
MEMORANDUM

Date: November 12, 2020
To: The Ohio Manufacturers' Association
From: John Seryak, PE and Peter Worley
RE: Ohio's Costly – and Worsening – OVEC Situation

House Bill 6 (HB 6) created a statewide customer subsidy for the Ohio Valley Electric Corporation (OVEC), which owns two 1950s-era coal power plants, Kyger Creek in Ohio and Clifty Creek in Indiana. The OVEC power plants previously realized PUCO-approved subsidies for three Ohio electric distribution utilities with ownership interests in OVEC. The OVEC coal plants have been selling electricity for less than it costs to generate it since 2012, and Ohioans had already been forced to pay about \$159 million in subsidies to the plants through 2019. An immediate halt to OVEC subsidies would lower customer costs, reduce carbon dioxide emissions, and bolster market competition.

OVEC almost certainly will remain uneconomical through 2030, the term of its HB 6 subsidy, costing Ohioans an estimated \$700 million. And yet this is not the end: OVEC has a power agreement and debt through 2040. OVEC's owners, including the three Ohio electric distribution utilities, have repeatedly sought subsidies to cover OVEC's losses in Ohio – and if asked to foot the bill again at these rates, Ohioans would be on the hook for another possible \$700 million from 2031-2040. Policymakers should anticipate that the OVEC owners will seek additional subsidies in 2030. The potential cost to Ohio ratepayers of this government-approved support that could span

Expensive Subsidies, Poor Performance

- OVEC sells power for less than it costs it to generate – and has since 2012.
- State subsidies could amount to \$1.5 billion in charges to Ohio's consumers through 2040.
- \$159 million in customer-paid subsidies have been collected through 2019 under Ohio's previous subsidy scheme.
- ~\$700 million in potential Ohio customer-paid subsidies due to HB 6 are projected to be paid through 2030.
- Another ~\$700 million in future subsidies are potentially necessary to maintain OVEC operations from 2031 through 2040.
- OVEC has had a 39% reduction in power output since 2010.
- OVEC has reduced its employment 20% since 2015.
- OVEC's carbon emissions are equivalent to two nuclear power plants' worth of emissions offset.
- PUCO audit ineffectual; OVEC ignores audit findings, running at a financial loss and forgoing market revenue, while continuing to receive cost recovery and profit.



several decades could be around \$1.5 billion, but possibly more.

These customer subsidies have done nothing to improve OVEC's performance, which remains poor, and runs counter to Ohio's energy policy aims. OVEC sells electricity for less than it costs to generate it. OVEC estimates its energy output this year will be 39% less than in 2010. Its carbon dioxide emissions offset that of two nuclear plants' worth of emission-less electricity. OVEC employment is down 20% since 2015. And OVEC has failed to make improvements noted in a PUCO audit, with no consequence.

HB 6's statewide treatment of OVEC was to shift subsidies from certain customers to others, while increasing the overall total cost of OVEC subsidies to Ohioans over time, as compared to previous PUCO-approved OVEC subsidies. This policy framework of "which bad subsidy design is best?" is a false choice and worsened the overall situation. The real question before policymakers should be how to prevent Ohio customers from being forced to subsidize old, uneconomical power plants, one of which isn't even located in Ohio. Of critical importance to policymakers should be whether, absent subsidies, the OVEC owners will make decisions about OVEC that would be in their own financial best interest.

In the remainder of this memorandum, we demonstrate OVEC's chronic underperformance, the costs to Ohioans thus far, potential costs going forward, and how these subsidies have had no positive effect as OVEC's power output which continues to decline.

