

A Losing Proposition: Why the Proposal to Repower the Cayuga Plant Should Be Rejected



**Institute for Energy Economics
and Financial Analysis**
IEEFA.org

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David Schlissel, Director of Resource Planning Analysis

Cathy Kunkel, IEEFA Fellow

Appendix by Tom Sanzillo, Director of Finance

Executive Summary

The Institute for Energy Economics and Financial Analysis (IEEFA) has assessed the financial viability of Cayuga Operating Company's February 2015 revised proposal to repower the coal-fired Cayuga Power Plant (Cayuga) as a natural gas plant, and IEEFA has concluded that the New York State Public Service Commission should reject this proposal.

The proposed repowering would not benefit ratepayers in any meaningful way. Proposed transmission upgrades to address existing reliability issues will have to be made whether or not Cayuga is repowered, thus negating the need to spend \$145 million to repower an aging and potentially unreliable plant.

IEEFA's analysis focuses on the following three issues:

- The financial viability of the Cayuga plant with and without the owners' February 2015 Revised Repowering Proposal.
- The credibility of the claimed benefits in Cayuga's February 2015 Revised Repowering Proposal.
- Whether there are other, less expensive, alternatives for achieving grid reliability and for maintaining the local tax base and jobs and promoting economic development.

The major findings of our analysis:

- The repowered Cayuga plant will be uneconomic to operate going forward, without ongoing ratepayer-supplied subsidies. If Cayuga's Revised Repowering Proposal is approved, by the 2027 end of the 10-year repowering period, New York State Electric and Gas (NYSEG) customers will have paid more than \$265 million to keep the plant operational. There also is a serious risk that ratepayers will be called upon to provide continued subsidies to the facility even after the 10-year term of the proposal ends.
- Recent reliability analyses show that transmission upgrades recommended by NYSEG would be required to address identified grid reliability concerns whether or not Cayuga is repowered. These analyses effectively nullify the argument for ratepayer-subsidized repowering of the Cayuga plant.
- While Cayuga's owners claim that repowering would produce energy and capacity cost savings and benefits from fuel diversity, those benefits are unsubstantiated and/or illusory. There are less expensive, and far better, ways to achieve electric grid reliability and to maintain the local tax base and jobs and promote economic development than artificially propping up an uneconomic power plant.

Source Materials

This report is based on information in New York State Public Service Commission Cases Nos. 12-E-0577 and 12-E-0400, as well as other permit proceedings, and a review of publicly available information about the Cayuga plant, the New York Independent System Operator (NYISO), the state's new Reforming the Energy Vision strategy, and future carbon dioxide emissions allowance prices.

In particular, the report relies on information included in the March 26, 2013 Repowering Proposal. Cayuga's February 2015 Revised Repowering Proposal unfortunately contained very little supporting information concerning future plant operations and costs as a dual-fuel facility. The Revised Repowering Proposal also failed to include any discussion or evidence on the upfront capital cost of the repowering or the risks that are being borne by the plant's owners rather than NYSEG's ratepayers. As a consequence, this information has been conservatively derived from the 2013 Repowering Proposal and the other sources of information cited above.

Background

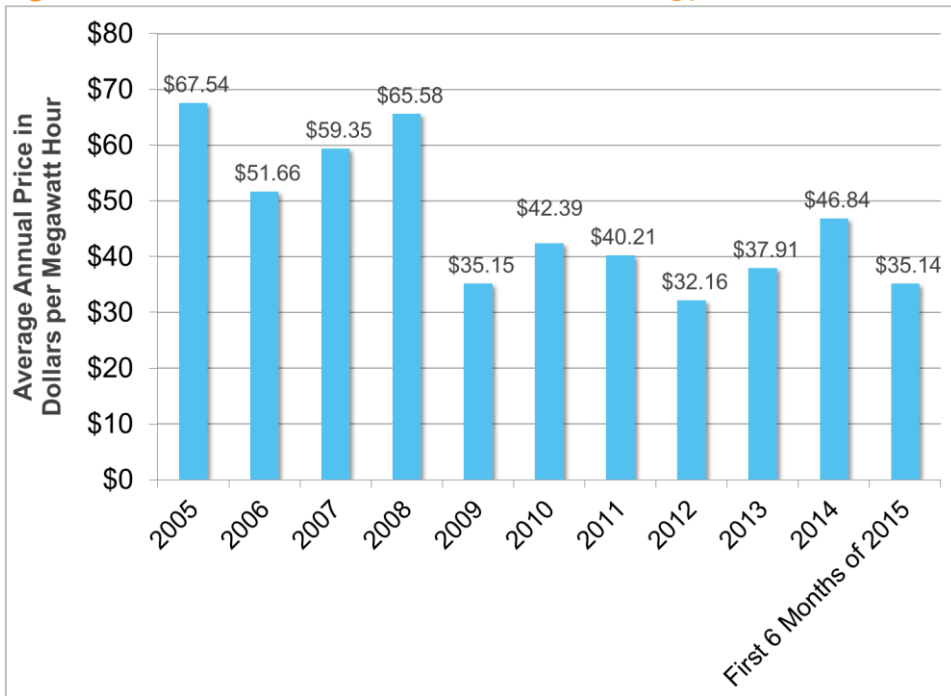
The Cayuga Plant is a 60 year-old, 306 megawatt (MW) coal-fired power plant on the shore of Cayuga Lake in Lansing, New York. The plant has two coal-fired units and related equipment. Unit 1 (155 MW) began commercial service in 1955, Unit 2 (167 MW) in 1958. Cayuga was originally built and owned by NYSEG but was divested to AES Eastern Energy in 1999, along with five other plants.

AES Eastern Energy filed for bankruptcy protection in December 2011. In 2012, following the bankruptcy, AES Eastern Energy's bondholders formed a new company, Upstate New York Power Producers, which assumed ownership of the Cayuga and Somerset power plants. The Cayuga Operating Company, a subsidiary of Upstate New York Power Producers, now operates the plant.

The Cayuga plant's economics continue to be affected by the factors that together drove AES Eastern Energy partners into bankruptcy.

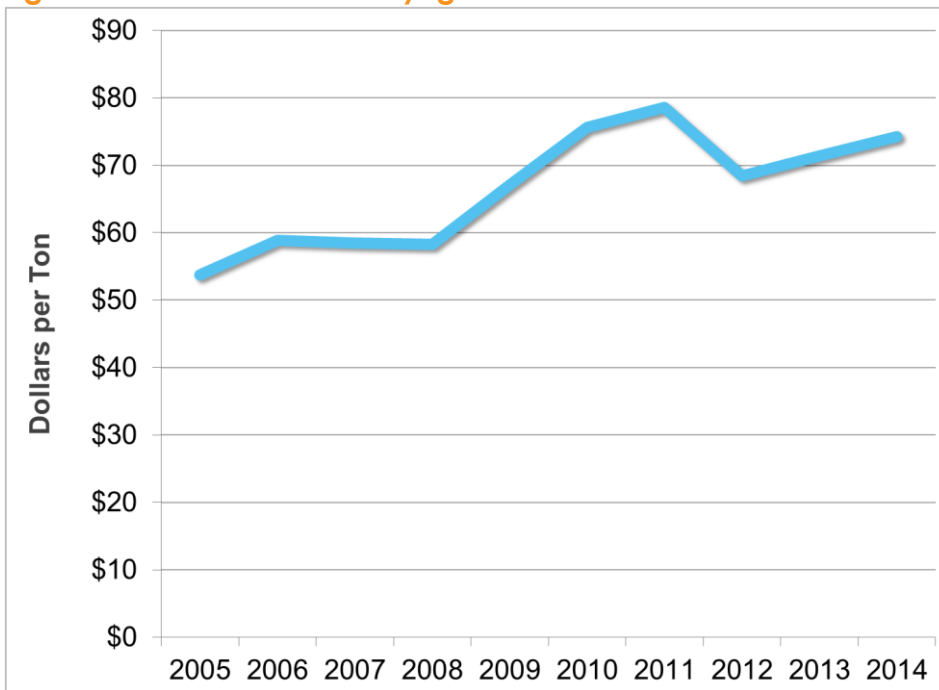
One major factor was the dramatic decline in energy market prices. As shown in Figure 1 below, energy market prices in NYISO's Zone C in Upstate New York declined significantly after 2008, with a partial and temporary uptick in 2014 due to what has been called the "polar vortex" event. This uptick was not replicated, however, during the even colder winter of 2015.

Figure 1: The Decline in NYISO Zone C Energy Market Prices.



At the same time that market prices dropped, the delivered price of coal, Cayuga's fuel source, increased significantly, as shown in Figure 2.

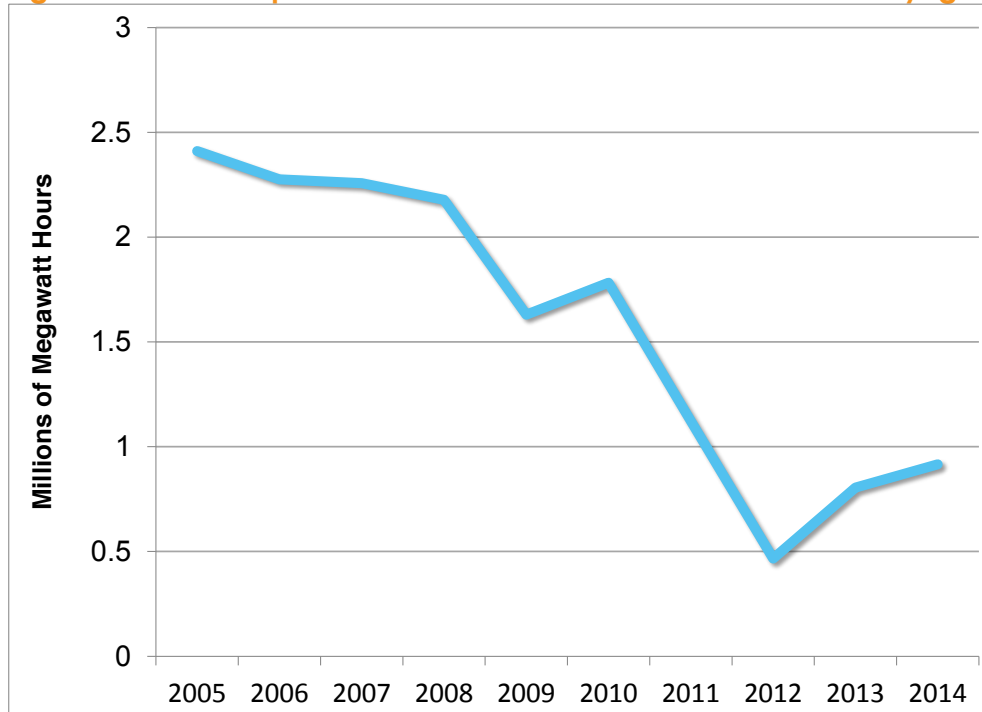
Figure 2: Increase in Cayuga's Delivered Coal Prices.¹



¹ Source: SNL Financial.

During this period, NYISO experienced a flattening of its peak demands and energy loads. All of these factors have combined to lead to a precipitous decline in the amount of power generated by Cayuga since 2008. This is illustrated in Figure 3.

