



It's Time to Retire, Not Bail Out, OVEC's Aging and Expensive Coal Plants

Passage of HB1414 Represents a Setback for Indiana Ratepayers

Executive Summary

The Indiana legislature recently passed HB 1414, which will require Indiana electricity ratepayers to continue to pay for power produced by two coal-fired power plants in southeast Ohio and Indiana. The two plants, Kyger Creek and Clifty Creek, are owned by the Ohio Valley Electric Corporation (OVEC). They were originally built sixty-five years ago to provide power to the now-closed Portsmouth Uranium Enrichment Facility. Both plants are uneconomic, with total costs far exceeding the current and expected future costs of obtaining power through the PJM and MISO markets.

HB 1414 was introduced in the Indiana General Assembly on January 15, 2020 with the avowed purpose of preserving the status quo for a year pending the findings and recommendations of the recently-created 21st Century Energy Policy Task Force for consideration by the legislature and the governor in 2021.

However, the bill quickly came under fire as a thinly disguised effort to bail out the Indiana coal industry and slow to a crawl the transition away from coal-fired generation by the state's electric utility sector. In particular, the bill was criticized for imposing regulatory roadblocks on the retirement of coal-fired power plants and for requiring utilities to follow power-plant planning and operating practices that would increase and extend the use of coal and thereby increase significantly both utility costs and customer rates.

After sometimes stormy and acrimonious debate, HB 1414 narrowly passed the Indiana House on February 3, 2020 by a vote of 52 to 41 substantially unchanged from the form in which it was originally introduced.

However, in the Indiana Senate, HB 1414 was amended to water down the regulatory roadblocks to coal plant retirements as well as eliminate a controversial provision that would have required regulators to allow utilities to maintain coal inventories at power plants at up to twice their normal levels. During this debate, the Senate sponsor of HB 1414, Senator Mark Messmer (R-Jasper), publicly proclaimed that, as amended, "There is nothing in this bill that has the potential to

raise rates."¹

During conference committee to reconcile the differences between House and Senate versions of the bill, HB 1414 was further amended to rebuild roadblocks to retiring coal plants but not to authorize higher coal inventories at operating plants. After contentious debate in both chambers, the conference committee report version of HB 1414 passed the House on March 10, 2020 by a vote of 56 to 37 and the Senate by a vote of 28 to 21. The bill became law with Governor Holcomb's signature on March 21, 2020.²

One of the more contentious provisions of HB 1414 relates to OVEC's two large, coal-fired plants built in the mid-1950s that are defined in the bill as "legacy generation resources." OVEC is a non-regulated affiliate of fifteen regulated electric utilities operating in four states (Indiana, Kentucky, Ohio and West Virginia) that are known as "Sponsoring Companies." These "Sponsoring Companies" are required by contract to purchase allocated shares of the generation from the two plants, the Kyger Creek plant located near Portsmouth, OH and the Clifty Creek plant located near Madison, IN. Two "Sponsoring Companies" operate in Indiana—Indiana Michigan Power Company ("I&M") and Southern Indiana Gas & Electric Company dba Vectren Energy Delivery ("Vectren"), which are allocated, respectively, 7.85% and 1.5% of the OVEC plants' coal-fired generation.

The provision of HB 1414 relating to these two "legacy generation resources" reads as follows:

A public utility may not terminate a power agreement with a legacy generation resource in which the public utility has an ownership interest unless the public utility provides the commission with at least three (3) years advance notice of the termination. The commission shall determine the reasonable costs incurred by the public utility under the power agreement and *allow the public utility to recover those costs in a fuel adjustment charge [italics added]* proceeding under IC 8-1-2-42. For purposes of this subsection, a public utility's reasonable costs related to a legacy generation resource means those costs, including deferred costs, allocated under a power agreement approved by the Federal Energy Regulatory Commission and relating to a legacy generation resource.

This provision of the bill has been criticized primarily for two reasons:

1. The Clifty Creek and Kyger Creek plants are old and uneconomic coal-fired power plants that should be retired as soon as possible and not afforded special treatment in order to extend their lives; and
2. Contrary to the public claim of HB 1414's Senate sponsor Sen. Messmer central to the bill's approval, the cost recovery language relating to these

¹ Indianapolis Business Journal. [Controversial coal bill gets green light from Indiana Senate](#). March 2, 2020.

² Indiana House General Assembly 2020 Session. [Indiana House Enrolled Act No. 1414](#).

two legacy generation resources definitely has "the potential to raise rates" for the retail customers of I&M and Vectren.

The Institute for Energy Economics and Financial Analysis (IEEFA) has looked at the financial impact of the OVEC bailout legislation (HB 1414), and has found:

- Indiana customers of I&M and Vectren could pay at least \$128 million above the cost of market power to keep the two plants in service between 2020 and 2026. A longer bailout would be even more expensive.
- OVEC's cost of power increased by nearly 60 percent from 2007 to 2018, in large part due to declining generation and ill-advised capital expenditures for pollution control equipment made after the markets were rendering the plants uncompetitive.
- Market conditions, including low natural gas prices and increasing competition from declining cost renewable resources, will continue to undermine the viability of the plants for years to come, potentially increasing the costs of the bailouts.
- The plants are not needed for grid reliability.
- A more prudent financial use of state resources would be to retire the two plants, to encourage development of renewable resources and end-use efficiency, and to provide fiscal support to the local governments during a multi-year transition period, as well as supporting workers who would be laid off.

The OVEC Plants Are No Longer “National Security Generation Resources”

The two OVEC plants, built sixty-five years ago to provide power for the Portsmouth Uranium Enrichment Facility, have not done so for many years because the facility closed in 2002. The contract between OVEC and the U.S. Department of Energy to supply electricity to the Portsmouth facility was cancelled in 2003. The “national security resource” description of the OVEC facilities by HB 1414 supporters thus seems to be nothing more than a misnomer to justify keeping the two plants operating for the financial benefit of their owners at the expense of their ultimate customers.

Five investor-owned utilities or holding companies in Ohio—Duke Energy Ohio, Columbus Southern Power Company, Dayton Power & Light, FirstEnergy Corporation, and Ohio Power Company—own 38.68 percent of OVEC (collectively “OVEC's Ohio IOU owners”). Two investor-owned utilities in Indiana—Indiana Michigan Power and Vectren—own 9.35 percent of OVEC (together “OVEC's Indiana IOU owners”). The remaining 51.97 percent is owned by eight other utility companies in the PJM and MISO transmission regions.

