



# Bailout Bill a Bonanza for FirstEnergy Solutions, but a Boondoggle for Ohio Consumers

## Summary

The impetus for Ohio House Bill 6, is the undeniable fact that energy markets are changing, making nuclear and coal-fired power uncompetitive with natural gas and renewables for electricity generation. FirstEnergy Solutions is seeking a bailout of its two nuclear plants, Davis Besse and Perry. Its remaining coal-fired power plant in Ohio, Sammis, may benefit from the bailout as well. If the bill passes, the cost to Ohio consumers and businesses is estimated at more than \$300 million per year in perpetuity.

Ironically, although bailout proponents acknowledge the role of market forces in creating current conditions, they are using distorted and, in some cases, highly misleading arguments about the way energy markets work to bolster their arguments for House Bill 6.

The Institute for Energy Economics and Financial Analysis (IEEFA) has examined the claims made by FirstEnergy and its supporters and has found that:

- FirstEnergy's nuclear and coal plants are not needed to ensure electricity supply or reliability in Ohio.
- Taking the nuclear plants off the market is unlikely to drive up electricity rates in Ohio – but reducing energy efficiency and renewable energy could have that effect.
- If Ohio is serious about providing low cost sources of clean energy, it would make more economic sense to invest in solar energy than to subsidize aging nuclear plants.

IEEFA recommends that Ohio follow the lead of New York state and allocate resources to support the tax bases of all school districts and communities going through the economic transition caused by the closure of coal and nuclear plants.

The state should also embark on a serious program to support workers who lose their jobs when coal and nuclear plants close. This should include pushing for thorough and timely clean up and decommissioning of these facilities, with hiring preferences for people currently employed at the plants.

## **1. FirstEnergy’s nuclear and coal plants are not needed to energy ensure supply or reliability in Ohio.**

There is no reason to be concerned that retirement of Davis-Besse and Perry will lead to electricity blackouts or other reliability problems. PJM, the operator of the regional electricity market, has concluded that the deactivation of FirstEnergy Solutions’ nuclear power plants in Ohio and Pennsylvania will have no effect on the reliability of the electric power grid.<sup>1</sup> Moreover, the major share of electricity black and brown outs are due to problems with the transmission and distribution systems, not with the adequacy of generating resources.<sup>2</sup>

PJM as a whole has more than enough capacity to reliably serve projected demand, as can be seen in the results of the annual capacity auctions PJM conducts to ensure that it will have enough power during peak periods. For example, the results of PJM’s 2018 capacity auction showed that it will have 163,627 megawatts (MW) of committed capacity for the Delivery Year 2021/2022.<sup>3</sup> This capacity will give PJM a 21.5% committed reserve margin, which is well above its target reserve margin of 15.8%. And this is without Davis-Besse and Perry, both of which failed to clear the auction—meaning that FirstEnergy Solutions will not receive any capacity revenues for the plants in Delivery Year 2021/2022.

<b>Delivery Year</b>	<b>Committed Capacity</b>	<b>Target Reserve Margin</b>	<b>Committed Reserve Margin</b>
2017/18	167,004 MW	15.7%	19.7%
2018/19	166,837 MW	15.7%	19.8%
2019/20	167,306 MW	16.5%	22.4%
2020/21	165,109 MW	16.6%	23.3%
2021/22	163,627 MW	15.8%	21.5%

\* The PJM Delivery Year runs from June 1 – May 31

Source: *Statement of F. Stuart Bresler, III on Behalf of PJM Interconnection before the Ohio House Energy and Natural Resource Committee. April 9, 2019.*

As can be seen from the figure above, PJM’s committed reserve margins for the Delivery Years 2019/2020 and 2020/2021 also are substantially higher than its target reserve margins for those periods. Thus, the proposed legislation will be asking state consumers to pay into the Ohio Clean Air Fund to support unneeded nuclear generating capacity.

<sup>1</sup> FirstEnergy Solutions Comments on Results of PJM Capacity Auction. May 24, 2018.

<sup>2</sup> Rhodium Group. *Electricity System Reliability: No Clear Link to Coal and Nuclear*. October 23, 2017.