Figure 3: The Precipitous Decline in the Power Generated at Cayuga.



Reliability Support Service Agreements 1 and 2

On July 20, 2012, Cayuga notified the New York Public Service Commission that it intended to mothball Cayuga Station by January 16, 2013, due to the depressed wholesale energy prices in the NYISO region. The low energy prices meant that the cost of generating power at Cayuga was above the market price for a significant portion of the year.² Moreover, capacity³ prices⁴ were “very low” and not expected to increase significantly in the next one to three years.⁵

Cayuga's mothball announcement triggered reliability analyses by NYSEG and NYISO that concluded that, until certain transmission upgrades were completed in the area near Auburn, New York, both units at Cayuga needed to be available and capable of being committed in order to maintain system reliability. As a result, on December 27, 2012 NYSEG and Cayuga

² November 16, 2012 filing with FERC, in Cayuga Operating Company, LLC, Docket No. ER13-405-000, at page 2.

³ A power plant's capacity is the unit's maximum electric output under specified conditions. Capacity is measured in kilowatts (KW) or megawatts (MW). One MW is one thousand KW.

⁴ NYISO conducts auctions in which load serving entities (including the regulated utilities) buy capacity for the upcoming summer or winter capability period. Capacity prices set in these auctions then determine how much each generator will be paid for the capacity from their power plant(s) during the upcoming capability periods.

⁵ Id.

Operating Company entered into a one-year Reliability Support Service Agreement (RSSA 1) beginning on January 16, 2013.

RSSA 1 required NYSEG, and therefore NYSEG's ratepayers, to pay a monthly fixed charge of \$2,431,388 to Cayuga and to pay up to \$4.325 million for specified capital project expenditures. RSSA 1 also required Cayuga to refund up to one-half of these capital expenditures during a five-year refund period, but only if Cayuga continued to operate the plant beyond the term of the RSSA and maintained a specified level of profitability. The Agreement further required that any capacity market revenues earned by Cayuga would be used to offset NYSEG's monthly fixed charges. Under the Agreement, Cayuga would retain all net energy and ancillary service revenues up to \$7 million per year. Revenues in excess of \$7 million would be shared 50/50 between NYSEG and Cayuga.

On January 16, 2014, NYSEG and Cayuga entered into a second RSSA (RSSA 2) for the period January 16, 2014 through June 30, 2017, with the possibility of further extension. The terms of RSSA 2 were similar to those in RSSA 1 except that: (1) NYSEG customers would pay higher monthly fixed charge payments, (2) NYSEG customers would pay for up to \$42.3 million in capital improvements, and (3) Cayuga would retain up to \$5 million per year in net energy and ancillary service revenues, and revenues in excess of \$5 million would be shared 50/50, assuming that both units of the Cayuga Station remained in service.

IEEFA estimates that NYSEG ratepayers ultimately will have to pay a total of \$120 million under the terms of RSSA1 and RSSA2. This figure was derived through an analysis of Cayuga's actual monthly generation, energy and capacity market prices, actual coal prices through June 2015, and projected cost figures for the next two and a half years, and is net of all capital refunds and capacity, net energy and ancillary services revenue offsets.

Unfortunately, these expenditures by NYSEG ratepayers will not result in any permanent solution to the identified grid reliability issues that have thus far required the continued availability of the Cayuga Station. Nor have these expenditures resulted in any energy or capacity market savings for NYSEG or its ratepayers. Instead, they have merely forestalled the inevitable requirement to make long-term reliability upgrades while in the meantime generating profits for Cayuga's owners.

Cayuga's Revised Repowering Proposal

NYSEG initially proposed to deal with the local reliability issues that led to the RSSA agreements by making upgrades to the transmission system.⁶ However, in January 2013, the Commission opened this docket to provide a more thorough evaluation of whether these transmission upgrades or ratepayer-subsidized repowering were a preferable long-term resolution for ratepayers. Cayuga submitted four repowering proposals. The staff of the Department of Public Service rejected all of them because they placed all market risk on NYSEG's ratepayers. Cayuga and NYSEG then engaged in sixteen months of negotiations in an attempt to generate a joint repowering proposal that was in the best interest of ratepayers. When that failed, Cayuga's owners submitted their own unilateral Revised Repowering Proposal in

⁶ Indeed, these upgrades were initially proposed in NYSEG's 2009 rate case (09-E0715).

February 2015, seeking ratepayer subsidies to continue operating Cayuga for ten years beginning in 2017.

The Revised Repowering Proposal would commit NYSEG customers to paying another \$145.5 million in subsidies for Cayuga, including an initial payment of \$49.5 million for converting both generating units at the Cayuga plant to burn natural gas, while retaining the ability of at least one of the units to burn coal (henceforth “repowering”). Under the proposed repowering plan, NYSEG ratepayers also would be required to pay another \$96 million to the Company over a ten-year period to subsidize the operation of the repowered Cayuga gas- and coal-fired power plant.

However, like the more than \$120 million that NYSEG's customers are currently paying under the two RSSAs, the additional \$145.5 million required by the Revised Repowering Proposal would be for a temporary, not a permanent or long-term resolution of electric grid reliability concerns. The Revised Repowering Proposal would not guarantee the long-term reliable operation of the aging Cayuga plant. Its owners could decide to retire the plant at any point, either during the term of the proposed 10-year agreement or at the conclusion of that agreement, depending on the agreement's terms and Cayuga's profitability. There is also a real risk that the aging plant could experience a significant problem or event, like the fire in January 2015, which would prevent either or both units at the plant from operating for an extended period or even permanently.

Cayuga's Financial Viability

IEEFA prepared a cash flow analysis to evaluate the risk to NYSEG ratepayers of continued investment in the Cayuga plant under the terms of the company's Revised Repowering Proposal. IEEFA looked at Cayuga's profitability under a range of assumptions about future plant operations and electricity market costs:

1. with and without the \$9.6 million annual cash-infusion from NYSEG ratepayers currently proposed by the Revised Repowering Proposal;
2. with Unit 1 burning coal or gas during winter months, and
3. under a range of future energy market and capacity prices, natural gas prices, carbon dioxide (CO₂) emission allowances prices, and future plant operating and maintenance costs.

IEEFA concludes from this cash flow analysis that:

1. Cayuga is unlikely to be profitable in almost all of the years 2018 to 2027 unless NYSEG's ratepayers provide the \$9.6 million annual cash infusion required by the Revised Repowering Proposal; and
2. The plant is very likely to be unprofitable following the 2027 end of the Revised Repowering Proposal's 10-year term once the cash infusion from ratepayers ends.

Moreover, even in those years in this period when Cayuga provides positive Earnings Before Interest Taxes Depreciation and Amortization (EBITDA)⁷ for its owners, their net after-tax profits from the plant are likely to be small. As a result, there is a real risk that the plant's owners will decide to retire Cayuga either during the ten-year repowering period or, even more likely, after it ends in 2027.

If the owners decide to retire Cayuga (either during or after the ten-year repowering period) and any portion of the transmission upgrades have not been completed, another RSSA or similar agreement could be required under which NYSEG's ratepayers would continue to subsidize the plant until all required transmission upgrades can be brought online.

Key Assumptions

The following are the most significant assumptions underlying IEEFA's cash flow analysis:

Scenarios and Cases

IEEFA examined two scenarios reflecting different assumptions concerning the fuel burned at the plant. In both scenarios, Cayuga Unit 2 would burn natural gas. In the All Gas Scenario, Cayuga Unit 1 would also burn natural gas for the entire year. In the Gas & Coal Scenario, Cayuga Unit 1 is assumed to burn coal during the winter months, which are the months when natural gas prices are expected to be higher and coal is most likely to be economic.

For each of these fuel scenarios, IEEFA examined two cases: a base case and a high case. The base case reflects a set of conservative assumptions as to future NYISO energy and capacity market prices, natural gas prices, CO₂ emission allowance prices, and Cayuga's annual non-fuel operating & maintenance (Non-Fuel O&M) expenses. The high case reflects 25 percent higher energy and capacity market prices, 10 percent higher natural gas prices, higher CO₂ allowance prices beginning in 2020, and 25 percent higher Non-Fuel O&M costs.

Generation

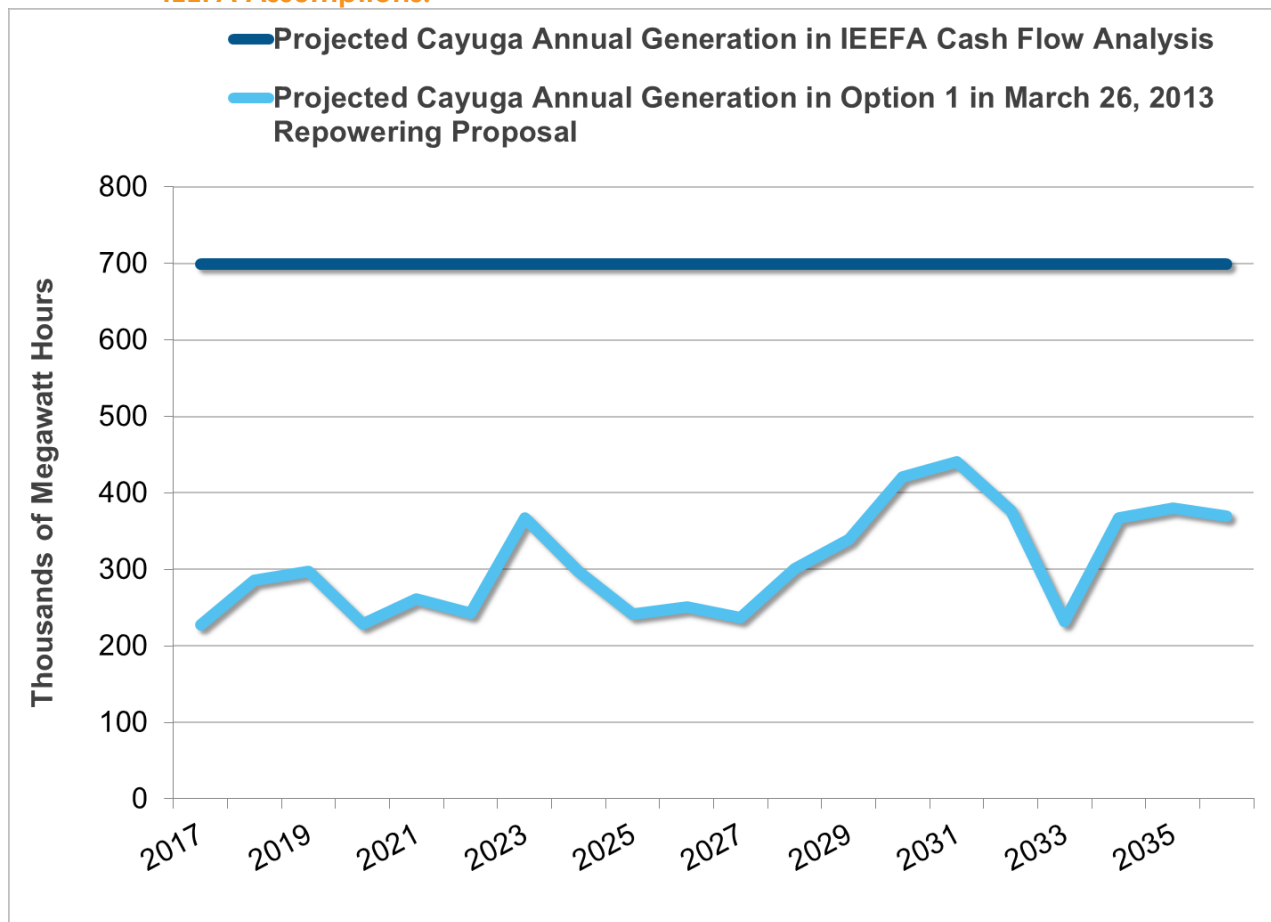
The cash flow analysis assumes in all scenarios and cases that Cayuga Units 1 and 2 will operate seven months per year—December, January, February, March each winter and June, July and August each summer—and will each generate the same amounts of power that they produced, on average, during those seven months in 2013 and 2014. The decision to assume operations during these and only these months (and not during the “shoulder” month periods between them) was based upon (1) the results of the dispatch modeling presented in

⁷ EBITDA is a common measure of a plant or company's pretax profitability.