Ohioans Subsidized \$159 Million of OVEC's \$1.3 Billion Loss from 2012-2019

OVEC's two coal plants are uneconomical. From 2012 to 2019, their average weighted price of electricity was approximately 34% more expensive than the market price. The OVEC average price was approximately \$59/MWh,¹ while the average competitive market price in Ohio was \$44/MWh.² This is about a \$1.3 billion total loss for OVEC. Ohio's electric distribution utilities own about 38%

¹ Production weighted average. OVEC Annual Report Documents under Section "Power Costs." For example, 2019 Annual Report: <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>

² The OVEC and PJM prices include Energy and Capacity. Energy price is the PJM RTO load-weighted LMP price. Capacity price is the PJM RTO Base Residual Auction price (assuming OVEC had all of its 2,350 MW of capacity clear.) Prices do not include Ancillary Services because OVEC does not attempt to sell them into PJM currently.

of OVEC,³ and thus their pro-rated share of this loss is about \$493 million.⁴ Ohio customers have covered approximately \$159 million of those losses through 2019.⁵

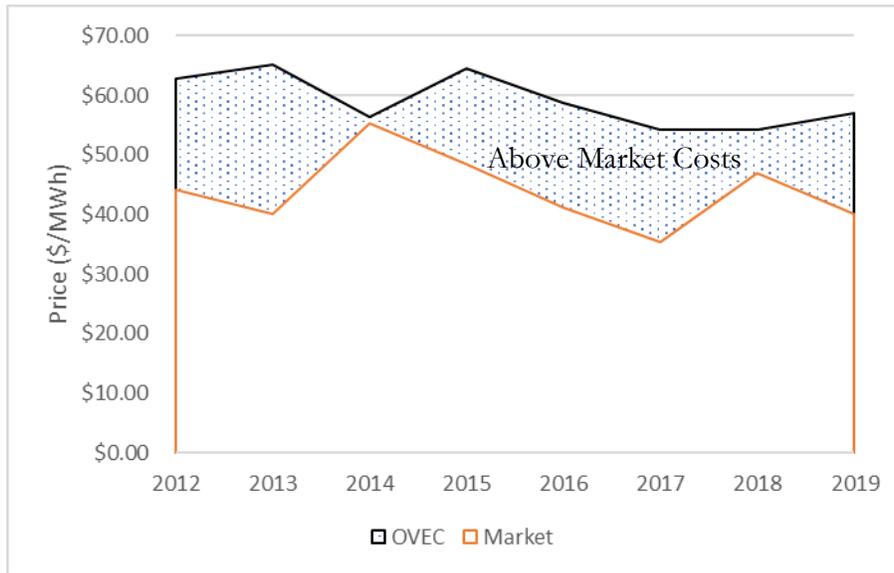


Figure 1. OVEC Price of Electricity vs. PJM Wholesale Market Price of Electricity

³ Dayton Power and Light Co. (DP&L) owns 4.9%, Duke Energy Ohio (Duke) owns 9%, Energy Harbor Corp. owns 4.85%, and Ohio Power Co. (AEP Ohio) owns 19.93%. <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>

⁴ Each year the difference in OVEC price and market price was multiplied by OVEC's production. The years were summed and then multiplied by 38%, which is how much Ohio's customers were responsible for prior to HB 6. Prior to HB 6, Ohio customers were responsible for their utility's percentage share in the OVEC power participation benefits and requirements: AEP Ohio (a.k.a Ohio Power) has 19.93%, DP&L has 4.90%, and Duke has 9.00%. These percentages come from OVEC's 2019 Annual Report (page 2 of PDF). We assume these percentages were not considerably different in previous years. <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>

⁵ \$113.8 million through AEP Ohio's Rider PPA from 2017-2019; \$16.4 million through DP&L's Reconciliation Rider from 2017-2019; \$28.3 million through Duke's Rider PSR.

