Exelon Generation Media Statement

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Financial Analysis Shows Conowingo Revenues Insufficient to Fund Additional Sediment Mitigation

Providing clean, reliable and affordable electricity has been the paramount focus for Exelon Generation and the Conowingo Dam for the last 90 years.

In December 2017, The Chesapeake Bay Foundation in conjunction with The Nature Conservancy released a statement and accompanying report by Energy & Environmental Economics (E3) that incorrectly assessed the economic status of the Conowingo Dam. The NorthBridge Group, performed a detailed analysis of the E3 report and found that the E3 conclusions are fundamentally flawed due to a gross over-estimation of the future revenues of the Conowingo Dam.

The E3 report inaccurately inflates future revenues in two ways. First, the report greatly overestimates the dam's capacity revenue, which Conowingo earns for being available as an electricity resource. The dam's capacity revenue going forward is expected to be roughly 80 percent less than the E3 report estimate. Second, the report bases Conowingo's future revenues on 2013 energy prices, which are much higher than today's prices and expected future energy prices. Energy prices in the market available to Conowingo were 30-45 percent lower in 2016 and 2017 versus 2013, yet the E3 report ignored this fact.

When the E3 analysis is run using current information, the analysis demonstrates that Conowingo's revenues are not even high enough to cover costs plus an adequate return, let alone sufficient to fund additional contributions for sediment. Conowingo provides significant benefits to the region, as confirmed by more than 50 studies since 2010.

As a member of the Chesapeake Bay community, Exelon Generation remains steadfast in our commitment to helping identify the most effective ways to address the health of the Bay.

NorthBridge Group Study: Review of E3 Analysis of Conowingo Revenues

December 2017

Prepared at the request of Exelon Generation

The Energy + Environmental Economics (E3) authored a report titled *An Economic Analysis of the Conowingo Hydroelectric Generating Station* dated August 8, 2017.[1] This analysis concludes that the Conowingo station can contribute $27 million to $44 million annually towards local environmental protection, mitigation, and enhancement (PM&E) efforts, while earning a 10% rate of return.[2]

The NorthBridge Group was asked to provide an assessment of the E3 analysis. We find that the E3 conclusions are fundamentally flawed due to a gross over-estimation of the future revenues of the plant. Adjusting the E3 analysis to reflect current forward market prices demonstrates that Conowingo's revenues are not even high enough to cover costs plus an adequate return, let alone sufficient to fund additional PM&E contributions.

Like most power plants operating in the PJM market, Conowingo has two primary sources of revenues: capacity revenues and energy revenues. Capacity revenues are earned for being available as an electricity resource. Energy revenues are earned for the electricity sold in the marketplace.

The E3 analysis relies on 2013 costs and revenues to estimate the level of environmental investments that can be funded by Conowingo cash flow. While E3 notes that "[i]t is likely that revenues for Conowingo have declined in recent years due to the suppression of energy market prices in PJM," E3 makes no attempt to reflect this energy price decline in its conclusions.[3] Furthermore, E3 fails to reflect the changes that have occurred in the PJM capacity market since 2013, which have dramatically lowered the future capacity revenue available to the plant.

The chart below illustrates the E3 analysis along with an updated revenue estimate, based on current forward energy prices and actual cleared Conowingo capacity. Beginning with the 2020/2021 delivery year, only Capacity Performance (CP) resources can participate in the PJM Base Residual Auction (BRA), and Conowingo can only provide a fraction of its capacity as a CP resource. The much-reduced capacity value of the plant coupled with the currently weak forward energy market prices results in forward looking revenues for the next ten years that are about half of the E3 estimate.