Cayuga's March 2013 Repowering Proposal and (2) a review of the forward⁸ peak⁹ and off-peak Zone C energy market prices for the years 2016 through 2026.

These assumptions about future Cayuga generation are conservative in several ways. First, unlike the Company's dispatch modeling in its March 26, 2013 Repowering Proposal, which projected that the plant would only generate power during the summer months. IEEFA assumes that Cayuga will produce significant amounts of energy during the winter months as well. Therefore, the IEEFA analysis assumes much higher levels of annual generation than the Company's March 26, 2013 Repowering Proposal forecast in Option 1, in which both units were repowered to generate on natural gas. This can be seen, in Figure 4, below:

Figure 4: Projected Annual Cayuga Net Generation – Comparison of Repowering Plan with IEEFA Assumptions.



⁸ The forward electricity market allows suppliers and buyers to lock in quantities of power to be delivered in future years at the prices agreed upon today.

⁹ There are, in general, two periods during which power is sold. NYISO's peak period runs from 7 am through 11 pm, Monday through Friday. The off-peak period is the remaining hours of the weekdays and all of the hours in the weekend. Energy market prices are expected to be higher during the peak periods because the loads are generally higher (that is, the demand for power is greater) during those hours.

IEEFA's assumed levels of Cayuga's future generation also are conservative in that they are extrapolated from an average of the plant's actual generation in 2013 and 2014, which means they reflect the plant's high generation during the unusual Polar Vortex event in the winter of 2013/2014, and exclude Unit 1's low production this year due to the January 2015 fire.

Thus, the cash flow analysis does not assume that the plant will experience any significant operating problems or events that would either force one or both units out of service for an extended period or cause the plant's generation to otherwise degrade. This is very conservative given Unit 1's recent operating experience, the plant's age (Cayuga will be 62 years old in 2017, and 72 years old at the 2027 end of the ten-year repowering period), and the fact that the plant has recently experienced an event that has taken one of the units offline for nearly seven months.

As NYSEG has stated, there is significant age-related risk in entering into a repowering agreement that would rely on an aging Cayuga plant:

At a minimum, the age and condition of the Cayuga Facility must be addressed and concerns must be ameliorated regarding the ability of the plant to operate in a reliable fashion into the future. Utilization of 1950's vintage facility (although with specific upgrades) creates additional operational risks. In addition, the Cayuga Facility recently experienced a shutdown of one unit and a fire, which is still under investigation.¹⁰

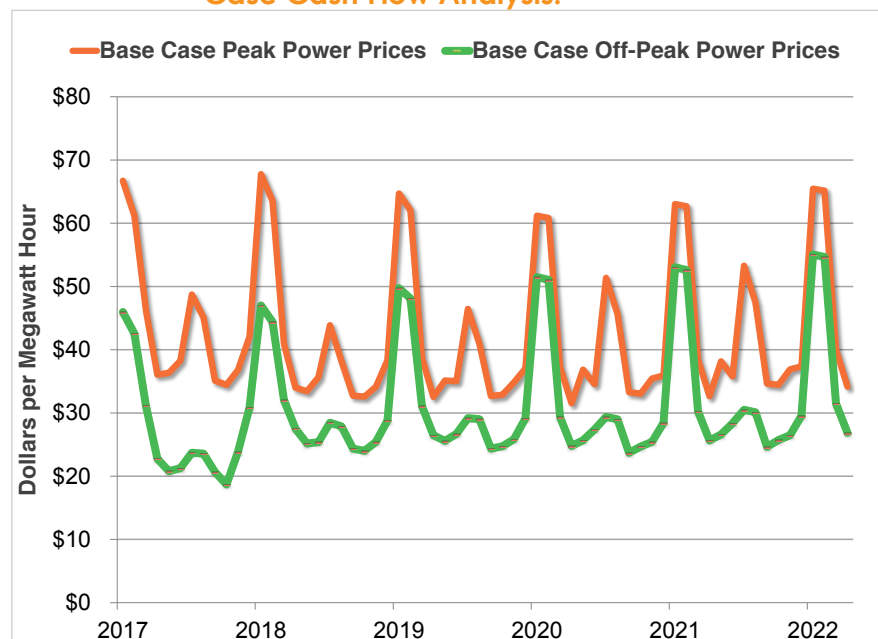
The fire referenced in NYSEG's filing has kept Unit 1 offline since the middle of January.

Energy Market Prices

The base cases in IEEFA's cash flow analysis use NYISO Zone C energy market futures prices for the years 2017-2021 published by SNL Financial, as of August 14. These energy market futures prices are shown in Figure 5.

The cash flow analysis also assumes that energy market prices would increase after 2021 at an annual rate of 2.0 percent each year. This is approximately double the annual rate at which energy market prices are expected to increase between 2016

Figure 5: Future Energy Market Prices Used in IEEFA Base Case Cash Flow Analysis.



¹⁰ NYSEG February 6, 2015 filing, at page 16.

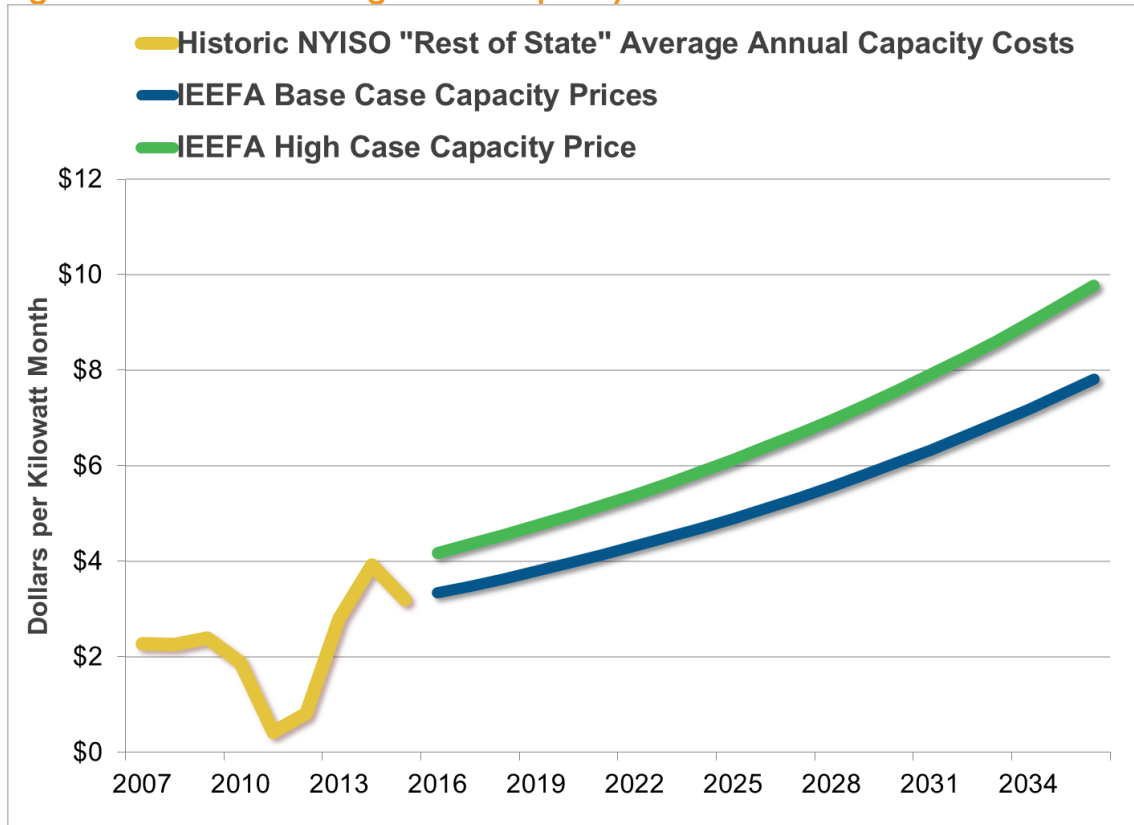
and 2021. IEEFA's high cases use energy market prices that are 25 percent above the base case prices.

The dispatch modeling presented by Cayuga's owners in their March 26, 2013 Repowering Proposal projected that 75 percent to 78 percent of Cayuga's generation will occur during the higher price peak energy periods each month. To be conservative, the IEEFA cash flow analysis makes the same allocation of generation between peak and off-peak periods. This assumption likely overstates the revenues that the plant's owners will earn from selling power into the NYISO energy market, especially in the Gas & Coal Scenario in which Cayuga Unit 1 is burning coal during the winter months of January, February and March.

Capacity Prices

The cash flow analysis uses two sets of conservative future capacity prices. The base case capacity price reflects the current average annual capacity price for NYISO's "Rest of State" that excludes downstate New York, escalated at an annual rate of 4.34 percent. This is the average annual rate between the NYISO average annual "Rest of State" capacity price in 2007 and that in 2015. High case capacity prices are assumed to be 25 percent above the annual base case prices. The capacity prices used in the cash flow analysis are shown in Figure 6 below:

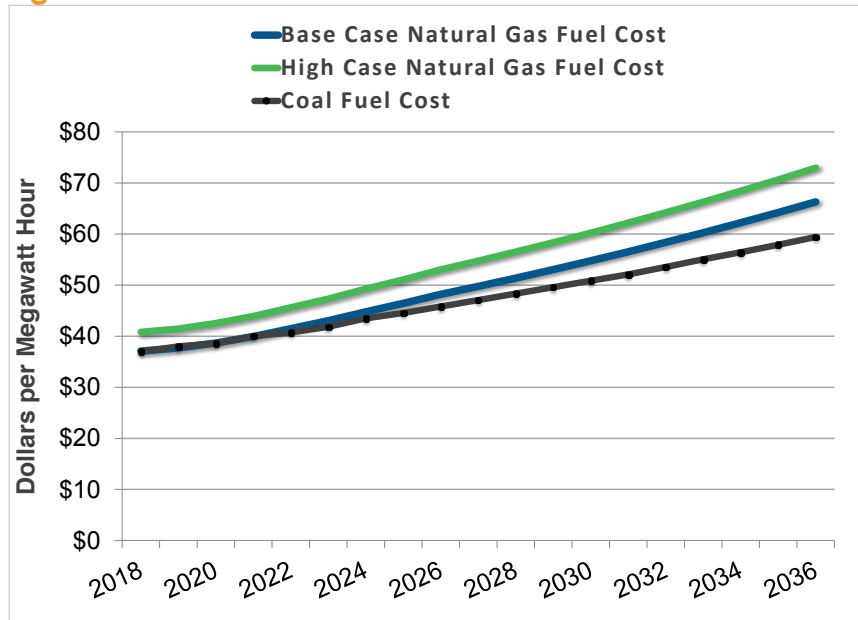
Figure 6: Base and High Case Capacity Prices Used in IEEFA Cash Flow Analysis.