<sup>3</sup> The annual auctions are designed to ensure that PJM will have enough capacity three years ahead of when it will be needed. The 2018 auction was to serve a Delivery Year that will begin on June 1, 2021 and end on May 31, 2022.

Ohio would have enough generating capacity even if Davis-Besse and Perry were retired as currently planned in 2020 and 2021. For example, since 2017, more than 3,200 MW of new generating capacity has come online in Ohio. Another 7,800 MW of new generating capacity is in some stage of development, according to PJM.<sup>4</sup>

All of this new capacity is expected to be added in Ohio even though PJM forecasts that electric demands (both peak load and energy) will grow at less than 1% annually over the next 15 years.<sup>5</sup>

In 2018, nearly 24% of the electricity consumed in Ohio was imported from outside the state, as has been the case for years.<sup>6</sup> Importing power from other states is not due to Ohio's inability to meet its demand from its locally-owned generating units; instead it means that lower cost generation from outside of Ohio was able to serve Ohio's consumers.<sup>7</sup>

Interestingly, as seen in the chart below, out of 18 nuclear plants in PJM, only three are forecast to lose money in the years 2019-2021: Davis-Besse, Perry and Three Mile Island. If 15 nuclear plants can make a profit in the competitive PJM region, the economic problems faced at Davis-Besse and Perry should, at least in large part, be attributed to bad management at FirstEnergy instead of bad market design.

**Table 7-42 Nuclear unit forward annual surplus (shortfall) (\$ in millions)<sup>56</sup>**

	Surplus (Shortfall)		
	(\$ in millions)		
	2019	2020	2021
Beaver Valley	\$134.3	\$93.5	\$84.7
Braidwood	\$106.4	\$80.3	\$51.7
Byron	\$104.3	\$78.6	\$50.6
Calvert Cliffs	\$131.0	\$99.0	\$89.3
Cook	\$95.8	\$48.4	\$41.9
Davis Besse	(\$26.9)	(\$47.8)	(\$45.6)
Dresden	\$97.3	\$76.4	\$53.8
Hope Creek	\$57.9	\$52.0	\$43.3
LaSalle	\$103.5	\$78.0	\$50.2
Limerick	\$112.2	\$100.5	\$83.8
North Anna	\$138.6	\$99.3	\$90.0
Peach Bottom	\$113.4	\$101.5	\$84.1
Perry	(\$22.6)	(\$49.6)	(\$47.8)
Quad Cities	\$61.3	\$42.2	\$20.9
Salem	\$114.6	\$102.8	\$85.5
Surry	\$120.5	\$85.6	\$77.6
Susquehanna	\$77.7	\$37.4	\$28.2
Three Mile Island	(\$56.9)	(\$69.6)	(\$72.3)

Source: *PJM 2018 State of the Market*, Table 7-42, at page 352 of Volume II.

<sup>4</sup> Statement of F. Stuart Bresler, III on Behalf of PJM Interconnection before the Ohio House Energy and Natural Resource Committee. April 9, 2019.

<sup>5</sup> PJM 2019 Load Forecast Report, at pages 45-46 and 81-82.

<sup>6</sup> Statement of F. Stuart Bresler, III on Behalf of PJM Interconnection before the Ohio House Energy and Natural Resource Committee. April 9, 2019.

<sup>7</sup> Ibid.

---

## **2. Taking the nuclear plants off the market is unlikely to drive up electricity rates in Ohio—but reducing energy efficiency and renewable energy could have that effect.**

FirstEnergy Solutions<sup>8</sup> and proponents of the bailout argue that closing Davis Besse and Perry will drive up electricity bills in Ohio, going so far as to say, “Looking at Ohio specifically, electric bills for the average residential consumer will increase by \$2.50-\$5.00 per month, according to recent studies.”<sup>9</sup>

This claim is apparently based on several studies done<sup>10</sup> over the past two years for FirstEnergy Solutions and a group called “Nuclear Matters” by The Brattle Group, a consulting firm.

The Brattle Group’s argument is based on the misleading assumption that if the nuclear plants close, the market prices for energy definitely will be set by more expensive forms of electricity generation. This does not present an accurate picture of how energy markets function.

