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Buying Power From AMP's Prairie State and Combined Hydro Project Has Been a Financial Disaster for Cleveland Public Power and Its Ratepayers

Long-Term "Take-or-Pay" Contracts Place Heavy Burden on Customers

Executive Summary

Cleveland Public Power customers are paying a high price for electricity provided through long-term contracts with American Municipal Power (AMP), a factor that has helped to drive CPP's rates up over the past several years.

Cleveland Public Power is the largest member of American Municipal Power (AMP), an organization made up of 134 municipal utilities and one joint action agency in nine states. AMP is by far the largest supplier of electricity to CPP. According to an analysis of CPP by New Gen Strategies,[1] CPP paid AMP $97 million for its power supply in 2019, amounting to approximately 70% of CPP's total power supply expenses of $137 million.

While AMP provides CPP electricity through a mix of contracts, two major power supply contracts stand out as being significantly more expensive than market prices: The Prairie State coal-fired power plant in Illinois and the AMP Combined Hydro Project in the Ohio River. The price of electricity from both of these plants is significantly higher than what AMP promised to Cleveland City Council when the city signed the contracts in 2007. Both of these contracts are 50-year, take-or-pay contracts.

IEEFA estimates that CPP paid at least $106 million more for power from these two projects (the Prairie State and the hydro plants) between 2012 and 2019 than it would have paid to purchase the same amounts of capacity and energy in the wholesale PJM (regional) markets. CPP has a 24.88 MW share of the Prairie State plant and a 35 MW share of the combined hydro plants.

[1] WKYC. Cleveland Public Power "situation not sustainable" without rate changes and other fixes, consultant's briefing document says: Mark Naymik Reports. August 14, 2020.

Actual Power Costs Are Much Higher Than Promised Power Costs, at Time When Market Prices Are Declining

For many years, AMP served as a broker for power supply deals for its municipal utility members and did not own any generation assets. That changed when AMP decided in the mid-2000s to start building its own power plants, financed by multi-billion bond deals backed by long-term "take-or-pay" contracts with its members.

In 2007, AMP presented its members, including Cleveland, with proposals to enter into contracts for power from three major proposed generating projects. Two of these—the Prairie State Energy Campus in Southern Illinois, owned by a consortium of utilities, and AMPGS, in Meigs County, Ohio, owned by AMP— were large coal-fired power plants. The other project was a set of three run-of-the-river hydro projects along the Ohio River, known as the Combined Hydro Project.[2]

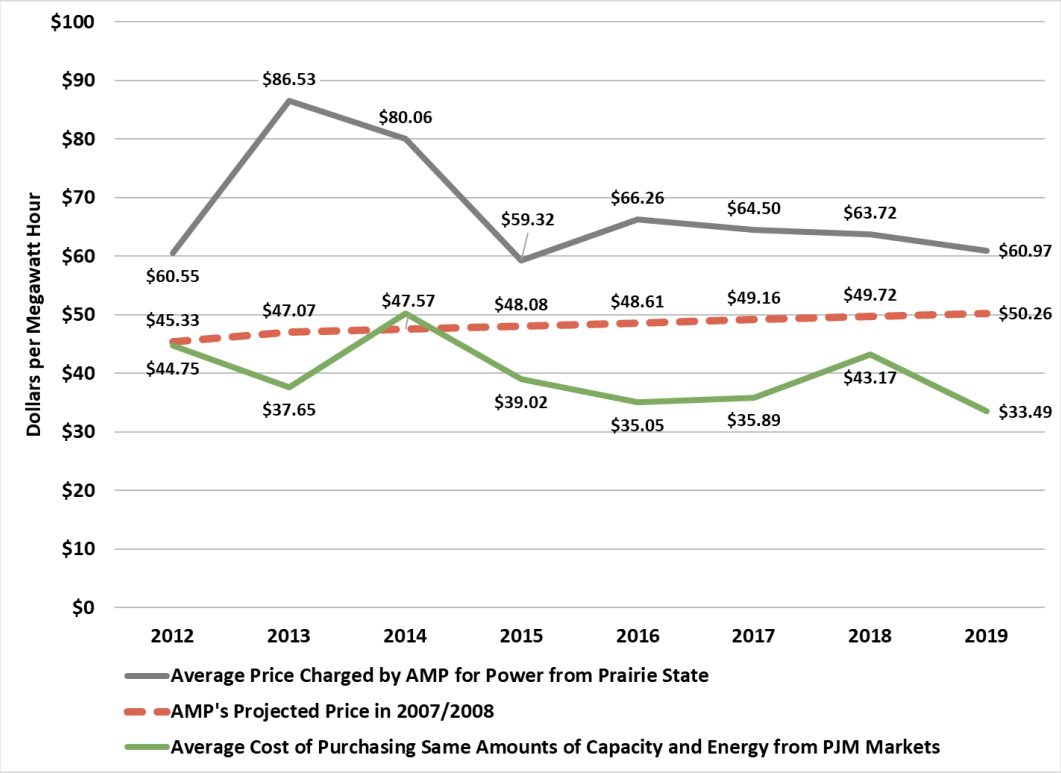
AMP hired an engineering firm, R.W. Beck (now part of Leidos) to produce feasibility studies for each of the projects. The studies were summarized in AMP's presentations to Cleveland City Council in 2007.[3] Each of the studies projected that the cost of power from each of these projects would be low, stable, and significantly cheaper than buying power in the PJM competitive wholesale markets.