Year	PJM Wholesale		
	OVEC Price (\$/MWh)	Market Price (\$/MWh)	Price Difference (OVEC minus PJM)
2012	\$62.87	\$44.25	\$18.62
2013	\$65.18	\$40.00	\$25.18
2014	\$56.38	\$55.23	\$1.15
2015	\$64.40	\$48.50	\$15.90
2016	\$58.66	\$41.14	\$17.52
2017	\$54.27	\$35.33	\$18.94
2018	\$54.29	\$46.84	\$7.45
2019	\$57.04	\$40.11	\$16.93
8-yr weighted average	\$58.84	\$43.87	\$14.97

Table 1. OVEC Price of Electricity vs. PJM Wholesale Market Price of Electricity

The combined production of the two OVEC plants has decreased 23% over the past decade from 14,600,000 MWh in 2010 to 11,200,000 MWh in 2019.⁶ OVEC expects its production to decrease further in 2020 down to 9,000,000 MWh,⁷ which amounts to a 39% less electricity generated than in 2010.

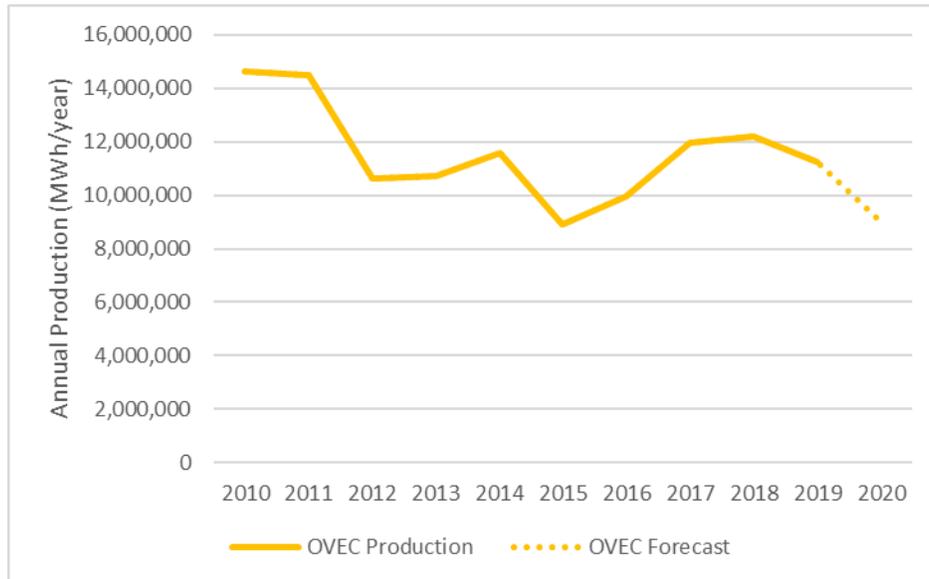


Figure 2. OVEC Electricity Production

⁶ Form EIA-923: <https://www.eia.gov/electricity/data/eia923/>

⁷ OVEC 2019 Annual Report; page 4 of PDF: <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>



Year	Annual Production (MWh/year)		
	Clifty Creek	Kyger Creek	OVEC Production
2010	7,898,624	6,740,162	14,638,786
2011	7,948,267	6,514,656	14,462,923
2012	5,945,617	4,688,606	10,634,223
2013	5,610,367	5,129,185	10,739,552
2014	6,062,463	5,493,736	11,556,199
2015	5,225,154	3,681,044	8,906,198
2016	5,030,848	4,934,172	9,965,020
2017	6,037,635	5,899,969	11,937,604
2018	6,369,305	5,801,085	12,170,390
2019	5,722,979	5,515,010	11,237,989
2020			9,000,000

Table 2. OVEC Electricity Production

The company has reduced the number of employees by 20% from 738 in 2015 down to 591 in 2019.⁸ Lastly, OVEC is a high carbon emitting plant, emitting on average 12 million tons of carbon dioxide per year, which is roughly equivalent to the amount of carbon dioxide savings that the Davis Besse and Perry nuclear plants could claim as compared to PJM’s marginal electricity emissions averages.⁹ To put in context, the electricity market in Ohio over this period emitted approximately 30% less per MWh than OVEC.¹⁰

