



How the High Cost of Power from Prairie State is Affecting Bowling Green Municipal Utilities' Customers Updated as of October 6, 2014

Introduction

This is an updated version of the report that the Institute for Energy Economics and Financial Analysis issued in late June. This update reflects the following changes.

First, as we were reviewing the worksheets for our analysis we found an error and have corrected it. We believe it is important to identify, acknowledge and correct for mistakes.

Second, we also have realized that our original analysis relied entirely on very optimistic assumptions from the January 2014 Sawvel & Associates Report for Prairie State's future operating performance and operating costs. Therefore, we have decided to look at a range of possible future cost impacts – what we have called an Optimistic Case and a Less Optimistic Case. It is important to recognize that the Less Optimistic Case is in no way a 'worst case' scenario as Prairie State's operating performance could be significantly worse and its operating costs could be substantially higher than we have assumed in that case.

Third, we have updated the analysis to reflect actual energy market prices during the first half of 2014 and more recent projections of future energy market prices.

Finally, we have updated the analysis to reflect Prairie State's actual operating performance during the first six months of 2014.

Conclusion

The high cost of power from the Prairie State Energy Campus will cost the City of Bowling Green and its ratepayers approximately \$87 million to \$94 million more between 2012 and 2021 than buying the same energy, capacity and supporting auxiliary services from the PJM markets.

Just in 2012 and 2013, the City of Bowling Green and its ratepayers paid in excess of \$13 million more for Prairie State power than it would have cost to purchase the same amount of power from the wholesale electric markets. Bowling Green Municipal Utilities' total costs of providing power to the City's residential, commercial and industrial customers and Bowling Green University in 2013, on its own, were approximately 27 percent higher than they would have had to have been

if the City had purchased power from the wholesale electric markets instead of Prairie State.¹

Using the forecast 2016 Test Year Revenue Requirements figures in the January 2014 Sawvel & Associates report, it appears that Bowling Green's total cost of providing electricity to its customers will be approximately 17 percent higher in that year than it would be if the City's Municipal Utilities were to purchase the same amount of power from the wholesale electric markets that it believes it will receive from Prairie State. The high cost of purchasing power from Prairie State also can be expected to have a similar impact on Bowling Green's power costs in other years in the period 2014-2021. Moreover, this 17 percent figure reflects an extremely optimistic view of Prairie State's future operating performance and operating costs. Consequently, it is possible that Prairie State will have an even bigger impact on Bowling Green's power costs (and the rates paid by customers) if the plant's operating performance is not as good, and/or its operating costs are not as low, as Sawvel & Associates (and AMP) forecast.

Our analyses also found that:

- The average residential ratepayer will pay an extra \$1,375 to \$1,487 between 2012 and 2021 just due to the high cost of power from Prairie State.
- The average commercial customer will pay \$5,706 to \$6,173 more for power.
- The average industrial customer will pay \$442,000 to \$478,000 more for power.
- Bowling Green State University will pay approximately \$13 million to \$14 million more for power.
- We estimate that Southeastern Container will pay \$11.3 million to \$12.2 million more for power.

On top of these higher power costs, Bowling Green ratepayers also will pay for the City's higher costs for power for city-owned facilities.

It is important to recognize that our analyses do not reflect any costs associated with the nearly eleven million tons of carbon dioxide (CO₂) that Prairie State will emit each year. Even with a very modest cost of \$10 per ton of emitted CO₂, Bowling Green's share of these costs would be in the range of \$2 to \$3 million per year, depending on the plant's actual generation.

¹ This 27 percent figure includes Prairie State costs that were incurred in 2013 but were not collected from ratepayers in that year. Instead, these "levelized" costs will be collected from ratepayers in future years.