The AMPGS project was cancelled in 2009. However, the other two projects (Prairie State and the Combined Hydro Project), were built and went online respectively in 2012 and 2016/2017.

The power costs from both of these projects have been far more expensive than AMP's 2007 projections or the cost for Cleveland Public Power to buy the same amounts of capacity and energy in the PJM markets.[4] This can be seen in Figures 1 and 2.

[2] The three projects that make up the Combined Hydro Projects are Smithland, Cannelton, and Willow Island.
[3] Cleveland Public Power's Supply Options and AMP Ohio Generation Projects Presentation. October 2007.
[4] IEEFA has examined invoices from AMP to several of its member cities during these time periods (AMP invoices to Cleveland for this time period have not been made public). From these invoices, IEEFA can determine how much AMP is charging its members per megawatt hour (MWh) under various power supply contracts. Although the cities receive different amounts of power, the MWh cost is mainly the same for each city, allowing for IEEFA to make costs projections.

Figure 1: The Projected vs. the Actual Cost of Power from AMP's Prairie State Energy Campus

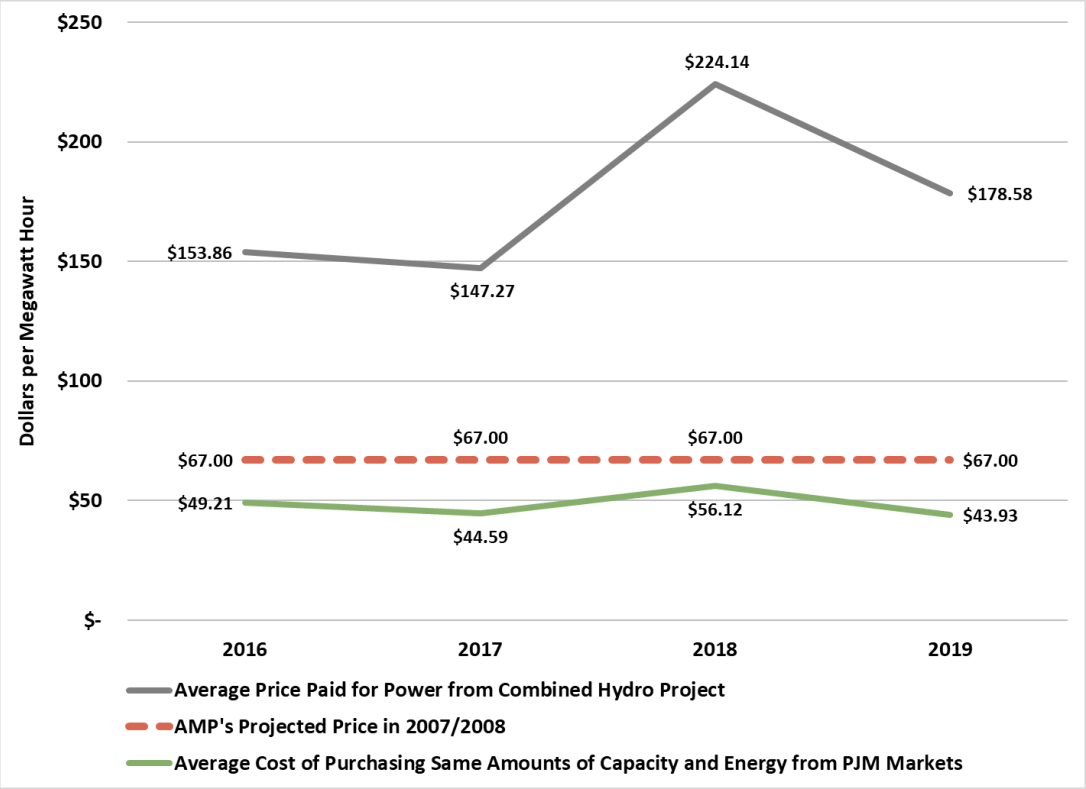


Source: AMP presentation to Cleveland City Council, 2007; AMP invoices to various cities in Ohio.

Overall, IEEFA estimates that the average cost charged by AMP to Cleveland for power from Prairie State between 2012 and 2019 was $67.50 per megawatt hour (MWh), which is 40% higher than AMP claimed, and 90% higher than it would have cost Cleveland to purchase the same capacity and energy from the PJM markets.

The power from the Combined Hydro Project that Cleveland buys from AMP has been even more expensive.