These owners voluntarily decided to extend the Inter-Company Power Agreement after the Portsmouth contract was cancelled. And they have continued to operate them even after 2011, when natural gas and energy market prices had declined precipitously. These declines eliminated any competitive economic advantage to continuing to operate the plants.

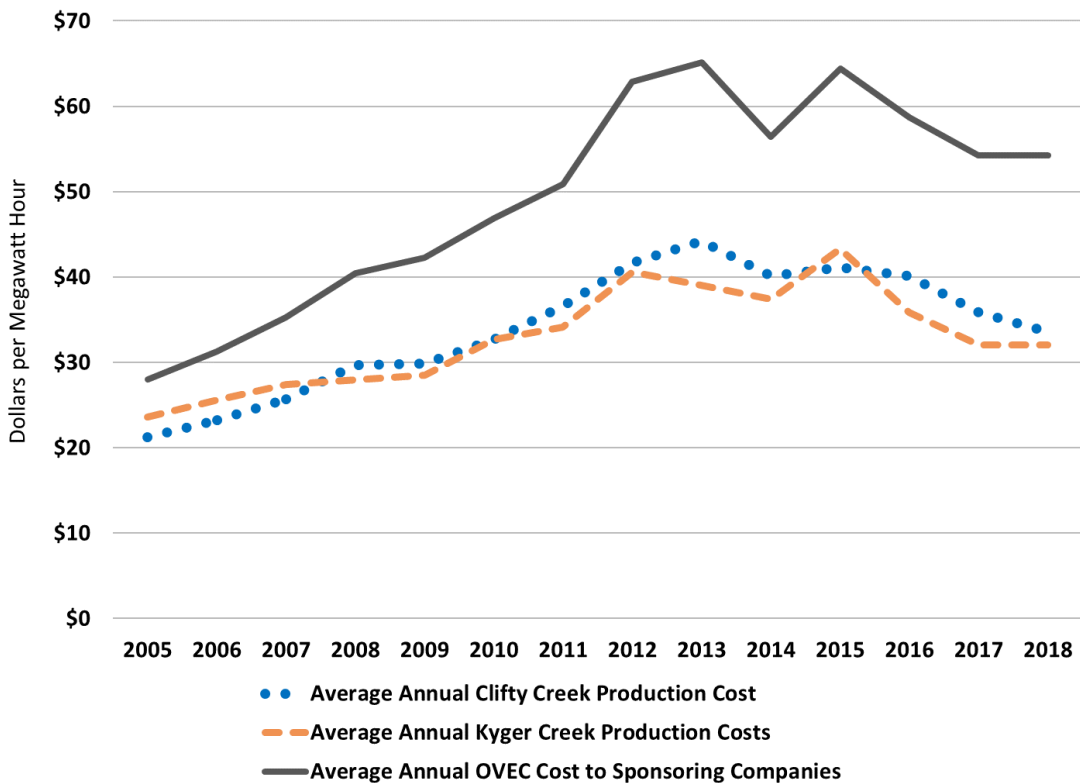
OVEC's owners purchase power from OVEC according to the terms of the extended Inter-Company Power Agreement, which now has a June 30, 2040 termination date. The proceeds from the purchase of power are designed to be sufficient to meet OVEC's operating expenses and fixed costs, including a return on equity and federal and state income taxes calculated at the statutory rate whether or not the Company actually pays those taxes.

HB 1414 would require the Indiana customers of I&M and Vectren to pay the difference between the cost of buying power from OVEC and the revenue these owners would receive from selling their shares of the power generated at Clifty Creek and Kyger Creek at market-based prices. This effect of the cost recovery language in HB 1414 will transfer the financial risk of continuing to operate the two coal plants from OVEC's owners to their customers and will lead to further rate increases.

OVEC Power Is Already Very Expensive

The cost of OVEC power has increased dramatically, rising nearly 60 percent between 2007 and 2018. This increase has been driven to a large extent by major increases in the costs of producing power at Kyger Creek and Clifty Creek. The rising cost of OVEC power also has been driven by the annual capital expenditures (capex) invested by the owners, including more than \$1.6 billion spent since the DOE contract was cancelled in 2003. The most significant capex was an ill-timed investment of more than \$1 billion for flue gas desulfurization (FGD) scrubbers that was added to the cost of the plant in the years 2011-2013.

Figure 1: Rising OVEC Power Costs



Source: OVEC Annual Reports and OVEC and Indiana-Kentucky Electric Corporation (IKEA) Annual FERC Form 1 Filings.

OVEC power costs in the years 2014-2016 would have been even higher than shown in Figure 1 if the owners had not decided that beginning in 2014 they would defer recovery of the equity returns on their investments in OVEC.³ However, this practice has been eliminated and OVEC's owners are now recovering these costs from ratepayers.⁴

Changing Market Conditions Have Undermined the Financial Viability of OVEC's Clifty Creek and Kyger Creek Plants

At the same time that OVEC's cost of power has been climbing, the underlying market conditions that once favored coal have changed remarkably. As a result, OVEC power is now significantly more expensive than the cost of buying electricity