Ohio Policy Mandates Ohioans to Subsidize OVEC for the Next Decade, ~\$700 Million Cost at Current Rates

Prior to 2019, the PUCO authorized AEP Ohio, Duke, and DP&L to add charges to customers’ bills to subsidize the OVEC plants.¹¹ The PUCO permitted the utilities not only to charge customers for prudently incurred costs at the plants, but also to earn a profit no matter how well the plants operated.¹² The PUCO authorized DP&L to charge customers through 2023, AEP Ohio though

⁸ OVEC 2019 Annual Report, page 45 of PDF: <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>

⁹ Form EIA-923, OVEC plant average emissions of 12,225,169 tons CO₂/year; Davis Besse and Perry nuclear plant average generation of 12,798,134 MWh/year x 0.73 tons CO₂/MWh (PJM marginal off-peak emissions rate) = 12,798,134 tons CO₂/year

¹⁰ From PJM Reports, using Table 2 - Marginal Off-Peak Emissions
<https://www.pjm.com/~media/library/reports-notice/special-reports/20160318-2015-emissions-report.ashx>
<https://www.pjm.com/~media/library/reports-notice/special-reports/2019/2019-emissions-report.ashx?la=en>

¹¹ They were authorized in utility Electric Security Plans (ESP). The corresponding PUCO cases were for AEP Ohio 16-1652-EL-SSO; for DP&L 16-395-EL-SSO; for Duke 17-1263-EL-SSO

¹² FERC Form 1 (page 30 of PDF) “The Companies have continued and expect to continue to operate pursuant to the cost-plus rate of return recovery provisions at least to June 30, 2040”



2024, and Duke through 2025. HB 6 created a new subsidy, which supplanted the previously approved PUCO subsidies. HB 6 expanded the OVEC subsidy to include recovery of losses for Energy Harbor (in addition to AEP Ohio, Duke, and DP&L), extended the subsidy through 2030, and recovered the cost of the subsidy from all ratepayers in the state.

DP&L and Duke estimated they would each need approximately \$10.6 million to cover their losses in OVEC for the year of 2019.¹³ AEP Ohio calculated it would need \$49.1 million.¹⁴ Together, the costs amount to \$70.3 million. If OVEC continues to operate like it did in 2019 compared to the market, Ohio ratepayers would end up paying \$703 million to subsidize OVEC through 2030.

The HB 6 subsidy amount fluctuates yearly based on OVEC's operational costs and wholesale electric market prices. In a study, the Institute for Energy Economics and Financial Analysis (IEEFA) forecasted that OVEC's operational costs would continue to rise, while market prices would remain low, resulting in \$110 million per year in subsidies or \$1.1 billion over the decade.¹⁵ Ohio's Legislative Service Commission has also estimated \$703 million in costs charged to customers. Subsequently, the \$703 million estimate could be conservative because other factors can affect OVEC's profitability, including if OVEC fails to clear PJM's capacity auction, if OVEC continues to lose efficiency as it ages (OVEC is over 65 years old), and if utilities increase capital investment in the OVEC plants.

OVEC Has Outstanding Debt through 2040

HB 6 is silent on OVEC's future after 2030. Still, AEP Ohio, DP&L, and Duke all are part of an inter-company power agreement with OVEC through 2040. And the agreement permits OVEC to sell electricity for less than what it costs to generate. Furthermore, OVEC has \$570 million of debt due between 2031-2040.¹⁶ If the trend in Ohio policy to cover the costs of OVEC's uncompetitive

¹³ Based on DP&L's "Reconciliation Rider"; PUCO Case 18-1379-EL-RDR; DP&L projected their OVEC net-costs on 9/2018 for 10/2018-11/2019; <https://dis.puc.state.oh.us/TiffToPDF/A1001001A18I14B61728G01403.pdf> (page 4 of PDF)