Natural Gas and Coal Prices

The IEEFA cash flow analysis uses Henry Hub natural gas futures prices as of August 14, 2015 and SNL's July 2015 coal price forecast, adjusted for the incremental cost of delivering the gas and coal to Cayuga. The analysis also assumes that Units 1 and 2 will have a 10,500 BTU/KWh heat rate when burning natural gas and that Unit 1's heat rate when burning coal will be 11,000 BTU/KWh.¹¹

Figure 7: Natural Gas and Coal Fuel Costs.



CO₂ Emissions Prices

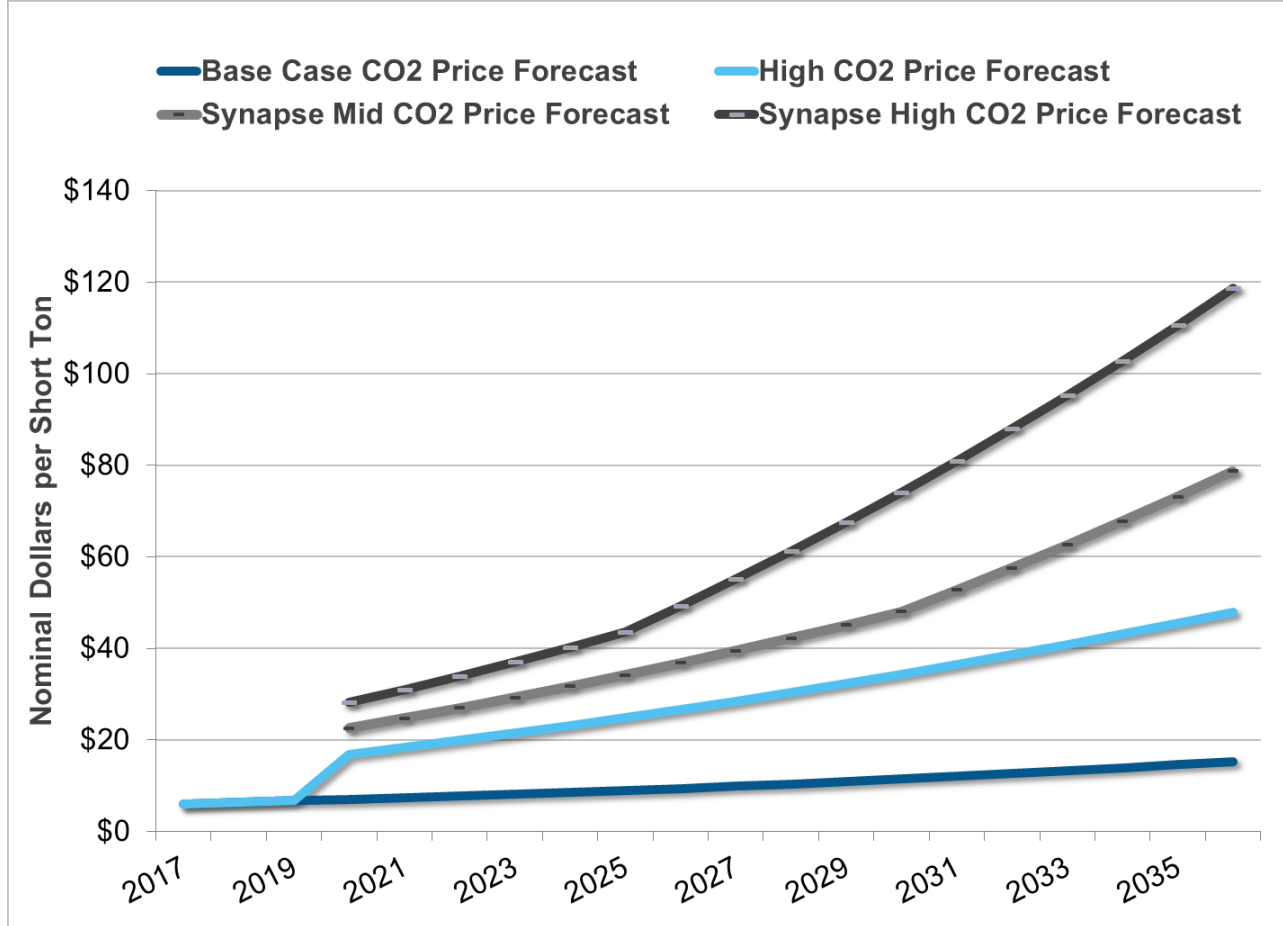
The base case cash flow analysis assumes that current Regional Greenhouse Gas Initiative (RGGI) CO₂ allowance prices will be escalated at a rate of 5 percent per year.¹² The high case analysis assumes that CO₂ allowance prices beginning in 2020 would increase to the low scenario prices projected in March 2015 by Synapse Energy Economics.¹³ The Base and High CO₂ allowance prices used in the IEEFA cash flow analysis are shown in Figure 8, below, along with the Synapse Mid- and High- CO₂ price forecasts. As Figure 8 illustrates, the base case CO₂ allowance prices IEEFA uses in its cash flow analysis are highly conservative compared to the Synapse forecasts.

¹¹ Cayuga's recent heat rate burning coal has been approximately 11,000 BTU/KWh. The 10,500 BTU/KWh heat rate for the repowered plant burning natural gas assumes a 4-5 percent improvement in heat rate consistent with the experience of other recent and proposed coal-to-gas conversions.

¹² New York State is a member of RGGI, a market-based regulatory program designed to reduce greenhouse gas emissions from the power sector across member states. RGGI requires members to set a yearly cap on greenhouse gas emissions from the power sector and allows sources to reduce their emissions or buy emissions allowances at auction.

¹³ *2015 Carbon Dioxide Price Forecast*, Synapse Energy Economics, March 3, 2015. Available at www.synapse-energy.com.

Figure 8: Base and High Case CO₂ Allowance Prices Used in IEEFA Cash Flow Analysis.



The IEEFA cash flow analysis also projects that Cayuga will emit 110 pounds of CO₂ per Million BTU of natural gas burned and 205 pounds per Million BTU of coal. These assumptions are based on the plant's actual CO₂ emissions when burning coal¹⁴ and its projected CO₂ emissions when burning natural gas.¹⁵

Fixed and Variable Operating & Maintenance (O&M) Costs.”

In both the All Gas and the Gas & Coal Scenarios, the IEEFA base case cash flow analysis conservatively uses the annual non-fuel O&M costs for a repowered Cayuga that were presented in the company's March 26, 2013 Repowering Proposal. This is because Cayuga's February 2015 Revised Repowering Proposal did not include any evidence as to the company's current estimates for the plant's annual non-fuel fixed operating & maintenance costs when burning either natural gas or coal. The IEEFA high case analysis assumes 25 percent higher annual non-fuel fixed O&M costs. This reliance on the annual fixed non-fuel O&M costs

¹⁴ Cayuga's reported CO₂ emission rate in recent years when burning coal.

¹⁵ Option 1, Attachment 4, March 26, 2013 Repowering Proposal.

from Cayuga's March 2013 Repowering Proposal is conservative in several ways. First, Cayuga has provided no evidence that it actually could achieve its planned operations with the level of fixed costs included in its March 2013 Repowering Proposal. Second, Cayuga has provided absolutely no evidence or information as to its currently expected fixed (or variable) operating costs for a repowered plant with Unit 1 having dual-fuel capability.

Third, it is reasonable to assume that a plant that burns both natural gas and coal will be more expensive to operate than a unit that just burns gas, as more equipment will need to be run and, perhaps, more employees will be needed, at least during the periods when the plant is burning coal. Finally, as with future plant generation, the IEEFA cash flow analysis does not assume that the plant will experience any significant operating problems or events that will cause its fixed (and/or variable) operating costs to either spike for a limited period or to rise substantially over time. This is a very conservative assumption for a plant that will already be 62 years old at the start of the ten-year repowering period.

The IEEFA base and high cases both assume variable O&M costs in the scenario in which Unit 1 burns coal during the winter months. This variable O&M starts at \$4 per MWh based on information from the U.S. Department of Energy's Energy Information Administration, and is escalated at a 2 percent overall rate of escalation.¹⁶

Capital Expenditures

Any power plant will need to make annual capital investments to replace or upgrade degrading plant equipment, components and systems. This is especially true for an aging facility like Cayuga. Therefore, the cash flow analysis includes \$6.841 million of annual capital expenditures. This figure is the average annual level of capital expenditures at Cayuga that is currently included in the RSSA 1 and 2 Agreements for the period, net of the one-time \$12.5 million for the controls needed to comply with the Mercury and Air Toxics Standard (MATs).

The analysis also assumes that Cayuga's owners would have to refund their 50 percent share of the \$34.202 million of capital expenditures included in RSSA 1 and 2. Note that this figure is net of the \$12.5 million expenditure for MATs controls authorized under RSSA2.

To be conservative, the analysis does not include any specific expenditures for installing cylindrical wedge-wire screens to comply with the requirements of Cayuga's December 1, 2014 modified water (State Pollution Discharge Elimination System) permit, which determined that such screens would be the best technology available for the plant or the cost of any alternative contingency plan.¹⁷ Published assessments suggest that the cost of installing such screens at existing plants could be approximately \$10 million per 100 MW of capacity. This would mean a possible expenditure of approximately \$30 million at Cayuga in or around 2018, beyond the termination of RSSA 2. This expenditure would make continued operation of Cayuga under the terms of the Revised Repowering Proposal agreement even less economic

¹⁶ http://www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf.

¹⁷ While cylindrical wedgewire screens were determined to be the Best Technology Available, their installation is subject to a feasibility study. Consequently, Cayuga may ultimately be required to install a different technology if cylindrical wedgewire screens are determined not to be feasible based on that study. As a result, the costs of complying with the Best Technology Available requirement are not precisely known.

and increase the likelihood that the plant would not be financially viability without a further bailout from ratepayers.

Term of the Agreement

IEEFA assumed that the Revised Repowering Proposal, if approved, would go into effect on January 1, 2018, at the conclusion of an extended RSSA 2.

Results

IEEFA's analyses uniformly show that the repowered plant would be unprofitable in the absence of ongoing ratepayer subsidies. Even with Cayuga's proposed 10-year, \$9.6 million/year subsidy, the plant's profitability is likely to be marginal. Therefore, IEEFA concludes that there is a reasonable likelihood that the plant will close upon termination of ratepayer subsidies, if not sooner. Reliance on the plant to provide long-term local system reliability therefore entails considerable risk.