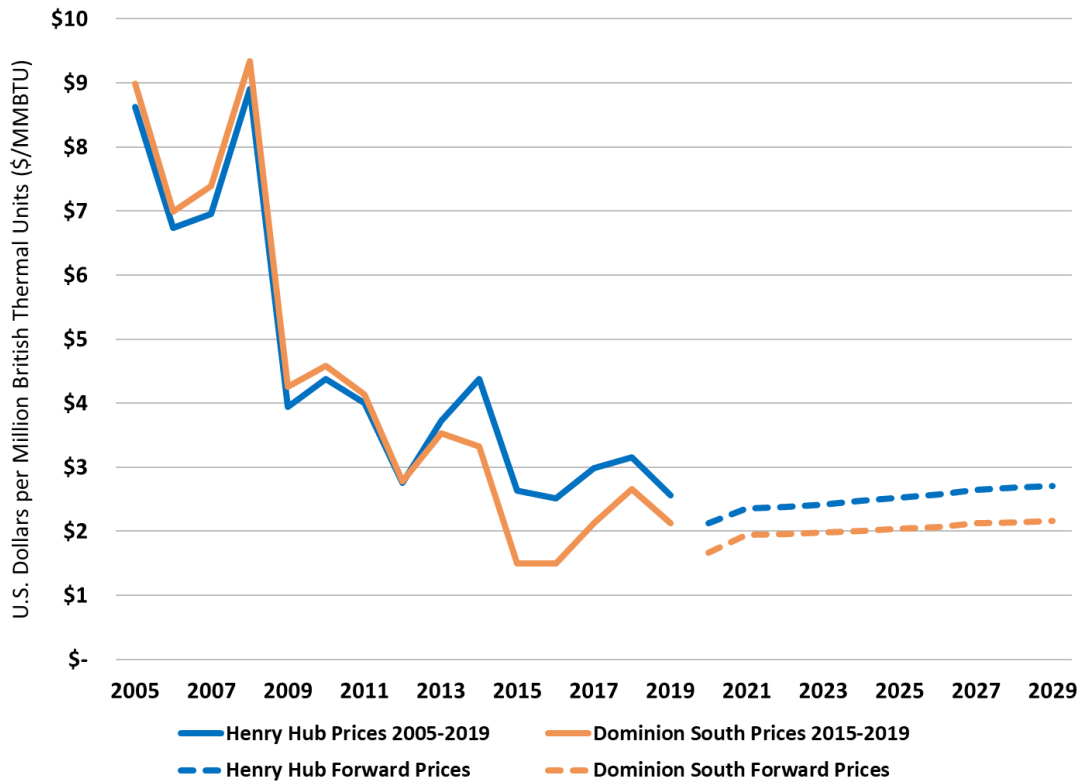
³ OVEC Notes to Consolidated Financial Statements as of and for the Years Ended December 31, 2016 and 2015, p. 7.

⁴ OVEC Notes to Consolidated Financial Statements as of and for the Years Ended December 31, 2018 and 2017, p. 7.

and capacity in the regional PJM and MISO markets.

Most importantly, natural gas prices collapsed in late 2008/early 2009 and have remained very low since. Gas prices also are expected to continue to remain low for the foreseeable future.

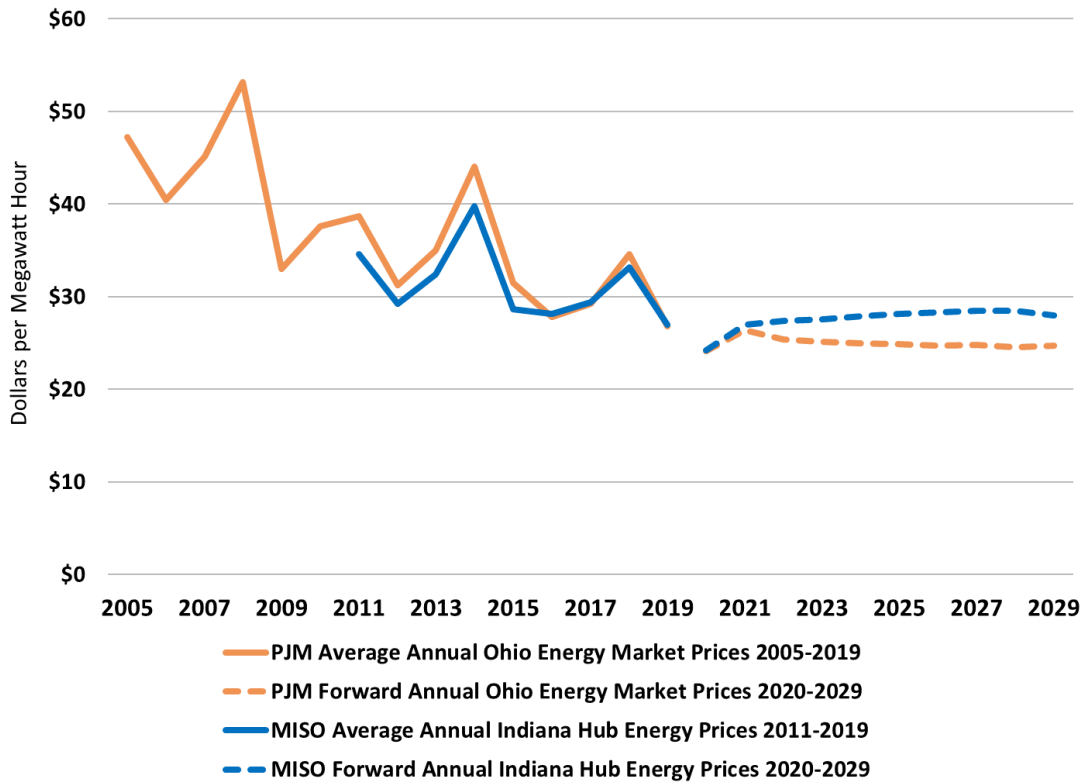
Figure 2: Henry Hub Natural Gas Prices



Source: U.S. EIA Data for Historical Henry Hub Prices and Natural Gas Forwards Prices from S&P Global Market Intelligence and OTC Global Holdings.

These low natural gas prices have had a number of disastrous impacts on the financial viability of coal plants like Clifty Creek and Kyger Creek. First, low gas prices reduced the cost of generating electricity at gas-fired power plants. This, in turn, has led to lower energy market prices, as gas-fired units have increasingly set power prices during many hours of the year. This has meant that the owners of coal plants in competitive markets like Clifty Creek and Kyger Creek are getting less revenue for each megawatt-hour (MWh) of power that they sell.