In reality, retirement of Davis-Besse and Perry would not have a direct impact on energy market prices. In the PJM regional electricity market, system energy prices are set according to the prices of “marginal units”—the generation resources that would satisfy the *next* increment of energy needed if demand were to increase.

**In the real-time energy market, nuclear units were the price-setting marginal units only 1.04% of the time in 2018.**<sup>11</sup> That same year, efficient natural gas-fired combined cycle plants were the marginal units over 53% of the time.<sup>12</sup> Thus, even if Davis Besse and Perry are retired, it is unlikely to have a significant impact because market prices in many hours will still be set by low-cost natural gas-fired combined cycle units.

in his April 17th presentation to the House Energy and Natural Resources Subcommittee on Energy Generation, entitled *Impacts of a Nuclear Shutdown*.<sup>13</sup> Dr. Dean Murphy of the Brattle Group included graphs that made it seem like even a small change in supply in PJM would lead to a major increase in market prices. His presentation showed a steep supply curve, as seen below.

---

<sup>8</sup> Remarks of Dave Griffing, Vice President, Government Affairs, FirstEnergy Solutions before the Energy and Natural Resources Committee Sub-Committee on Energy Generation, Ohio House of Representatives. April 17, 2019.

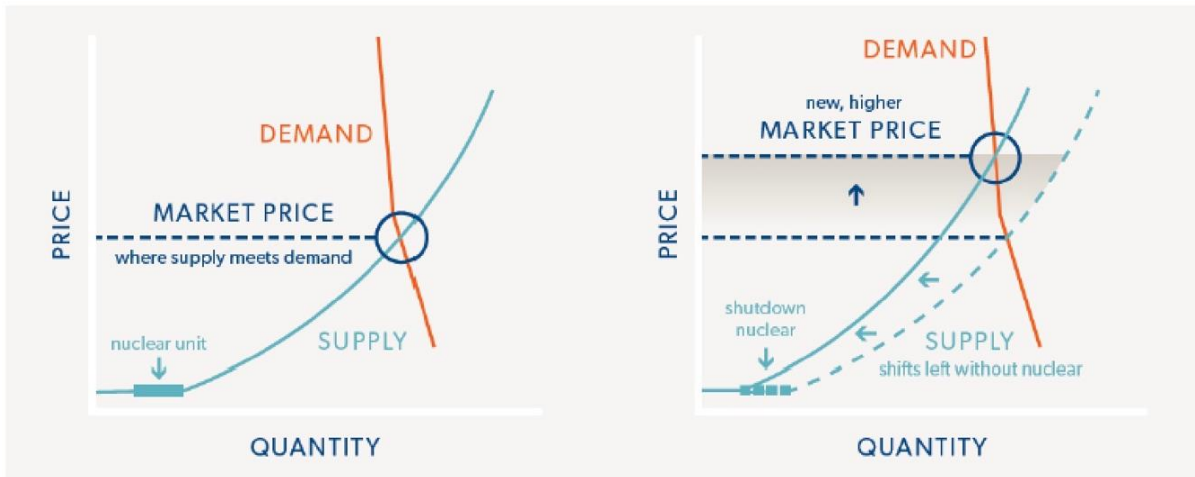
<sup>9</sup> PJM Market Impact of Allowing Nuclear Plants to Shut Down. Ohio Clean Energy Jobs Alliance.

<sup>10</sup> Mark Berkman and Dean Murphy, The Brattle Group. *Ohio Nuclear Power Plants’ Contribution to the State Economy*. April 2017; Dean Murphy and Mark Berkman, The Brattle Group. *Impacts of Announced Nuclear Retirements in Ohio and Pennsylvania*. April 2018.

<sup>11</sup> 2018 State of the Market Report for PJM, Volume 2, at page 119.

<sup>12</sup> Ibid.