In order to evaluate the plant's financial viability the IEEFA cash flow analysis calculated the annual EBITDA that Cayuga would earn over the range of Scenarios and Cases outlined earlier. A negative EBITDA in an individual year, or over a number of years, would show that the plant's owners would suffer a financial loss rather than make a net, after-tax profit. Even a positive EBITDA could mean that the owners might gain little or no net, post-tax profits from the plant after federal corporate income tax, interest on borrowed funds, and amortization of any of funds invested in the repowering by the plant's owners are taken into account.

In each of the scenarios and cases IEEFA examined, Cayuga produced negative EBITDAs in almost every year of the period 2018 through 2027 (the ten-year repowering plan) without the annual \$9.6 million cash infusion from NYSEG and its ratepayers. With the annual \$9.6 million from NYSEG, Cayuga produced positive, but small, EBITDA in almost every year except for 2024. In 2024, Cayuga's March 26, 2013 original Repowering Proposal predicted a sharp spike in the plant's fixed non-fuel O&M expenditures due, it is presumed, to a periodic inspection and overhaul of some plant equipment, such as the turbine-generator, components that are frequently overhauled several times during a power plant's operating life.

The positive, but small, EBITDA earned by Cayuga in most years of the ten-year repowering plan in each of the scenarios and cases investigated by IEEFA can be seen in Figure 9.

Figure 9: Annual EBITDA Earned During the Years 2018-2027 by Cayuga in the Base and High Cases Examined by IEEFA.

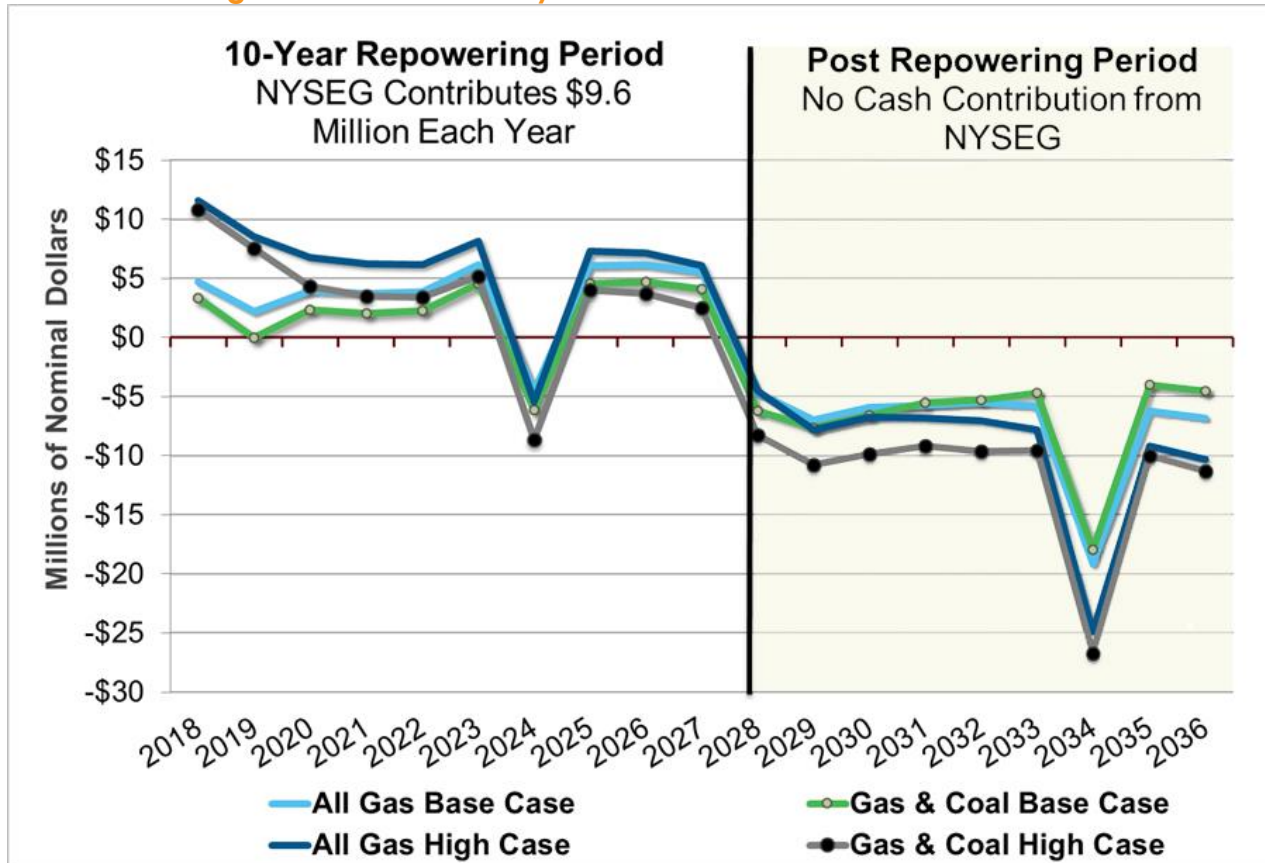
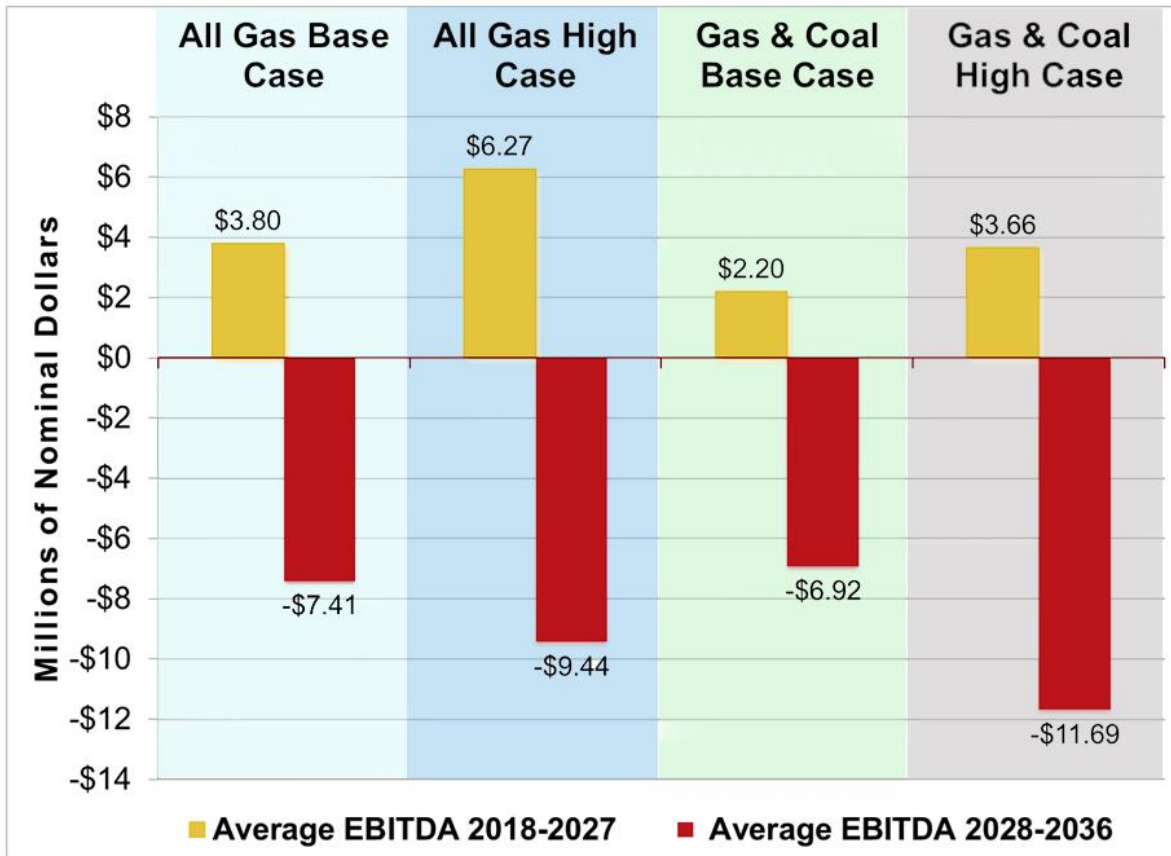


Figure 9 also shows that the EBITDAs decline significantly after 2027, the last year in which NYSEG would be scheduled to make a \$9.6 million cash contribution, and remain negative for the remainder of the years 2028-2036. The significantly lower EBITDAs for the year 2034 are the result of another sharp upward spike in Cayuga's non-fuel O&M expenditures shown in Option 1 in the March 26, 2013 Repowering Proposal.

Figure 10 shows the average annual EBITDA earned by Cayuga during the two periods, 2018-2027 when NYSEG would be contributing \$9.6 million each year, and 2028-2036 after NYSEG's cash infusions are assumed to be ended.

Figure 10: Average Annual Cayuga EBITDA for the Periods 2018-2027 and 2028-2036.



Several important factors must be emphasized about the results presented in Figures 9 and 10.

First, Cayuga's owners would have to pay income taxes, interest costs and amortization of their initial investments out of the EBITDAs that are shown in Figure 10. For example, income taxes can be expected to take approximately one-third of each year's EBITDA. As discussed above, Cayuga's February 2015 Revised Repowering Proposal does not present any information on how much the plant's owners are contributing to the upfront capital cost of the repowering, the number of years over which they intend to amortize this investment or the interest payments they will have to make. Therefore, it is not possible to determine the after-tax profits just from looking at the pre-tax EBITDAs. Nevertheless, it seems clear that any after-tax profits earned by the plant's owners during the ten years of the repowering plan (2018-2027) will be marginal, at best. Therefore, there is no guarantee that they will want to continue to operate the plant through to the 2027 end of this period.

Second, Cayuga's owners will be even less likely to want to continue operating the plant after NYSEG's annual \$9.6 million cash infusions end and the EBITDAs turn negative. This strongly suggests that the owners will not be willing to continue to operate the plant after 2027 unless there is another cash bailout.

Third, the IEEFA cash flow analysis does not in any way represent a 'worst case' scenario as it uses a number of conservative assumptions and, in particular, does not assume any higher

operating costs or decline in generation as Cayuga ages from 60 to 80 years. Many fossil-fired plants are retired long before they reach 60, let alone 80 years of age due to decreased reliability, increased maintenance requirements, the need for expensive environmental upgrades, and/or higher fuel or non-fuel operating costs.

Finally, it appears that the only factors that could generate substantial positive EBITDAs, leading to significant after-tax profits, in any individual year or group of years would be an extended spike in capacity and/or energy market prices. Such an extended spike in capacity prices is unlikely given: (1) the large amounts of excess capacity projected for the NYISO system in coming years, including the upstate New York zones, during both the summer and winter periods;¹⁸ and (2) the substantial amounts of energy efficiency savings, demand response and renewable energy resources that can be expected to be achieved in the coming years from New York's Reforming the Energy Vision (REV) strategy.