Inputs for Analyses

Optimistic Case

Our Optimistic Case analysis relies on the following data and assumptions:

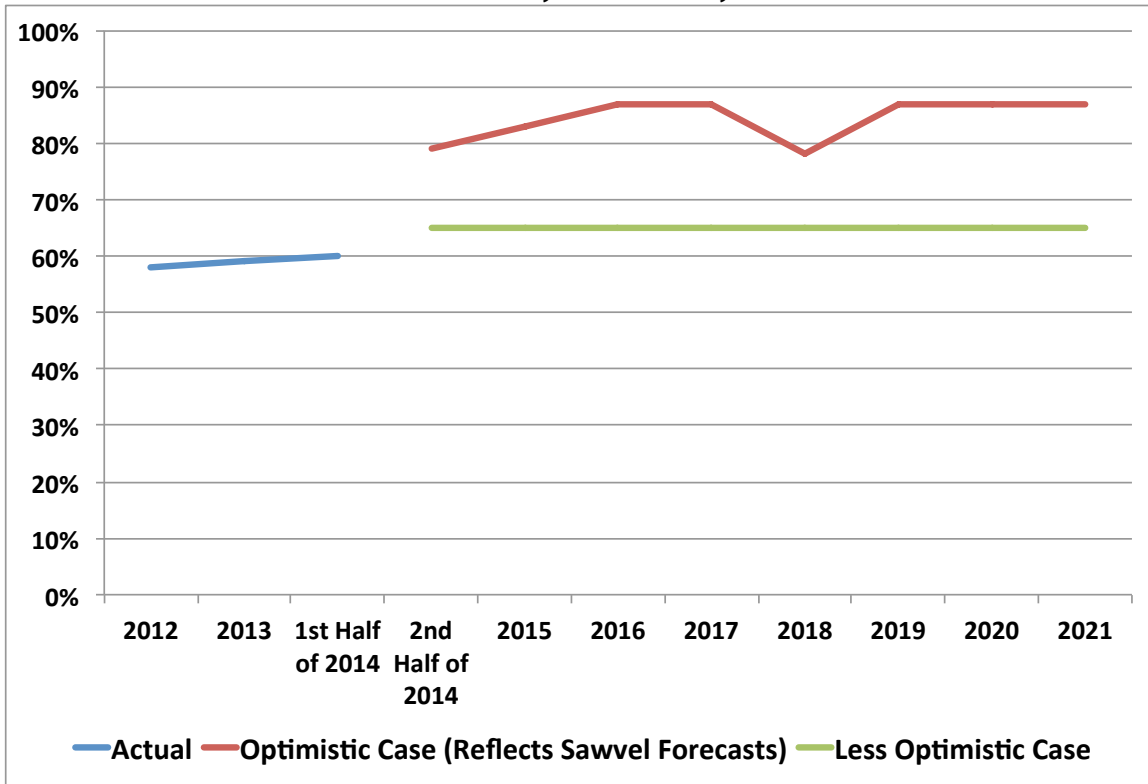
1. Actual Prairie State generation and PJM energy and capacity market prices for 2012, 2013 and the first six months of 2014.
2. Actual BGMU KWh sales by customer class for the years 2011-13.
3. Projected Prairie State operating costs and energy generation for the years 2014-2021 from the January 2014 *Report on Cost of Service and Rate Design* prepared for Bowling Green Municipal Utilities by Sawvel & Associates, Inc. (January 2014 Sawvel & Associates Report for Bowling Green)
4. Energy market price futures as of July 29, 2014.
5. The actual capacity prices resulting of the PJM capacity auctions through May 2018.
6. It is unclear whether the projected Prairie State costs in the January 2014 Sawvel & Associates Report for Bowling Green accurately reflect the average \$25 million in annual capital expenditures that Prairie State Generating Company projects for the next ten years. Therefore, to be conservative, we have not included these costs in our analysis.

The extremely optimistic operating performance that Sawvel & Associates projects for Prairie State beginning in 2014 can be seen from the following figure which compares Sawvel's forecast of Prairie State's future operating performance with the plant's operating performance through June 2014.² As can be seen, Sawvel & Associates (and AMP) have assumed that Prairie State will operate much better (that is, generate much more power) beginning in 2014 than the plant actually has operated through the end of June 2014.³ As also can be seen from Figure 1, our Less Optimistic Case assumes that the plant's future operating performance is more consistent with its actual operating performance between June 2012 and June 2014, although we do allow for some increase in performance in the future.