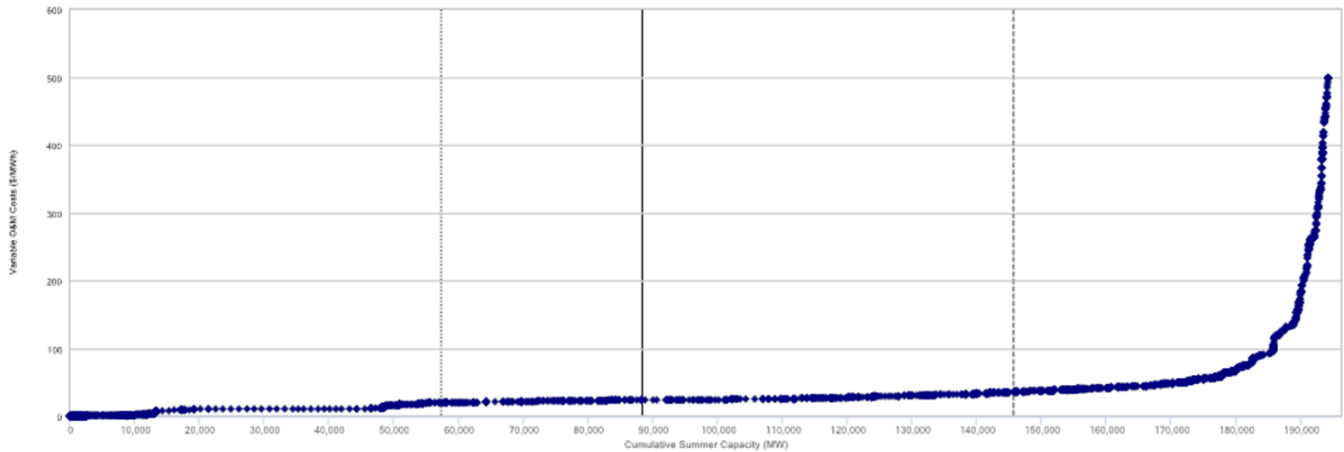
<sup>13</sup> Dean Murphy, The Brattle Group. *Impacts of a Nuclear Shutdown*. April 2019.



In reality, in most hours of a year the supply curve in PJM is much flatter, only becoming steeper in those few hours with extremely high system loads, as is shown in the chart below.

**Generation Supply Curve- PJM Interconnection: 2017**

The vertical axis represents Variable O&M Costs (\$/MWh). The horizontal axis represents Cumulative Summer Capacity (MW).



..... Min Load; — Average Load; --- Peak Load

Capacity Adjustments (%): Combined Cycle - 100%, Combustion Turbine - 100%, Geothermal - 100%, Hydraulic Turbine - 100%, Internal Combustion - 100%, Nuclear -100%, Other - 100%, Pump Storage - 100%, Solar - 100%, Steam Turbine - 100%, Wind Turbine - 100%, Announced - 100%, Early Development - 100%, Advanced Development - 100%, Under Construction - 100%.

Source: S&P Global Market Intelligence.

Consequently, the retirement of the two nuclear plants likely would only have a noticeable impact on energy market prices **in those few hours when demand is highest.**

---

In contrast, the provisions of House Bill 6 that would cut back on energy efficiency and renewable energy in Ohio would have the effect of driving up prices, displacing the point where the supply and demand curves meet.

**Investments in renewables and energy efficiency actually reduce energy market prices by displacing more expensive generation from gas-fired and coal-fired generators.** For example, in its 2017-2019 Energy Efficiency Plan, FirstEnergy noted that while efficiency programs cost \$323 million, they would generate \$988 million of customer savings over the course of the plan.<sup>14</sup> AEP similarly calculated in its 2017-2019 plan that at a cost of \$284 million, energy efficiency measures would save customers \$2.2 billion over the lives of the measures.<sup>15</sup>

If Ohio is serious about providing low cost sources of clean energy, it would make more economic sense to invest in solar energy than to subsidize aging nuclear plants.

For example, NIPSCO in northern Indiana, is planning to purchase solar resources at an average price of about \$35.70 per megawatt hour. This suggests that spending the \$306 million that would be collected each year for the Clean Air Program Fund on power purchase agreements with solar resources could avoid the emission of approximately 9 million tons of carbon dioxide by displacing generation from existing coal-fired generators. This would offset all of the increased carbon dioxide emissions that the proponents of HB 6 claim would result from the retirement of Davis-Besse and Perry. Spending on energy efficiency would provide similar benefits in displacing electricity from carbon dioxide emitting generators.