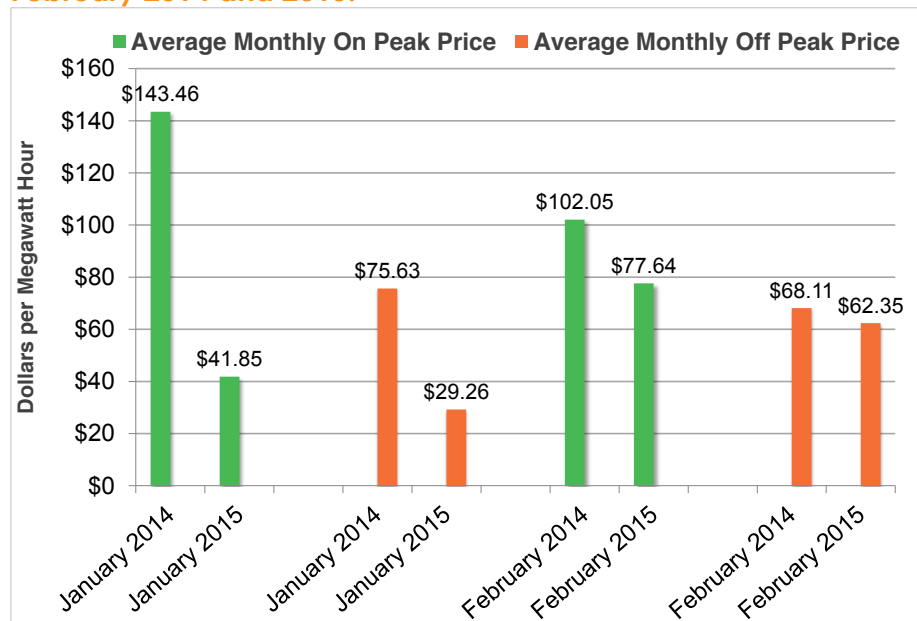
The Polar Vortex Price Spike is Not Likely to Be Repeated

A prolonged spike in energy market prices, like that experienced during the winter of 2013/2014, is unlikely to be repeated given the factors noted above and the actions taken by NYISO and the neighboring system operators to mitigate the effects of gas supply constraints. These actions have already had an impact, as market prices were much lower in January and February 2015 than they had been in January and February 2014 (during the Polar Vortex Event) even though the weather was significantly colder in 2015, particularly in February, than it had been in 2014.

Figure 11, shows the average Zone C on-peak and off-peak period prices in the months of January and February in 2014 and 2015. It is clear that market prices were lower, in some periods substantially lower, in 2015 than they had been during the Polar Vortex Event in 2014.

Figures 12 and 13, below, then show that Zone C market prices were lower in January and February 2015 even though the January and February

Figure 11: Zone C Energy Market Prices, January and February 2014 and 2015.



¹⁸ NYISO 2015 Load & Capacity Data, "Gold Book," Tables I.2-a, III-a, III-b, V-2a and V-2b, especially.

average high and average low temperatures in five cities in Zone C were lower in 2015 than they had been in 2014.¹⁹

The temperatures in February 2015, in particular, were extremely low, as there were 14 days during which the average low temperature in the five Zone C cities was zero degrees Fahrenheit or below, as compared to only 3 days in February 2014. Yet the average on-peak energy market prices were substantially lower in February 2015 and average off-peak prices also were lower than they had been in the same month in 2014.

Figure 12: Average High and Low Temperatures in Zone C Cities in January and February 2014 and 2015.

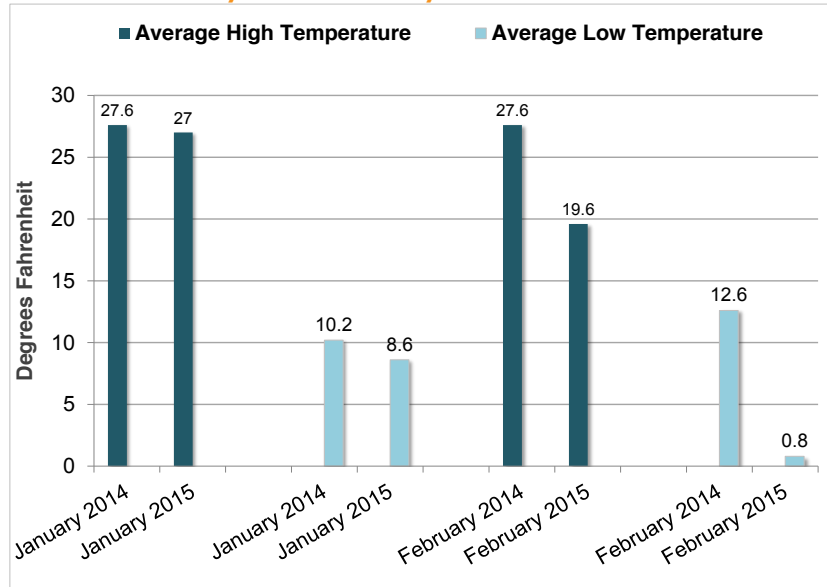
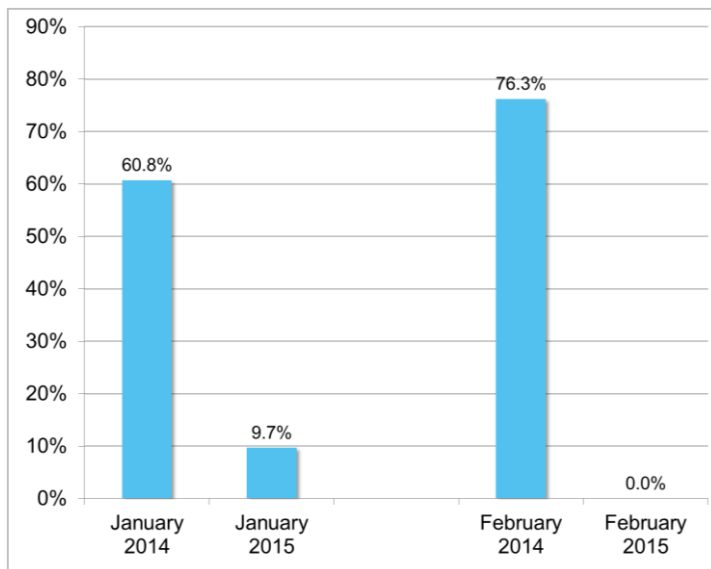


Figure 13: Cayuga Unit 1 Monthly Capacity Factor²⁰ in the Months of January and February 2014 and 2015.



The Cayuga February 2015 Revised Repowering Proposal discusses the Polar Vortex event at length and uses it to argue that the plant's continued operation will provide significant benefits for ratepayers in terms of lower energy market prices and increased fuel diversity. However, as shown in Figures 11 and 13, NYISO Zone C had lower energy market prices in January and February 2015 despite the fact that Cayuga Unit 1 provided significantly less generation in the month of January 2015 and was completely unavailable for the entire month of February 2015. Thus, it is reasonable to conclude that the lower

Zone C energy market prices experienced in January and February 2015 were not due, in any meaningful way, to the availability of coal-fired generation from Cayuga Unit 1.

¹⁹ These five cities were Auburn, Ithaca, Binghamton, Syracuse and Oswego.

²⁰ The measure "capacity factor" is used to compare the actual amount of power (MWh) generated by a plant during a month or a year with the total amount of power the plant could have produced if it had operated at 100 percent power for all of the hours of the month or the year. The higher the capacity factor, the more power was generated by the plant.

Proposed Transmission Upgrades Would Improve Electric Grid Reliability and Eliminate the Need for the Cayuga Plant

A recent assessment by NYSEG, which was also endorsed by the staff of the Department of Public Service and the Niagara Mohawk Power Corporation Power d/b/a National Grid, shows that both Phase 1 and Phase 2 of the proposed Auburn Transmission Project are needed whether or not Cayuga remains in operation.²¹ Even Cayuga accepts the need for Phase 1 of the Transmission Project. NYSEG's Updated Need Study Report shows that Phase 2 must also be completed to protect against reliability issues if there is an extended outage at the Cayuga units.²² Cayuga is already 60 years old. The Unit 1 fire in January 2015 is expected to keep the unit out of service through some time in August. It is reasonable to expect that additional outages, perhaps extended outages, will be experienced over time as the units will only become more unreliable as they age.

Consequently, the repowering of the Cayuga units, as proposed in the February 6, 2015 Revised Repowering Proposal, would not avoid the cost of either phase of the Auburn Transmission Project.²³ And the completion of both phases of the Transmission Project will eliminate the need for the repowered Cayuga plant within the planning horizon envisioned by the Commission in this proceeding.

Even if the Commission were to conclude—contrary to the recommendations of NYSEG and DPS Staff—that the Phase 2 transmission upgrades are avoidable if the Cayuga units remain online, reliance on the ongoing availability of the Cayuga units entails significant risk to NYSEG ratepayers. First, there is no assurance that Cayuga will not decide to mothball the Cayuga units in the future, if continued operation even with the cash infusion from NYSEG proves unprofitable to the owners. If a repowered Cayuga cannot be operated profitably, the owners can be expected to decide to retire or mothball it, meaning that ratepayers will end up paying for both the repowering and for the full transmission upgrades (as well as potentially another RSSA to subsidize the uneconomic plant's operation while any necessary transmission upgrades are finally completed). Second, as discussed above, given the facility's age and the recent unavailability of one of the Cayuga units due to a fire, which has taken that unit offline for nearly seven months, it is risky for ratepayers to remain dependent on the continuing availability of the Cayuga facility by deferring the Phase 2 transmission upgrades. It would

²¹ *Auburn Transmission Project Joint Proposal*, New York State Public Service Commission Case 13-T-0235, dated June 15, 2015; *NYSEG's Auburn Transmission Project – Updated Need Study Report*, dated January 30, 2015; *July 31, 2015 Prepared Testimony of Edward C. Schrom, Jr.*, on behalf of the Staff of the New York Department of Public Service.

²² *Id.*

²³ National Grid also has decided that its work to reconductor the Clay-GE #14 line will now be required regardless of the status of the Cayuga plant. New York State Public Service Commission Case 10-E-0050 – Proceeding on Motion of the Commission as to the Rates, Charges, Riles and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service, *Five-Year Transmission and Distribution Capital Plan*, dated January 31, 2014, at pages 18 and 19.

clearly be more economic for NYSEG's ratepayers to pay for the transmission upgrades now and eliminate the need for the Cayuga plant.

The Benefits from the Proposed Repowering Claimed by Cayuga's Owners Are Illusory or Unsubstantiated

The Company's Owners, Not NYSEG's Ratepayers, Would Benefit from Lower Generating Costs

In its February 6, 2015 Revised Repowering Proposal, Cayuga Operating Company claims, without any supporting evidence or analyses, that during a natural gas price spike, "production cost savings" associated with a repowered Cayuga plant "would be approximately \$17 million in one season alone."²⁴

Independent of the correctness of this dollar figure, under the proposed agreement, the potential \$17 million "savings" would accrue to the Cayuga Operating Company, not to NYSEG's ratepayers. The calculation is based on the difference between Cayuga's cost of producing power versus the high cost at which it would be able to sell that power during a major price spike, such as occurred during the 2014 "polar vortex." Because the proposed repowering agreement assigns all energy sales revenues to Cayuga Operating Company, however, customers would not receive any of the purported \$17 million in "savings."

The only circumstance in which Cayuga would provide any production (or energy) cost savings for NYSEG's ratepayers would be if the plant's operation lowered the energy market clearing price in NYISO Zone C. However, Cayuga Operating Company has not produced any evidence that energy market prices have been, or at any time in the future will be, any lower due to Cayuga's continued availability. Nor do we believe this is likely given the projected excess capacity in both Zone C and upstate New York.