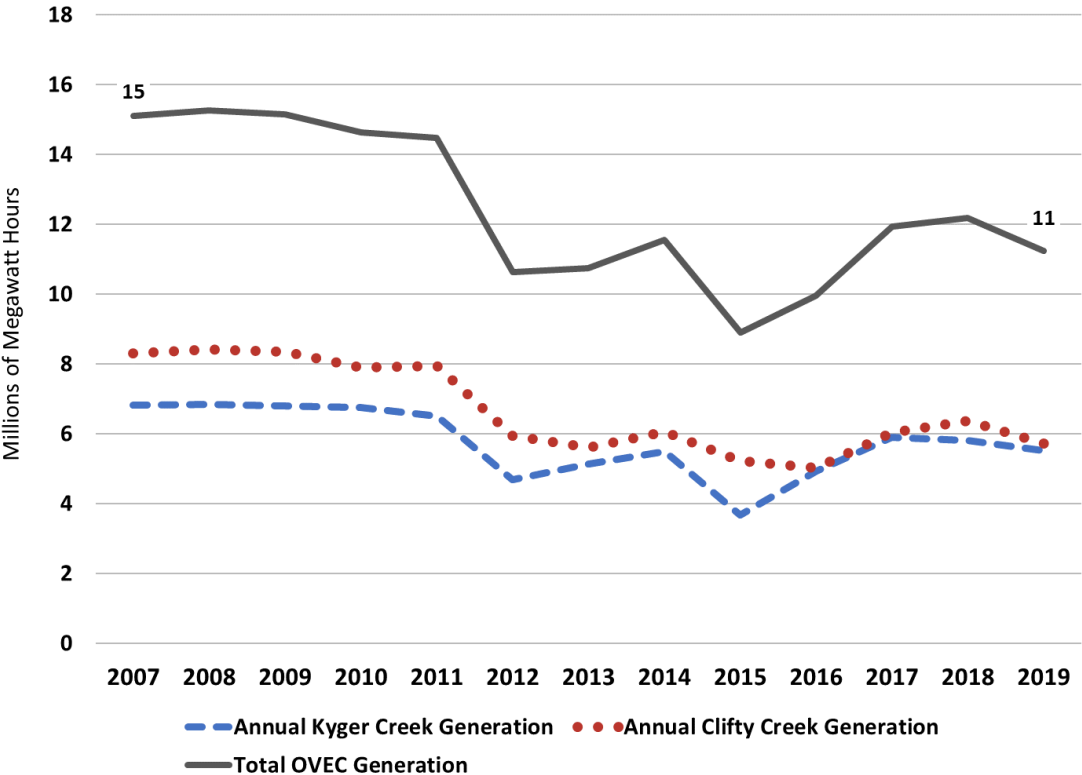
Figure 3: PJM Energy Market Prices



Source: Historical and Forward Energy Market Prices from S&P Global Market Intelligence and OTC Global Holdings.

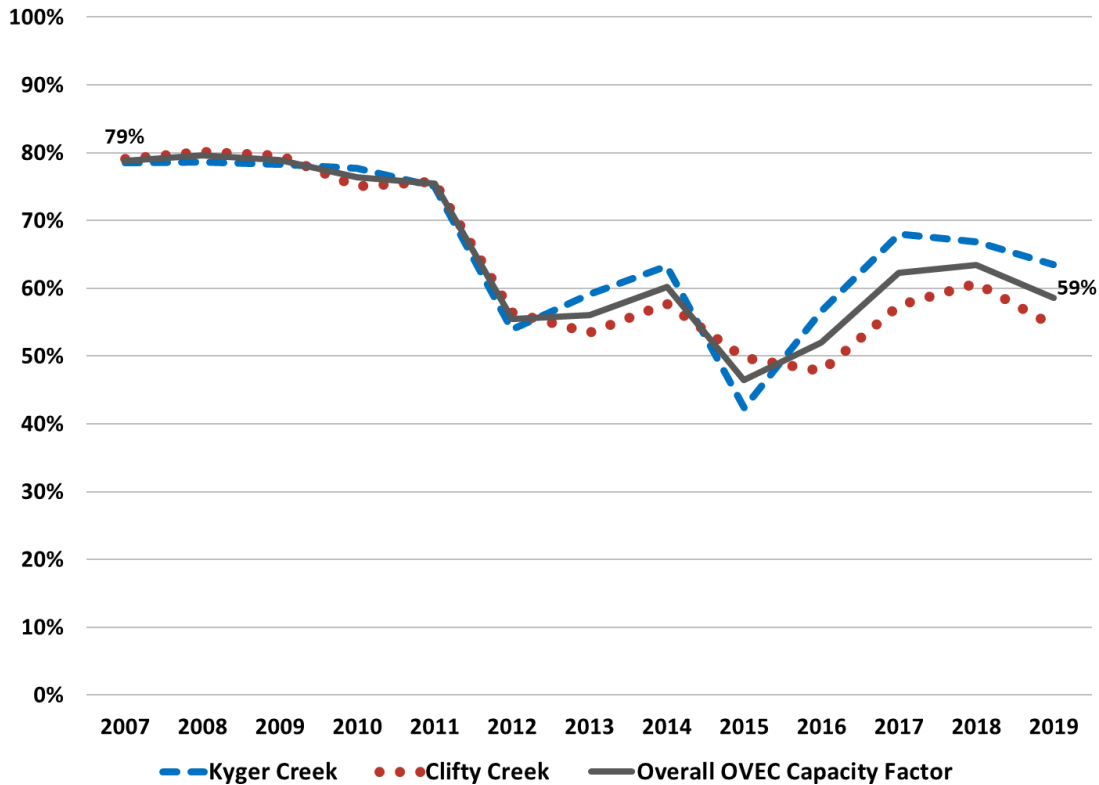
At the same time, low gas prices have meant that generation from newer, more efficient gas-burning plants has displaced power that otherwise would have been produced at coal-fired plants like Clifty Creek and Kyger. This has meant that the annual generation at OVEC's plants has been in a steady decline since 2008, except for a minor, and probably temporary, uptick starting in 2016. As a result, total OVEC generation declined by more than 25% percent between 2007 and 2019.

Figure 4: Declining OVEC Generation



Source: Annual OVEC and IKEC FERC Form 1 Filings and EIA Form 923 filings.