### **3. Rather than charging all Ohio consumers more than \$300 million per year to keep the nuclear and coal plants open, Ohio should allocate resources to support the tax bases of all the school districts, communities and workforces affected by these and other plant closures.**

Ohio has experienced more coal plant closings than any other state, yet the state government has taken virtually no action to support the communities whose tax bases have been severely depleted or to workers who have lost their jobs.

And some of the coal plants that continue to operate have been dramatically devalued as they age and become less competitive in the market.

This point was made clear during testimony<sup>16</sup> by Jude Myers, superintendent of the

---

<sup>14</sup> Testimony of Robert Kelter, Senior Attorney, Environmental Law and Policy Center before the House Energy Generation Subcommittee. April 23, 2019.

<sup>15</sup> Ibid.

<sup>16</sup> Testimony of Jude Meyers, Superintendent, Gallia County Local Schools before the Committee on Energy and Natural Resources.



---

Gallia County Local Schools, in opposition to HB 6:

We just lost \$1,000,000 in general fund (\$1.5 million total) revenue because our power plant devalued (\$45,000,000). We are making massive cuts to address this loss in funding. We are not receiving any additional funds or legislation to stabilize the tax base and generate the revenue lost. The proposed legislation in HB 6 will provide relief to the two nuclear power plant districts and will keep them whole. This legislation will accelerate the devaluation of the coal fired plants in Ohio thus continuing to create devastating losses to education in our district. What is your plan to help us and districts similar to ours? How will I relay this message from you today back to my taxpayers, board members, students, and families, as to why our kids are not as important as those in the two nuclear power districts?

In fact, even the communities of Oak Harbor and Perry, homes to the two FirstEnergy Solutions nuclear plants, have already experienced significant cuts to their tax revenues because FirstEnergy devalued the nuclear plants by approximately 75% in 2016.

The only action the Ohio legislature has taken thus far to support the budgets for communities where energy generation plants close is passage of a provision in the 2017-8 state budget<sup>17</sup> that was designed to provide some substitute funding for Oak Harbor when Davis Besse was devalued.

Ohio should follow the lead of New York and other states to provide support for the local tax bases and workforces harmed when energy generation plants close down. A coalition of labor and community organizations in western New York, when faced with the closure of NRG's Huntley Power Station, came together to develop a plan for transition. Labor, businesses, community leaders and elected representatives pushed successfully for the New York state legislature to enact a law<sup>18</sup> in 2016, which provides several years of replacement property taxes to affected communities. In Washington state, a legal settlement on a utility commission proceeding resulted in Puget Sound Energy, the largest co-owner of the Colstrip Power Plant in Montana, paying \$10 million to the Colstrip community in preparation for the planned retirement of two generating units at the plant.

The state should also embark on a serious program to support workers who lose their jobs when coal and nuclear plants close, and should push for thorough and timely clean up and decommissioning of these facilities, with hiring priorities for people currently employed at the plants.

---

<sup>17</sup> The affected schools should receive additional state support under provisions that were included in [Ohio's fiscal year 2017-18 budget](#).

<sup>18</sup> New York State Urban Development Corporation. [Electric Generation Facility Cessation Mitigation Program. Program Guidelines](#), Adopted June 2016.

---

## 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](http://www.ieefa.org)

## About the Author

### David Schlissel

David Schlissel, Director of Resource Planning Analysis for IEEFA, has been a regulatory attorney and 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 in state and federal court proceedings concerning electric utilities. His clients have included 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.

This report is for information and educational purposes only. The Institute for Energy Economics and Financial Analysis ("IEEFA") does not provide tax, legal, investment or accounting advice. This report is not intended to provide, and should not be relied on for, tax, legal, investment or accounting advice. Nothing in this report is intended as investment advice, as an offer or solicitation of an offer to buy or sell, or as a recommendation, endorsement, or sponsorship of any security, company, or fund. IEEFA is not responsible for any investment decision made by you. You are responsible for your own investment research and investment decisions. This report is not meant as a general guide to investing, nor as a source of any specific investment recommendation. Unless attributed to others, any opinions expressed are our current opinions only. Certain information presented may have been provided by third parties. IEEFA believes that such third-party information is reliable, and has checked public records to verify it wherever possible, but does not guarantee its accuracy, timeliness or completeness; and it is subject to change without notice.