²⁴ Revised Repowering Proposal at 29.

Claimed Capacity Costs Savings Are Speculative

The capacity cost savings that Cayuga claims would be produced by the continued availability of the plant are also very speculative. Capacity prices are determined through auction results that are based on the complex interaction of future loads and resources; future loads will be based on such factors as energy efficiency savings, weather conditions, and levels of economic activity. Future resources will be based on what new fossil and renewable capacity is added and which existing facilities, if any, are retired. Consequently, it is very difficult, if not impossible, to determine years in advance what impact the mothballing or retirement of Cayuga would have on future capacity prices in the New York Control Area.

The 2015 NYISO Load & Capacity “Gold Book” Report lists a total of more than 4,600 MW of proposed generator additions by 2019.²⁵ If only a small fraction of this proposed capacity actually is added, it will more than offset the impact of Cayuga's retirement. For example, the recent summer period capacity auction for the New York 'Rest of State' has resulted in lower prices (\$3.50 per kilowatt-month in 2015 vs. \$5.15 per kilowatt-month in the summer of 2014) as a result of the availability of new and repowered generating capacity.

In particular, the Reforming the Energy Vision strategy can be expected to keep future capacity prices lower both by reducing future NYISO system loads and by increasing the MW of future renewable resources in New York State. For example, the NY-Sun Initiative is expected to result in 3,000 MW of installed solar capacity by 2023.²⁶

Fuel Diversity

Fuel diversity is obviously a desirable goal. However, when evaluating a single project like the proposed Cayuga repowering, it is important to consider how much diversity that project actually would provide, along with the economic and environmental costs of achieving that diversity.

Cayuga claims in its February 6, 2015 Revised Repowering Proposal that the dual-fuel repowered Cayuga plant will provide some \$17 million, in nominal dollars, (\$14 million in NPV) in fuel diversity benefits.²⁷ However, Cayuga does not provide any analysis or supporting evidence or even an explanation for this claim.

In fact, even if Cayuga's claim is correct, which is highly doubtful, under the Revised Repowering Proposal NYSEG's ratepayers would be paying another \$145.5 million in Cayuga for only a relatively minor amount of fuel diversity and, as explained earlier, any production

²⁵ Table IV-1 on page 68.

²⁶ *2015 New York State Energy Plan, Volume 1*, at page 26.

²⁷ Page 2 and Attachment 1 to the Revised Repowering Proposal.

cost savings that might result from such diversity would likely provide additional profits for Cayuga's owners rather than any lower energy costs for customers.

For example, Cayuga Unit 1 generated a total of 150,460 MWh in January and February 2014. If Unit 1 had not been available in January or February of that year, and all of its output instead had been produced by gas-fired facilities, the amount of natural gas used in New York State to generate electricity would have increased by only about 2 percent. The total amount of natural gas consumed in those months for all end-use purposes in the state would have increased by only about 0.48 percent. Consequently, continued availability of Cayuga Unit 1 as a coal-fired option would not provide a significant amount of fuel diversity to the NYISO system. Moreover, the state's fuel diversity actually would be *reduced* because Unit 1 would be burning natural gas most of the time and Unit 2 would be burning gas all of the hours when it was generating power.

Moreover, as was noted earlier, energy market prices were lower in the months of January and February 2015 than they had been in the same months in 2014 even though (1) the weather was colder in January 2015 and significantly colder in February 2015 and (2) Cayuga Unit 1 only was available for less than one-half of January 2015 and was not available at all in February. This suggests that the limited fuel diversity provided by being able to burn coal at Cayuga Unit 1 does not provide meaningful energy cost savings for ratepayers.

In addition, any assessment of the fuel diversity benefits that would be provided by a dual-fuel capability of Cayuga Unit 1 must consider that any future operation of Unit 1 on coal would result in higher emissions of CO₂ and other criteria pollutants. In addition, it is important to consider whether there are more permanent alternatives for increasing fuel diversity at lower cost and with less of an adverse environmental impact. Increased expenditures on energy efficiency and renewable solar and wind would be more in line with the state's policy as set forth in the REV strategy and provide a better long-term alternative for diversifying New York's fuel mix than continuing to spend almost \$15 million a year, on average, for ten years, to keep an aging coal plant available.

Conclusion

The New York Public Service Commission should reject the proposed repowering of the aging coal-fired Cayuga Plant as a natural gas plant. The proposed repowering would require an additional \$145 million subsidy from NYSEG ratepayers from 2018-2027, over and above the \$120 million they are already paying under the RSSA 1 and 2 agreements. Transmission upgrades to improve reliability will be needed whether or not the plant is retired.

Appendix

OPTIONS FOR ADDRESSING THE ECONOMIC DEVELOPMENT AND COMMUNITY IMPACTS OF RETIRING THE CAYUGA POWER STATION

The potential closing of the Cayuga Power Station creates two clear challenges for Tompkins County and the Town of Lansing: the loss of tax revenue and the loss of employment. These challenges occur at a time when the communities involved can avail themselves of four important assets that can be drawn upon to mitigate the fiscal and employment impacts. First, the State of New York started this fiscal year with a \$5 billion surplus. It is expected to remain in surplus for at least the next four years. Second, the state has recognized it is now time for substantial investment in its energy grid – power plants, transmission and distribution lines and other energy resources. The Governor has set aside between \$1 and \$2 billion for these projects. Third, the New York Power Authority (NYPA) is also in solid financial shape. For the past three years it has provided annual contributions to the state from its surpluses averaging \$120 million. This past fiscal year it also had a cash balance of \$252 million. NYPA has also been identified as playing a lead role in Governor Cuomo's new Energy Highway for New York. Fourth, Tompkins County and the Town of Lansing are areas that have enjoyed steady, modest growth amidst the more generalized upstate economic storyline of departure and decline. Tompkins County has a robust capital budget that could be accelerated to fill gaps in the construction markets should the plant be closed.

The four resources combined offer a solid set of investment choices from both the public and private sector. In the aggregate they represent several billion dollars in available, undesignated budget resources. These resources can turn the closure of the Cayuga plant into an opportunity to solve short term problems for employees, taxpayers and local governments and set a course for continued economic progress in the county.

The bottom line:

- As many as 70 employees and their families would need to find new places to work.
- A \$1.8 million annual tax revenue loss would need to be replaced.
- A new development concept for the plant site would need to be developed and provided with resources to forge a constructive alternative.

The transition investments outlined in this report are not a question of available resources. The state budget and fiscal resources of NYPA and other energy related organizations in the state plus the new energy policy mandates of this administration provide the right tools to do the job. The question is whether state and local governments consider the issues presented by the Cayuga plant closing a priority as they manage the new energy highway.

Background

According to the owner the Cayuga Station, Upstate New York Power Producers and its subsidiary Cayuga Operating Company, LLC., the repower project would create new employment. "Cayuga estimates that the repowering project would initially create a total of 118 predominantly – union jobs to install and construct a new gas pipeline and to modify the Cayuga facility to allow it to operate on natural gas."²⁸

In addition, Cayuga Operating Company estimates the repowered plant will create a permanent base of 30 jobs.²⁹ The plant currently has approximately 70 employees.³⁰ Based upon the data that is publicly available IEEFA estimates that the repowering project would result in an estimated loss of 40 jobs at the plant. A full, complete and current statement of employee levels at the plant would assist the public dialogue going forward.

Due to the presence of Cornell University, other educational institutions and a relatively strong manufacturing base, Tompkins County and the Town of Lansing currently boast the lowest unemployment levels in the State of New York.³¹ The question for transition planning is: what kind of economic activity can be counted on to produce a reasonable level of construction and permanent jobs to replace the estimated employment from the coal plant's closure?

Employment Implications

Local officials in Tompkins County and the Town of Lansing and business and labor leaders will need to address two issues as the Cayuga plant is closed. First, the proposed repowering plan estimates that construction jobs will be created by the project. If the repowering project does not go forward these anticipated construction jobs will not materialize. Second, as noted based upon publicly available data, there are 70 permanent jobs at the plant and the repowering project would reduce that number by approximately 40 jobs. If the plant closes without repowering, all 70 jobs would be lost.

A. Construction Jobs

If the plant is closed and the construction does not take place the State and County can cooperate to replace some of the construction jobs that would have been created in the 2015-2017 construction period in the repowering plan. The replacement projects are already

²⁸ Cayuga Operating Company, LLC., *Repowering Proposal: Revised Repowering Proposal*, February 6, 2015, p. 25. (Repowering Revised, p. 25). See also: Camoin Associates, *Cayuga Operating Corporation, Repowering Plant Economic Impact Analysis*, April, 2014, p. 4. The Camoin study places the number of construction jobs at 109 of which only 46 are direct construction jobs.

²⁹ Repowering Revised, p. 25.

³⁰ Navigant Consulting, *Cost of Service Analysis Supporting Reliability Must Run Costs for the Cayuga Generating Station*, Salary/Comments, November 8, 2012, p.6. The Navigant study assumes 70 employees: 59 union employees and 11 salaried. A more recent estimate of existing jobs places the number at 63 employees. See: <http://www.nyenergyhighway.com/Content/documents/44.pdf>, p. 7.

³¹ <http://www.labor.ny.gov/stats/pressreleases/prlaus.shtml>

well along in the planning stages and can be accelerated to enhance the construction industry in the area. The construction sector in Tompkins County is expected to grow by 2.2 percent annually over the next five years³² and be the fastest growing sector in the county economy. Tompkins County employment in the construction industry over the last five years has exceeded the rate of growth at both the state and national levels.

If the plant is closed, a number of issues will have to be addressed at the site, including site control and preparation for the next use, demolition and remediation. Due to the significant number of coal plants being decommissioned in the United States, a new industry based upon plant demolition and resale and reuse is growing that creates jobs.³³ One of the most important resources in the demolition phase is the existing workforce.³⁴ The deconstruction and remediation phase of the project is also a job production activity. The economic development studies conducted for this project do not assume any job retention during this phase of the plant closing.

While the broad trends are promising some local elected officials have pointed out that many members of the construction trades who reside in the County are not hired when large developments commence construction. The topic is troubling and a number of Ithaca Common Council members are working to rectify the issue.³⁵

County Capital Budget

Tompkins County government plans and implements capital construction projects from a long term 20 year capital plan³⁶ that is presented in five year increments and updated annually in the County budget.³⁷ The current five year plan anticipates capital spending of \$51 million³⁸ over the next five years through a series of federal, state and locally financed projects. Several projects worth approximately \$17.46 million on the drawing board with allocated dollars slated for construction in the 2017-2019 could be accelerated as a way to stimulate additional construction activity. As shown below there are road projects, facility improvements, airport rehabilitation and solid waste projects with aggregate budgets of over \$17.46 million in the 2017-2019 period that could be accelerated.

³² <http://tompkinscountyny.gov/wfny>, Workforce Dashboard March 2015, slide 8.