Figure 2: The Projected vs. the Actual Cost of Power from AMP's Combined Hydro Project



Source: AMP presentation to Cleveland City Council, 2007; AMP invoices to various cities in Ohio.

Thus, IEEFA estimates that Cleveland Public Power has paid AMP an average of $178.60 for each MWh of power it has purchased from the Combined Hydro Project since it went into service starting in 2016. This was an astounding 167% more than AMP's projected cost of power from the project and 269% more than it would have cost to buy the same amounts of capacity and energy from the PJM markets.

IEEFA estimates that Cleveland Public Power (and therefore, its ratepayers) has paid AMP over $106 million more for power from these two projects (Prairie State and the hydro plants) than it would have had to pay to buy the same amounts of capacity and energy in the wholesale PJM markets.

There is very little reason to expect that the cost of the power from the two projects will become significantly less onerous in coming years, as future energy market prices are expected to remain low (at about or slightly above the levels shown in Figures 1 and 2 above). There also is little reason to expect the costs from Prairie State and the hydro plants will decline to anywhere near or even in the neighbourhood of PJM market prices. Thus, the power from Prairie State will remain very expensive even if its cost remains around $60 per MWh, the price that AMP billed for power from the plant in 2019. Similarly, the power from the Combined Hydro Project will remain extremely expensive even if it drops below the $178.58

per MWh that AMP billed in 2019.[5]

There are three reasons for the higher-than-projected cost of power from Prairie State and the Combined Hydro Project.

First, each cost far more to build than had been originally estimated. The cost of the 1600 MW Prairie State plant increased by $1 billion, or approximately 20%, over the original $4 billion estimate. The cost of the 207.8 MW Combined Hydro Project soared from an estimated $4,360 per kilowatt (kW) in 2007 to an actual cost of more than $10,800/kW. This has been meant that the annual interest charges on the debt that AMP had to issue to pay for their shares of these plants has increased dramatically over the 2007 projections.

Second, the projects have not produced as much power as had been projected. AMP estimated that between 2012 and 2019, Prairie State would produce 11.8 million MWh annually. However, the plant produced only an average of 9.6 million MWh. This has meant that the plant's fixed costs, such as interest charges and fixed operating & maintenance costs, have been spread over fewer units of output, thereby raising the cost of producing each MWh of electricity. Similarly, the Combined Hydro Project has failed to produce its expected generation.

Finally, completion of Prairie State was delayed between six and 12 months. The completion of the three plants in the Combined Hydro Project was delayed by two to three years or longer. The Cannelton project's anticipated commercial operation date was in the spring and summer of 2013, but the plant's units did not go online until February, March and June 2016. The projected commercial operation date for the Willow Island hydro plant was the fall of 2013, but it did not go online until January and February 2016. Finally, the anticipated commercial operation dates for the units at the Smithland hydro plant were the winter of 2013/2014 and the spring of 2014, but they did not come online until July and August 2017.

IEEFA recommends Cleveland City Council members ask these questions:

1. Why did the cost of building Prairie State increase by $1 billion?
2. Who was responsible for this increase?
3. Did Cleveland consider initiating legal action against AMP or construction firm Bechtel for its share of this increase? If not, why not?
4. Why did the cost of the Combined Hydro Project increase so dramatically?
5. Why were the individual hydro units in the Combined Hydro Project

[5] For example, S&P Global Ratings has noted that the projected power cost for the Combined Hydro Project would be about $149 per MWh even if it achieved its expected 55%-60% annual capacity factors, which it failed to do through the end of 2019. *S&P Global Ratings, American Municipal Power, Inc., Ohio, Wholesale Electric – July 3, 2018.*

delayed?

6. Why have the costs of power from the Combined Hydro Project been so dramatically higher than AMP promised?

7. Has AMP explained why the cost of building the project went up so much?

8. We understand that some of the delays experienced during the construction of the Combined Hydro Project were due to problems with concrete pouring, the need for unanticipated ground improvements at the Cannelton and Smithland plants, and poorer-than-expected geologic conditions at the Smithland plant. Has AMP given any explanation for why these problems happened and who was responsible?

9. We also understand that AMP filed suit against Voith Hydro, Inc, the supplier of major power equipment, asserting $90 million in damages, and that Voith has asserted a counterclaim of $65 million. Has this legal matter gone to trial or otherwise been resolved? If yes, what happened?

10. We understand that part of the reason for the poorer-than-expected operating performance of some of the units in Combined Hydro Project was due to high water levels from the backing up of water from where the Ohio River joins the Mississippi. Can you please explain what happened? What has been done to resolve this issue in the future? And why didn't AMP anticipate this would be a problem when it was designing and building the project? Has Cleveland considered suing AMP over the generation that was lost? If not, why not?

11. What has AMP promised about the future cost of power from the Combined Hydro Project? Is there any hope that this cost of power will decline in future years?

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

About the Author

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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.

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