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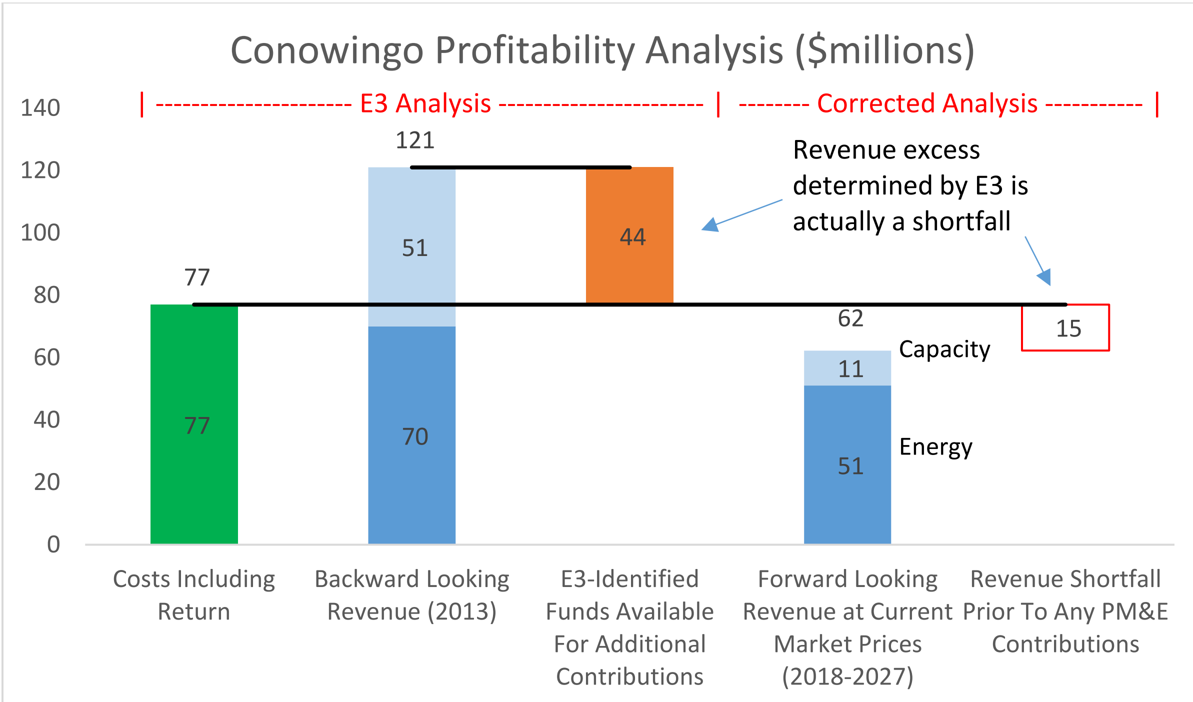
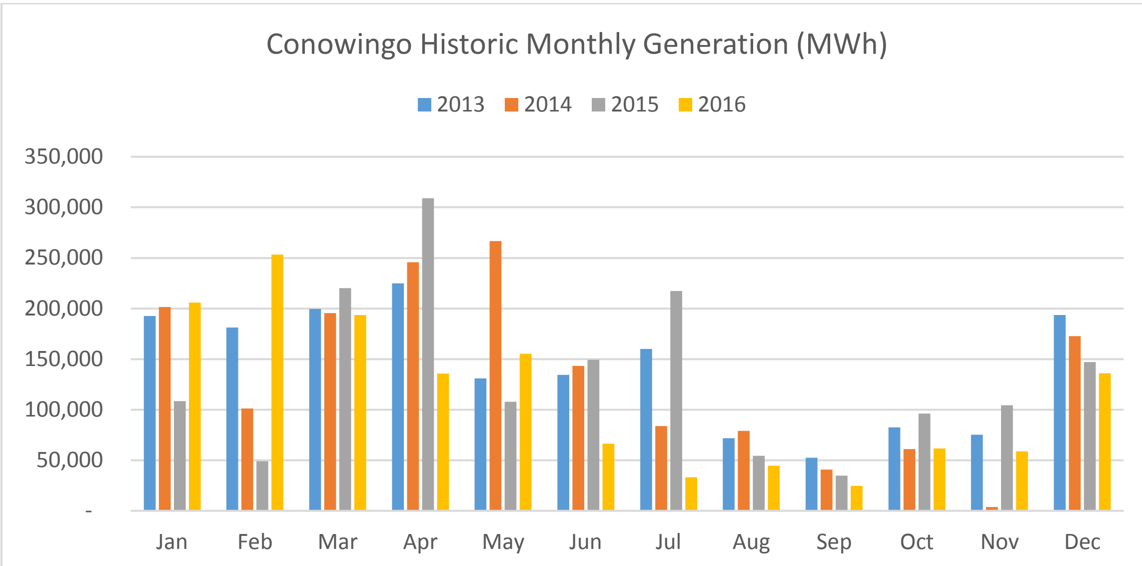
[1] Available from http://www.cbf.org/document-library/non-cbf-documents/economic-analysis-of-the.pdf
[2] Ibid, Executive Summary, pdf pg 1
[3] Ibid, Executive Summary, pdf pg 1



Note: Energy revenue based on 12/14/17 PJMW futures prices from Intercontinental Exchange (theICE.com)

