in 2013," Birol testified.

The IEA is an energy policy analysis and information agency with 29 member countries, including the U.S.

EIA Spotlights Renewables Surge, Coal Losses

Nearly half the utility-scale power plants retired in the past decade were coal-fired while almost half the new capacity that came on line last year was renewable, the Energy Information Administration said in reports released Jan. 9 and 10.

Coal made up 47 percent of retired capacity nationally, while natural gas-fired steam plants accounted for 26 percent, with nearly all the remainder being oil-fired plants, EIA said.

In the Western Interconnection, EIA said retirements between 2008 and 2017 totaled 22 GW while new capacity added up to 53 GW, bringing the region's total capacity to 217 GW.

Meanwhile, nearly half the 25 GW of utility-scale capacity that came on line across the U.S. in 2017 was renewables, chiefly wind and solar, EIA estimated. An additional 3.5 GW of small-scale solar capacity started up last year, EIA said. *[Jim DiPeso]*