Figure 5: Declining Clifty Creek and Kyger Creek Annual Capacity Factors

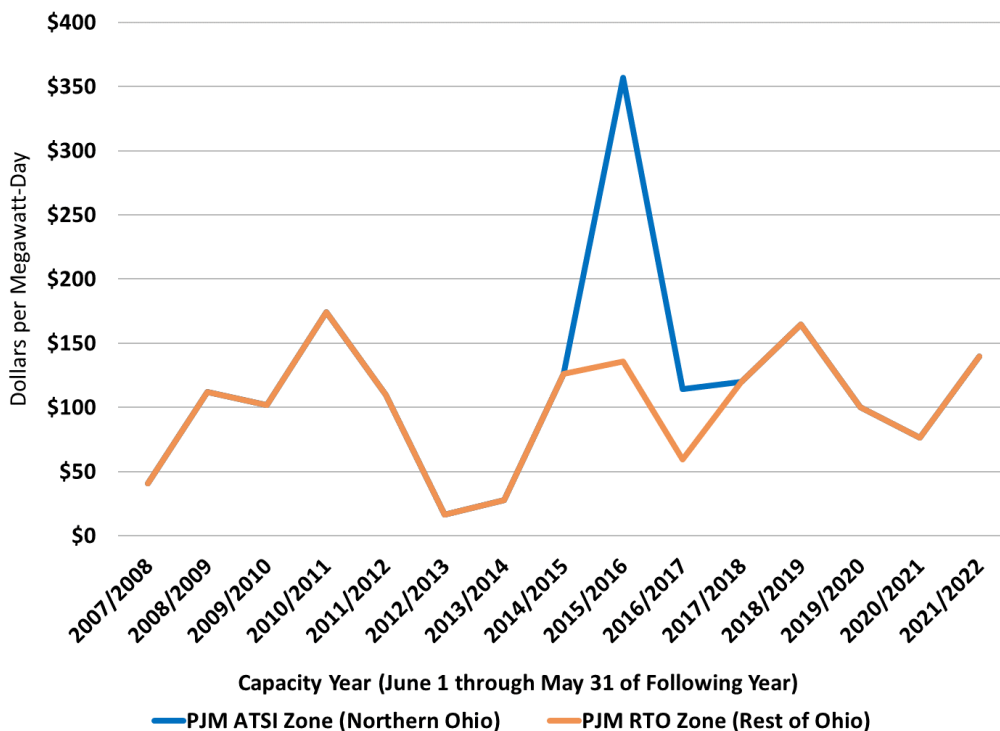


Source: Annual plant capacity factors developed from data downloaded from S&P Global Market Intelligence which was based on annual EIA Form 923 data.

Thus, low natural gas prices have had a doubly negative impact on the viability of coal plants in competitive markets like those in PJM and MISO. The owners have not only been getting lower revenues for each MWh of power they sell from Clifty Creek and Kyger Creek, but they also are selling many fewer MWh from the plants.

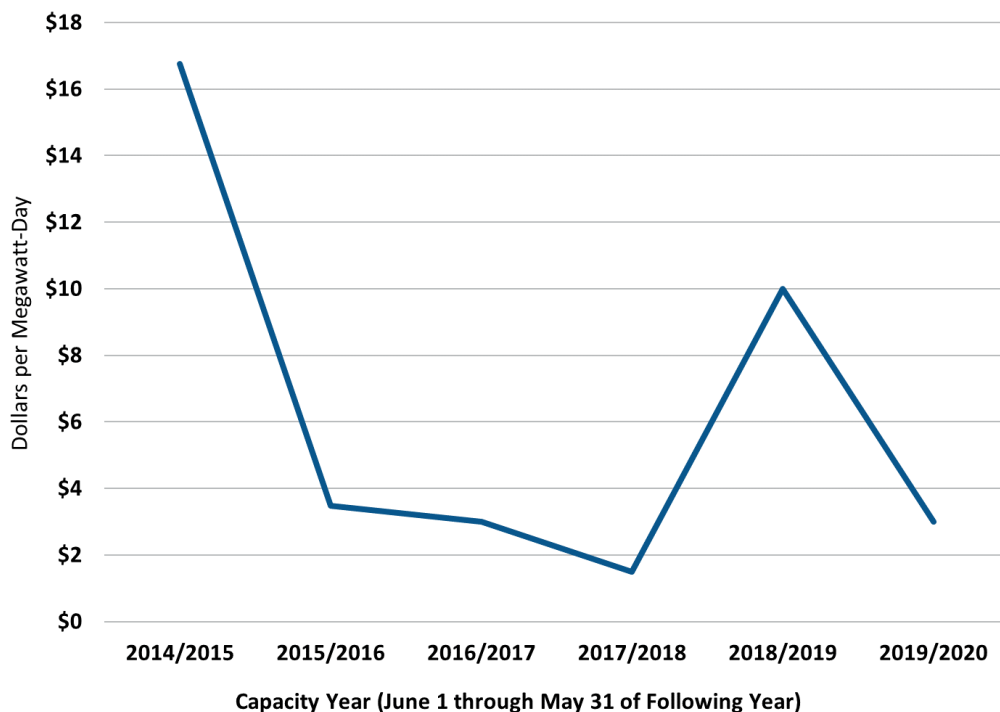
New gas-fired combined cycle plants also have meant increasing competition for coal-fired generators in the capacity markets/auctions in PJM and MISO. Consequently, capacity market prices have been both volatile and also fairly low, far below what PJM and MISO have set as the target Cost of New Entry (CONE) prices for the auctions.

Figure 6A: PJM Capacity Auction Prices



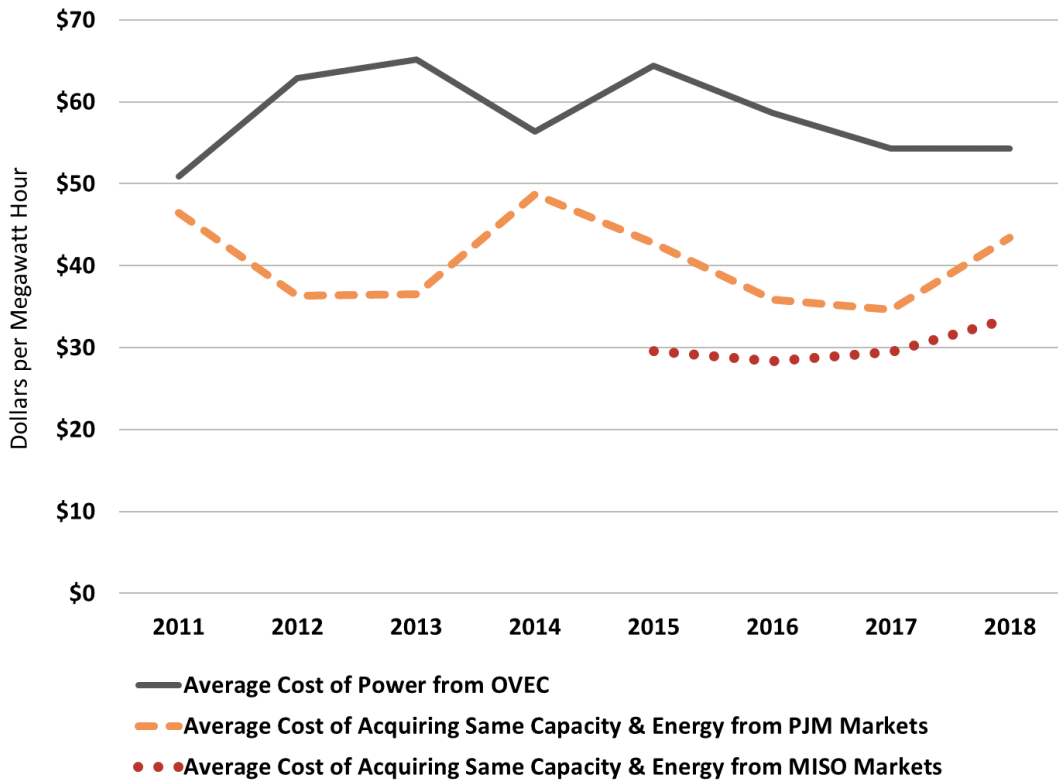
Source: PJM LLC. *2021/2022 RPM Base Residual Auction Results*. May 23, 2018.