Based on Duke's "Price Stabilization Rider (Rider PSR)"; PUCO Case 19-447-EL-RDR; Duke projected their OVEC net-costs on 2/2019 for 1/2019-12/2019; <https://dis.puc.state.oh.us/TiffToPDF/A1001001A19B28B45404G05311.pdf> (page 3 of PDF)

¹⁴ Based on AEP Ohio's "Power Purchase Agreement (PPA) Rider"; PUCO Case 18-1392-EL-RDR; AEP Ohio calculated their actual OVEC net-costs for 1/2019-12/2019. See Figure 16 in London Economic International's audit of the rider. <http://dis.puc.state.oh.us/TiffToPDF/A1001001A20I17B31207C02236.pdf> (page 36 of PDF)

¹⁵ IEEFA 2017 Report <https://ieefa.org/wp-content/uploads/2017/06/Dont-Bail-Out-Retire-OVEC-Coal-Plants.pdf> (page 11 of PDF)

¹⁶ OVEC 2019 Annual Report; page 18 of PDF: <https://www.ovec.com/FinancialStatements/AnnualReport-2019-Signed.pdf>



business continues, Ohioans could be charged for \$220 million of the debt as well as the continued losses in the power markets.¹⁷

If Ohio’s distribution utilities continue to lose \$70.3 million per year on OVEC in the 2031-2040 timeframe, that is an additional \$703 million that Ohio’s ratepayers will likely be asked to subsidize.

PUCO Audit Findings Have Not Affected OVEC Business Practices

In an audit of the AEP Ohio PPA Rider, London Economics International identified several business decisions by OVEC that were questionable, and possibly could be deemed imprudent. This audit appears to be ineffectual – the PUCO has not reduced payments to AEP Ohio for possibly imprudent decisions regarding the OVEC operations, has not compelled OVEC to operate differently, and indeed OVEC has not changed important business practices that could lower costs to customers.

First, as explained previously, OVEC sells electricity into the market at prices that are less than what it costs to generate the power, accumulating losses. A PUCO-contracted audit of OVEC highlighted this issue, stating that OVEC should “carefully consider when and whether the must-run offer strategy is optimal, as it appears that in some months, it may result in negative energy earnings for the plants.”¹⁸ However, OVEC did not adopt this operational recommendation.

Second, OVEC delayed exploring the ability to earn additional market revenue through PJM’s Ancillary Services market, despite the previous PUCO audit recommending it.¹⁹ Again, this foregone revenue was not deducted from the costs that Ohioans are forced to pay to the utilities for OVEC.

Third, OVEC makes capital investments that may not be economically justified given the revenues it receives from the electricity market. In 2011-2013, OVEC made capital investments, creating debt, in a new scrubber system that cost \$1,000,000,000.²⁰ This, among other investments, the PUCO 2020 audit questioned: “... this does not imply that the level of capital spending is justified by the revenues earned in PJM. Most coal plants of similar size ... in PJM have either announced or are planning for deactivation due to economic issues and aging problems and are therefore having limited capital investment.”²¹

¹⁷ Relevant Ohio utilities are responsible for 38% of the OVEC Power Participation Benefits and Requirements. OVEC 2019 Annual Report (page 2 of PDF) AEP Ohio (a.k.a Ohio Power) has 19.93%. Dayton Power and Light has 4.90%. Duke Energy Ohio has 9.00%. Energy Harbor has 4.85%.

¹⁸ London Economic International’s audit of the AEP Ohio PPA Rider., Case No. 18-1759-EL-RDR, Page 53 of PDF.

¹⁹ London Economic International’s audit of the AEP Ohio PPA Rider, Case No. 18-1759-EL-RDR, Page 53 of PDF.

²⁰ IEEFA 2017 Report
<https://ieefa.org/wp-content/uploads/2017/06/Dont-Bail-Out-Retire-OVEC-Coal-Plants.pdf> (page 3 of PDF)

²¹ London Economic International’s audit of the AEP Ohio PPA Rider, Case No. 18-1759-EL-RDR (page 97 of PDF)