Capacity Revenue

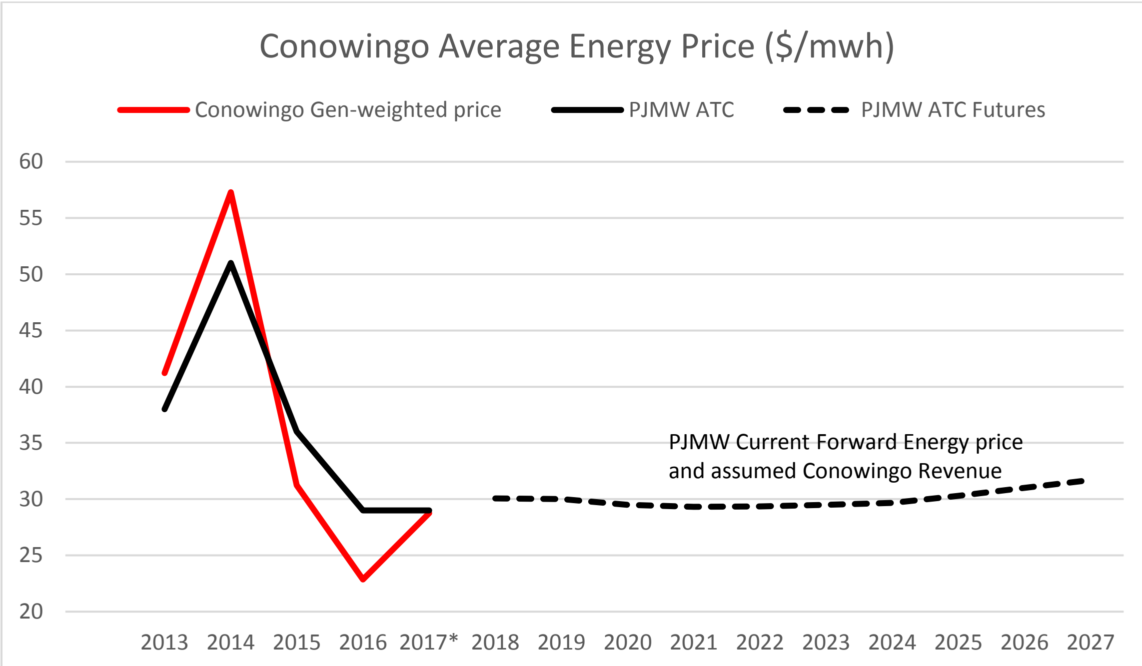


Source: EIA 923

Beginning with the 2016/2017 delivery year, the PJM market began the implementation of its CP market modifications. CP is designed as “pay for performance” to incentivize generators to invest in modernizing equipment, adapting to use different fuel, or other measures to improve availability under emergency conditions. However, generators that are unable to perform during peak system hours are subject to penalties in excess of $3000/MWh.

During the early years of the CP transition, PJM procured two types of capacity: “CP” and “Base Gen.” Through the 2019/2020 capacity auction, Conowingo was included as Base Gen at a discounted price to the CP capacity, but is not subject to the same level of penalties for non-performance as CP suppliers. However, beginning with the 2020/2021 capacity auction in May 2017, PJM eliminated the Base Gen product. Illustrated in the chart above, Conowingo generation is severely limited during the summer months (especially August) by both natural and regulatory factors. Less than 15% of the Conowingo capacity was offered and cleared as CP in the 2020/2021 capacity auction, and this is expected to be the norm going forward. As a result, the average capacity revenue for the 2018-2027 period is expected to be roughly 80% less than the E3 estimate.

Energy Revenue



*Note: 2017 is Jan-Nov
Sources: http://dataminer2.pjm.com/list; theICE.com 12/14/17 trade data; ExGen actual hourly generation

E3 estimates Conowingo energy revenue during 2013 to be about $70 million on 1,699,398 megawatt-hours (mwh) of generation for a generation-weighted price of over $41/mwh. However, Conowingo generation-weighted energy prices were 30-45% lower in 2016 and 2017 versus 2013, yet E3 neglected to consider this in its analysis. Based on current forward market prices, the PJM West Around-the-Clock (ATC) price is expected to remain at levels far below 2013 for the next ten years.

Averaged over the last five years, the historic Conowingo generation-weighted energy prices, accounting for both basis differential and actual dispatch, was very close to the annual average PJM West ATC price. Assuming this relationship continues in the future, the Conowingo energy price for the 2018-2027 period will be approximately 25% less than the E3 estimate.

About the Authors

This study was prepared by members of The NorthBridge Group, John Hutchinson (Principal) and Frank Huntowski (Director). The NorthBridge Group is an independent economic and strategic consulting firm serving the electric and natural gas industries, including regulated utilities and company's active in the competitive wholesale and retail markets. NorthBridge has a national practice and long-standing relationships with restructured utilities in Regional Transmission Organization ("RTO") markets, vertically-integrated utilities in non-RTO markets, and other market participants. Before and throughout the restructuring process of the U.S. electricity industry, the authors have assisted clients with wholesale market design, competitive market analysis and strategy, regulated power supply procurement, state regulatory initiatives and strategy, and mergers and acquisitions.