Figure 6B: MISO Indiana Hub Capacity Auction Prices



Source: MISO *2019/2020 Planning Resource Auction (PRA) Results*, April 12, 2019.

Figure 7: OVEC Annual Costs in the Years 2007-2017 Compared to Average Cost of Purchasing Energy and Capacity in PJM and MISO Markets



As a result, OVEC's owners have been increasingly unable to recover all the costs of providing power from Clifty Creek and Kyger Creek by selling the power into the markets. Instead, they have increasingly sought to recover those costs from their customers. For example, just since 2010, the price of OVEC power has cost its Indiana IOU owners more than \$80 million above what it would have cost to buy the same amounts of energy and capacity in the PJM and MISO markets. And this does not include the equity returns that OVEC deferred beginning in 2014 and that its owners will be collecting from their customers in coming years under HB 1414.

Future Market Conditions Are Unlikely to Improve the Financial Viability of Clifty Creek and Kyger Creek

As shown in Figures 2 and 3, natural gas prices and energy market prices in PJM are expected to remain low for the foreseeable future.⁵ There also is little reason to expect that capacity prices in PJM and MISO will increase dramatically in coming

⁵ "Forward prices" represent the prices at which natural gas or electric power can be purchased today for delivery months or years in the future. As such, they represent the market's outlook for future natural gas or power.

years. PJM's 2020 Forecast Report projects little growth in peak demand or energy usage over the next decade (0.6 percent average annual growth rates)⁶ and approximately 163,627MW of unforced capacity cleared in PJM's recent auction for the 2021/2022 capacity year.⁷ This represented an overall 21.5 percent reserve margin for the PJM RTO (5.7% above the 15.8% target reserve margin) with another 21,000MW of capacity that failed to clear in the auction.⁸ MISO's most recent long-term load forecast projects very low energy and peak demand growth over the next decade of slightly above 1% annual growth.⁹

Therefore, it is extremely likely that energy and capacity prices will remain low in coming years. At the same time, it is reasonable to expect that the price of OVEC power will continue to rise given the historic increases in the costs of operating and maintaining Clifty Creek and Kyger Creek in recent years (shown in Figure 1) and the expected need for additional capex investments.

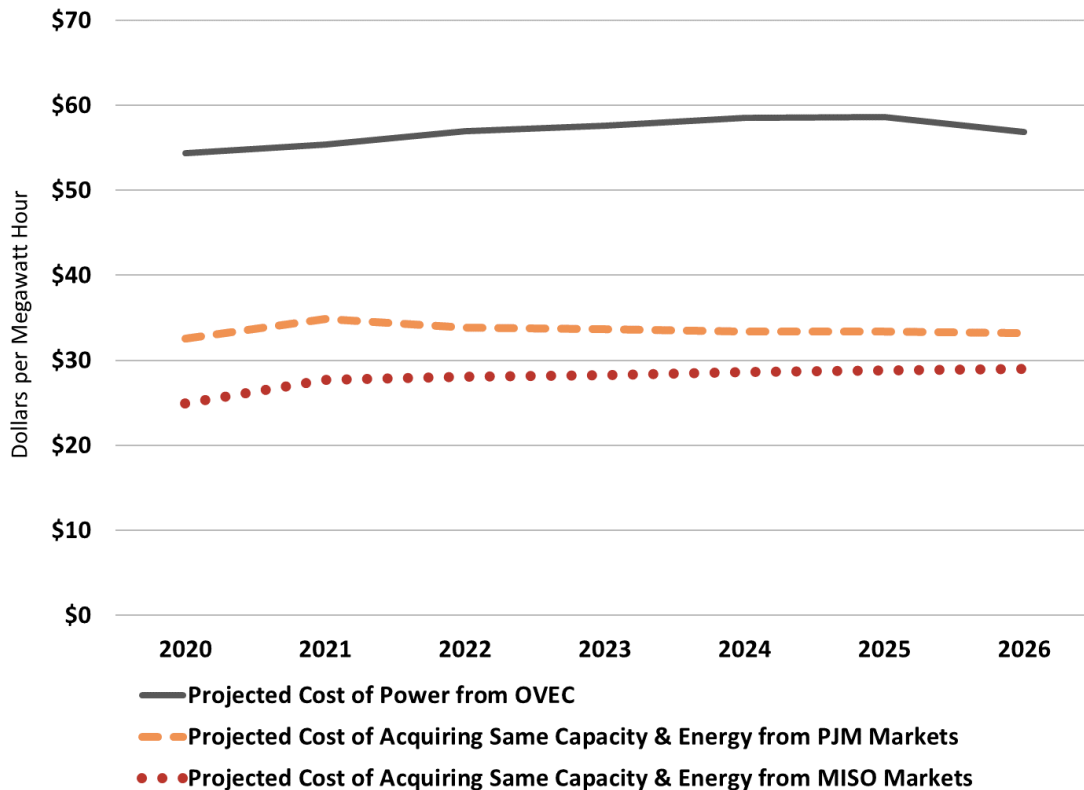
⁶ [PJM 2020 Long-Term Load Forecast Report](#), January 6, 2020.

⁷ PJM conducts capacity auctions each year to ensure that there will be adequate resources three years into the future to meet projected demands while providing a reasonable reserve margin. Thus, the May 2018 PJM auction was to acquire capacity for the year that will begin on June 1, 2021 and run through May 31, 2022.