² Figure 1 shows Prairie State's actual and projected capacity factors. A power plant's capacity factor measures how much it generates in a period (say 6 months or a year) as compared to how much the plant would have generated if it had operated at 100 percent power for all of the hours of the period. A higher capacity factor means better operating performance because the plant has generated more power.

³ Sawvel's January 2014 forecast of Prairie State's future operating performance already has been wrong as the plant only achieved an actual 60 percent capacity factor for the first half of 2014. This was far below the 79 percent capacity factor that Sawvel projected for the entire year.

Figure 1: Prairie State’s Projected Future Operating Performance vs. the Plant’s Actual Performance from June 2012 to June 2014.



Our Optimistic Case analysis also assumes that the price of purchasing capacity from the PJM capacity auction will remain at \$120 per megawatt day beginning in June 2017.

In addition, our analysis reflects that Bowling Green’s ratepayers will have to pay those Prairie State-related costs that have been deferred in 2013 and 2014 as part of AMP’s Prairie State cost levelization plan.

Less Optimistic Case

The ‘Less Optimistic Case’ relies on the same assumptions as the More Optimistic Case except for:

1. A 65 percent annual capacity factor for the generation from Prairie State during the second half of 2014 and the years 2015-2021. This projected capacity factor is consistent with the 58 percent net capacity factor achieved by the plant in 2012, the 59 percent capacity factor it achieved in 2013 and the 60 percent capacity factor it has achieved during the first six months of 2014. In fact, Prairie State’s actual generation is significantly lower than the 79 percent Prairie State capacity factor projected for 2014 and the 84.4 percent average annual capacity factor forecast for the years 2014-2021 in the January 2014 Sawvel & Associates report.

2. Higher plant operating costs that are consistent with the October 2013 *Prairie State Update* from the Prairie State Generating Company.
3. The assumption that MISO capacity costs will not remain as high after 2018.

Discussion

Residential Customers

- Bowling Green Municipal Utilities (BGMU) had 12,684 residential customers in 2013 – with, on average, each residential customer using 650 KWh each month of the year. Residential ratepayers purchased 19% of the power sold by Bowling Green Municipal Utilities (BGMU) during the year.
- Between 2012 and 2021, residential ratepayers, in total, will pay approximately \$17 million to \$19 million in higher power costs due to Prairie State. This is approximately \$1,375 to \$1,487 for an average ratepayer.

Commercial Customers

- BGMU had 1,770 commercial ratepayers in 2013 with, on average, each commercial customer using 2,762 MWh each month of the year. As a class, commercial customer class purchased approximately 11 percent of BGMU KWh sales in 2013.
- Between 2012 and 2021, commercial ratepayers, in total, will pay approximately \$10 million to \$11 million in higher power costs due to Prairie State. This is approximately \$5,700 to \$6,200 for an average commercial customer.

Industrial Customers

- BGMU had 79 industrial customers in 2013. Each industrial customer used, on average, 215,000 KWh each month in the year. As a class, industrial customers purchased approximately 39 percent of the KWh sold by BGMU in 2013.
- Between 2012 and 2021, industrial customers, in total, will pay approximately \$33 million to \$35 million in higher power costs due to Prairie State. The average industrial customer will pay between \$440,000 and \$478,000 more.

Bowling Green State University

- In 2013 Bowling Green State University purchased 72.4 million kilowatt hours of power from the City. This alone represented 15.6 percent of the power sold by BGMU that year.

- Between 2012 and 2021, the University will pay approximately \$13 million to \$14 million in higher power costs due to Prairie State as compared to buying energy from PJM energy and capacity markets.

Southeastern Container

- We have not seen any information on the power purchased from BGMU by Southeastern Container. However, the City has said that it has two large power users, the University and Southeastern Container. The City also has provided its total kilowatt-hour sales to large power purchasers in the years 2011 through 2013. In addition, the University has provided its annual consumption of power in each of these years. Based on this information, we estimate that Southeastern Container used approximately 13 percent of the kilowatt hours sold by BGMU in 2013.
- Consequently, we estimate that Southeastern Container will pay approximately \$11 to \$12 million in higher power costs between 2012 and 2021 solely due to Prairie State.