⁸ [PJM LLC. 2021/2022 RPM Base Residual Auction Results](#).

⁹ [2019 MISO Energy and Peak Demand Forecasting for System Planning](#), prepared for MISO by the State Utility Forecasting Group at Purdue, November 2019.

Figure 8: Projected Annual Costs of Power from OVEC Compared to the Future Average Cost of Purchasing Energy and Capacity in PJM and MISO Markets



Source: Projected OVEC non-fuel costs from Indiana Michigan Power Company's Response to Data Request No. OUCC 12 04 in IURC Docket No. 44967. Projected OVEC fuel costs developed from Indiana Michigan Power Company's filings in IURC Cause Nos. 38702-FAC83 and FAC84. Forward PJM energy market prices from S&P Global Market Intelligence. Future PJM and MISO capacity prices based on prices during recent five years.

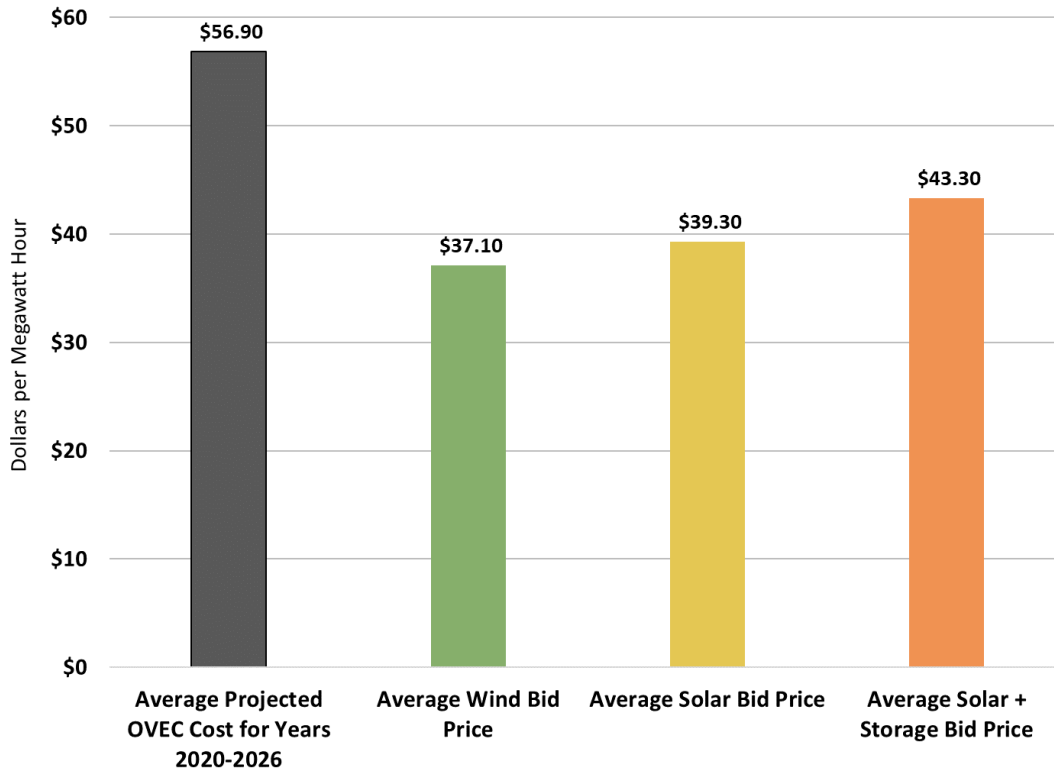
Moreover, it is very likely that the cost of operating the plants will increase as they continue to age and/or that their operating performance will deteriorate. After all, the Kyger Creek and Clifty Creek plants already are 64-65 years old. This is important because older plants, on average, tend to cost more to operate and maintain and are less reliable, according to analyses by the U.S. Department of Energy's Argonne National Laboratory and the National Energy Technology Laboratory, which have found that coal plant heat rates increase with plant age, while plant availability declines.¹⁰ Heat rate is a measure of a power plant's efficiency in generating electricity; a higher heat rate means that a plant is less efficient. And, in general, power plants tend to become less efficient as they age. Plant availability measures the percentage of operating hours in which a plant was actually available to generate power, and plants tend to become less available to

¹⁰ DOE Staff Report to the Secretary on Electricity Markets and Reliability. August 2017, page 155.

generate power as they age, in part because they tend to have more unanticipated problems and unplanned outages.

As a result, there is absolutely no reason to expect that OVEC's price of power will fall below market prices at any time in the future. Nor is it reasonable to expect that OVEC's price of power will be below the cost of renewable alternatives, as can be seen from a comparison of IEEFA's projected OVEC costs and the average bid prices received by Northern Indiana Public Service Company (NIPSCO) in response to its 2019 Request for Proposals.

Figure 9: Projected Costs of Power from OVEC versus Average Wind, Solar and Solar + Storage Power Purchase Agreement Bid Prices Received by NIPSCO



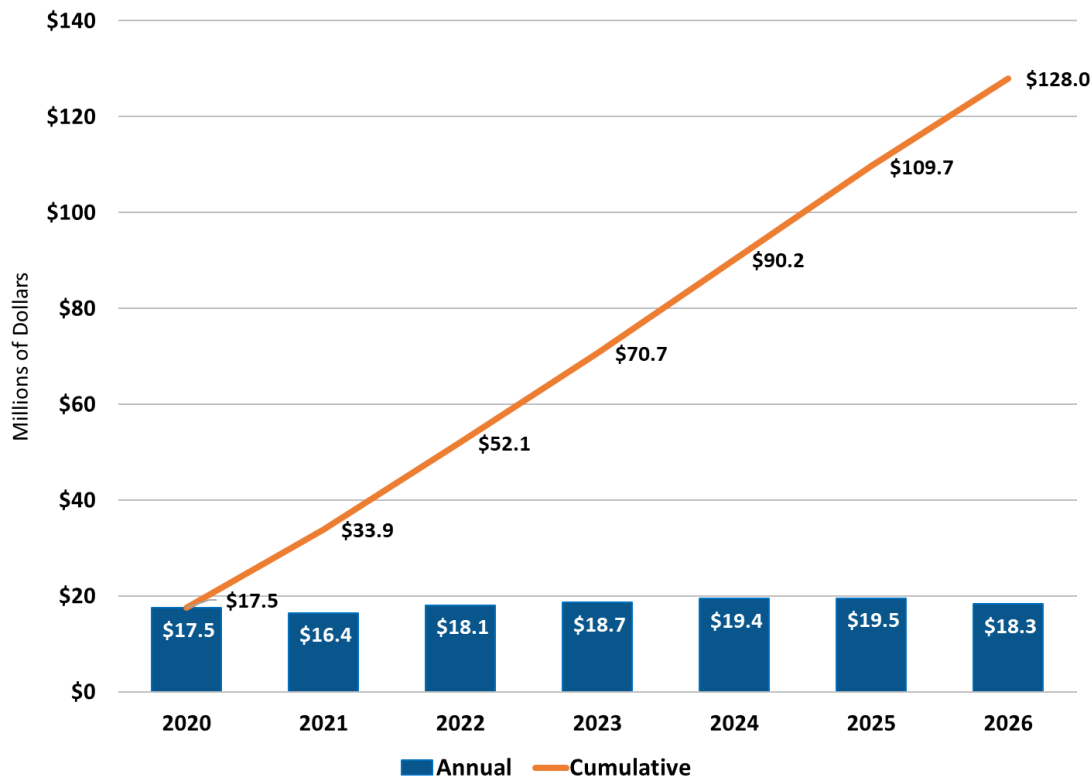
Source: Results from Northern Indiana Public Service Company's (NIPSCO) 2019 Request for Proposals, February 18, 2020.

Continuing to Subsidize the Two Plants Would Cost Indiana Customers at Least \$128 Million Through 2026

As shown in Figure 10, it will be extremely expensive for Indiana electricity customers to bail out OVEC's owners for the continued operation of the Clifty Creek and Kyger Creek plants through 2026—costing Indiana consumers \$128 million.

This would still be true even if only a shorter-term bailout were adopted. For example, subsidizing the continued operation of OVEC's coal plants just through the end of 2023 would cost the customers of OVEC's Indiana owners over \$70 million above what they would otherwise pay for power.

Figure 10: Estimated Indiana Ratepayer Subsidies that Would Be Allowed Under HB 1414



It is important to emphasize that the annual OVEC costs shown in Figure 8 and the subsidies presented in Figure 10 are conservative in that:

- They assume that OVEC's future plant operating costs only increase at an average of less than 2 percent per year.
- They assume that there are no further declines after 2019 in the energy generated at Clifty Creek or Kyger Creek or any significant increases in the plant's operating & maintenance costs, perhaps as the result of aging-related problems or costs.
- They do not include any future annual capital expenditures such as \$300 million of capex that OVEC estimated was necessary between 2018-2020.¹¹

¹¹ *In the Matter of Application of Duke Energy Ohio, Inc. for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan, Accounting*

- They do not assume any emissions costs for the millions of tons of carbon dioxide that Clifty Creek and Kyger Creek emit each year. Even a modest \$10 per ton emissions cost would increase significantly the annual subsidy that would be required under HB 1414.
- They do not assume any capex costs for the Coal Combustion Residuals Rule ("CCR") cleanup costs expected to be required during the early 2020s at both Clifty Creek and Kyger Creek.
- They do not assume any increased financing costs or accelerated debt repayment obligations in the foreseeable future associated with lower credit ratings for OVEC or early termination of the ICPA in response to the risks of deteriorating energy and capital market conditions facing the corporation as signaled by filings in the bankruptcy proceedings for Sponsoring Company First Energy Solutions (FES) and related credit ratings and reports released by agencies such as Moody's Investors Service.

Given the substantial gap between the cost of OVEC power and expected PJM energy and capacity prices, shown in Figure 8, there are unlikely to be any meaningful opportunities for customers to earn annual credits if the net revenues from selling the power from Clifty Creek and Kyger Creek into the markets exceed the prudently incurred costs associated with the plants.

Clifty Creek and Kyger Creek Are Not Needed for Grid Reliability

Neither Clifty Creek nor Kyger Creek is necessary to assure electric grid reliability:

- The reliability of the grid is a regional issue for PJM and MISO.
- PJM is projecting that it currently has far more capacity than the minimum that would be needed to ensure an adequate level of grid reliability. For example, 163,627 MW of unforced capacity cleared the PJM RPM capacity auction for the 2021/2022 capacity year. This represented a 21.5% reserve margin which is 5.7% above PJM's target 15.8% reserve margin. Another 21,000 MW of capacity did not clear the auction.
- At the same time, both PJM and MISO are projecting very low energy and peak demand growth over the next decade. In addition, new natural gas-fired and renewable resources are being added in both ISOs, making it unlikely that either would have any reliability problems in the next decade, or perhaps longer, even if Clifty Creek and/or Kyger Creek were retired in the near future.

- Ten new gas-fired plants are under construction or coming to Ohio, according to a list prepared by Marcellus Drilling News. When considered with new renewable resources that could be available, these new gas-fired units would more than displace any generation lost if Clifty Creek and Kyger Creek were retired.

A Better Economic Decision for Indiana (and Other States With OVEC Owners)

Retire the Plants and Provide Fiscal Support to Local Governments and Employee Transition Assistance

Instead of approving a long-term (or even a shorter-term) bailout of I&M and Vectren's investment in Clifty Creek and Kyger Creek, the Indiana legislature should require these OVEC owners (a) to determine the least cost way to retire the plants in the near future and (b) to work with the affected states, communities, and employees to plan for the orderly and just transition to profitable as well as sustainable energy resources.

About IEEFA

The Institute for Energy Economics and Financial Analysis conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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David Schlissel, director of resource planning analysis for IEEFA, has been a regulatory attorney and a consultant on electric utility rate and resource planning issues since 1974. He has testified as an expert witness before regulatory commissions in more than 35 states and before the U.S. Federal Energy Regulatory Commission and Nuclear Regulatory Commission. He also has testified as an expert witness in state and federal court proceedings concerning electric utilities. His clients have included state regulatory commissions in Arkansas, Kansas, Arizona, New Mexico and California. He has also consulted for publicly owned utilities, state governments and attorneys general, state consumer advocates, city governments, and national and local environmental organizations. Schlissel has undergraduate and graduate engineering degrees from the Massachusetts Institute of Technology and Stanford University. He has a Juris Doctor degree from Stanford University School of Law.

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