³³ <http://www.powermag.com/tricky-business-taking-down-old-coal-plants/?pagenum=3>

³⁴ <http://www.envirocon.com/2014/lessons-learned-power-plant-decommissioning-demolition-ryan-hope/>

³⁵ <http://ithacavoices.com/2015/05/ithaca-council-member-to-seek-reelection-wants-focus-on-infrastructure/>

³⁶ <http://www.tompkinscountyny.gov/news/legislature-approves-update-20-year-capital-plan>

³⁷ http://www.tompkinscountyny.gov/files/ctyadmin/Budget/documents/2015/2015_Adopted_Budget.pdf, Section 3, p.2.

³⁸ Id.

Figure A1: Projects with Potential for Acceleration Per Current Five Year Capital Plan³⁹

Capital Projects	Amount	Current Plan date for construction
Coddington Road Project	\$5,730,000.00	2019
Freese Road Project	\$1,847,000.00	2018
Facility Restoration Capital Maintenance	\$800,000.00	2019
Airport Expansion	\$8,000,000.00	2017-2019
Solid Waste Upgrades	\$730,000.00	2018-2019
Road and Bridge Improvements	\$3,000,000.00	2018-2019
TOTAL	\$17,459,000.00	

With state and federal support other projects in the 20 year plan could be drawn forward at an accelerated rate to support additional construction over the 2015-2017 period. If necessary, state support can be provided either on a temporary, permanent, or project swap basis to help cover any necessary local shares of cash participation on an accelerated basis.

This review has not surveyed the various capital budgets of New York State and relevant public authorities. Such a review should take place in order to identify other public sector infrastructure investments that might be moved into the construction phase during the 2015-2017 period. For example, the Town of Lansing has proposed a number of new sewer projects over the last several years.⁴⁰ The projects did not come to fruition. The State and town officials could work together to create a new plan for sewer line construction that supports local economic development goals over time.

Cornell University

In upstate New York, Cornell University is the hub of 21st century economic innovation. The University maintains a robust portfolio of capital expansion projects.⁴¹ With proper support the University, labor and state officials could map out an acceleration of some of the larger projects like the expansion of the law school. In addition, the University serves as an incubator for business growth in the area.⁴² Business growth in the area is quite positive and often includes new expansion investments by local companies, all of which can be supported in various ways by state and local government.⁴³

³⁹ Id.

⁴⁰ <http://www.lansingstar.com/opinions-archive/11877-analysis-10-years-of-lansing>

⁴¹ <http://www.fs.cornell.edu/fs/projects/intro.cfm>

⁴² The University also offers at least nine different programs related to renewable energy. To the degree these programs discuss the use of coal they emphasize carbon capture and sequestration technology, a process not associated with any aspect of the Cayuga Lake coal plant upgrade. <http://www.acsf.cornell.edu/research/energy.php>

⁴³ <http://ithacavoices.com/2015/06/3-ithaca-companies-in-1-sector-to-create-125-new-jobs/>

B. Permanent Employment in the Energy Industry

Given adequate notice and the right kind of support 70 employees at the current plant should be able to be absorbed into the local and upstate energy job markets or broader economy. If the repowering initiative is approved, presumably 30 employees could remain at the plant and 40 will be re-entering the job market. It is unclear how employment retention would be handled by Cayuga Operating Company. What is needed whether the plant is closed or not is a plan to assist people who might lose their employment at the plant. An investment of resources by the County Workforce Board and supported by local government and unions can be designed to assist any laid off employee in need of new employment in the energy sector and more broadly in the economy within the area.

Most of the major energy-related public and private companies in upstate hire regularly. For example, NYSEG currently has 29 energy-related employment opportunities available.⁴⁴ The New York Power Authority has 55 jobs posted on its website.⁴⁵ The New York State Energy Research and Development Authority (NYSERDA) currently has postings for 29 job opportunities in the field.⁴⁶ Often these websites advertise not only their own employment opportunities but those in related companies such as General Electric, Siemens, Oracle and other large and small employers. Many of these companies have contractual relationships with the state power authority and energy agencies.

The State, the Tompkins County Workforce Board⁴⁷ and local labor unions could receive financial support to provide ongoing job-seeking or job-training assistance to workers in the current plant. The same apparatus could help insure that local construction workers are hired on large scale development projects where developers come from outside the region.

Solarize Tompkins County and Solar Tompkins have enabled 400 families to invest in residential solar retrofits. This ongoing effort is spurring business and employment in the County. For example over the last four years one solar installer has hired nearly 60 new employees and plans to hire nearly three dozen more by the end of 2015."⁴⁸

C. An Economic Development Opportunity

The Cayuga Power Station has been located in its current site on Cayuga Lake since 1955. If the plant closes, a "request for information" on alternative uses could be issued by the appropriate authorities. A significant component of any such plan would be the dismantling of the plant and clean-up of the site. The current energy use of the site offers potential advantages for a large scale renewable energy reuse of the site. A cleaned up site on the lake offers a very real return proposition from an economic development perspective.

One entity capable of handling the planning, financial and technical issues is the New York Power Authority (NYPA). NYPA has both the financial and energy planning resources to

⁴⁴ <http://www.indeed.com/jobs?q=Nyseg&l=New+York&start=10>

⁴⁵ https://nypa.silkroad.com/epostings/index.cfm?fuseaction=app.allpositions&company_id=16007&version=1

⁴⁶ <http://www.indeed.com/jobs?q=Nyserda&start=20>

⁴⁷ <http://tompkinscountyny.gov/wfny>

⁴⁸ <http://ithacavoices.com/2015/06/rapidly-expanding-ithaca-solar-company-sees-725-percent-job-growth-in-4-years/>

spearhead redevelopment. A recent study by the New York State Comptroller highlights the pivotal role that NYPA plays in upstate New York's fiscal and economic affairs beyond the provision of affordable electricity, stating, "It is not unusual for the State to rely on NYPA to meet its energy and economic development goals."

NYPA's finances are strong. Last year the authority achieved net income of \$262 million, even after making significant voluntary contributions to the State of New York.⁴⁹ In its 2014 Annual Report the Authority lists a number of development fund pools and highlights numerous development projects that it is spearheading throughout upstate New York.⁵⁰ The Comptroller's report also identifies significant recurring annual contributions by NYPA to the state General Fund (\$70 million per year over last three years and \$386 million in 2008-2009)⁵¹ and offers a brief outline of NYPA's financing of energy related projects including \$1-\$2 billion as yet unspent in the Governor's Energy blueprint dedicated to power plant retirements.⁵²

NYPA and local officials can work together to: 1) identify potential uses for the plant; 2) devise the best plan for site preparation and cleanup (a source of additional employment), and 3) work through any new land use strategies consistent with the outcome of these deliberations. The state also designate NYPA as the lead agency to oversee the clean-up and redevelopment of the site. This would include making provisions to secure the site once it is closed, assisting with cleanup activities (which would provide employment opportunities), site preparation, soliciting reuse proposals, working with the community on reuse proposal priorities and financing (or assisting with arrangement of financing) and development of a new use for the site.

Lansing also has other economic development opportunities that could benefit from additional state attention. The state-owned property that was formerly the residential school for girls has been the subject of development attention from businesses and from its owner the Office of Family and Children Services.⁵³ While some development attention has been shown the state has failed to follow through and work with town officials to offer a real set of options for an ideal site. A solid development plan for the site can yield not only short term construction jobs but long term employment and a boost to the tax base.

Fiscal Needs

The loss of the Cayuga Power Station poses a fiscal challenge for the Lansing school district, Tompkins County, the Town of Lansing and two service districts. If the plant were to close there would be an immediate annual loss of \$1.8 million.

⁴⁹ NYPA, 2014 Annual Report, See page 59 for net income and page 33 for a description of multi-year payments to New York State.

⁵⁰ NYPA Annual Report, p. 6.

⁵¹ An earlier Comptroller audit of 2005 and 2006 financial performance of the authority's Niagara Power Plant performance showed a cumulative 2 year surplus of \$200 million.

⁵² Comptroller Report, p. 13.

⁵³ <http://www.lansingstar.com/news-archive/11046-girls-correctional-facility-for-sale>

Several fiscal resources are available and can be drawn upon to manage the shortfalls created by the plant closure. First, the State of New York can mitigate the loss of revenue for all participants. In FY 2015-2016 the state started with a \$5 billion budget surplus. The Executive Budget five-year financial plan projects fiscal balance or surpluses over the next four years.⁵⁴ The surpluses are far smaller than the current \$5 billion, but the state's finances are in reasonably stable shape. The recent legislative session ended with the passage of a piece of legislation that has appropriated \$19 million to assist cash strapped municipalities and school districts faced with revenue losses from plant closings.

Figure A2: Projected Tax Payments

Jurisdiction	2015-2016 Projected Tax Payment
Lansing School District	\$1,269,000.00
Tompkins County	\$411,927.00
Town of Lansing	\$86,177.00
Fire Department	\$54,169.00
Library	\$9,162.00
Total	\$1,830,435.00

Second, NYPA is expected to play a significant role in the Governor's Energy Highway Blueprint,⁵⁵ with planned allocations in the range of \$7 billion for various projects.

Third, the Lansing school district has discussed spending down school district reserves⁵⁶ in the event of a plant shut down. The result of this step would be to deplete the district's cash reserves in a relatively short period of time. Such a plan is an unnecessarily risky strategy. The district has already absorbed over \$2 million in annual revenue losses.⁵⁷ While the school district has managed these losses well the tax rates for homeowners are in the upper range of school districts for the county and have crept up relative to other surrounding districts.⁵⁸ The assessed valuation of the plant has declined over the years as the plant has become less profitable. Currently the tax payments are set through an annually negotiated PILOT payment.

Options

The closing of the Cayuga plant is part of a much bigger energy trend in NYS and the United States. The Governor's Energy Highway proposal acknowledges the need for a new era of energy planning in the State. The costs involved with these changes can be borne by local governments, but that approach would be unnecessarily narrow and burdensome. This report recommends a state-financed set aside of \$5.5 million⁵⁹ to be paid over the next five years in

⁵⁴ <https://www.budget.ny.gov/pubs/executive/eBudget1516/financialPlan/FinPlanUpdated.pdf>, p.12. According to the first quarter financial plan update the 2015-2016 remains in balance and surpluses are projected for the balance of the financial plan. The first quarter of the fiscal year produced \$1.9 billion in cash above budgeted estimates.

⁵⁵ <http://nypa.gov/about/documents/2014-FinancialReport.pdf>, see discussion on page 35.

⁵⁶ See discussion starting at 33:15 of <https://www.youtube.com/watch?v=FOPj9yQ-QJc&feature=youtu.be>

⁵⁷ <http://www.lcsd.k12.ny.us/cms/lib/NY01001015/Centricity/Domain/5/Budget%20Hearing%202015%20Presentation.pdf>, p. 12.

⁵⁸ Lansing School District, *Tompkins County Assessment School District Tax Rates, 2003-2015*, undated spreadsheet.
⁵⁹ We use the currently available baseline of \$1.8 million established for the 2015-2016 and reduce it by 20% each year for five years. Since the plant has been losing money and taxing jurisdictions have been managing this financial

declining increments to the affected entities. The specific financing could come from the following source(s):

State Funding of Schools

The Basic Aid Formula (state education aid) guides the distribution of state dollars to school districts and creates a baseline revenue level for the Lansing School District. Statewide considerations may preclude the formula from being used to provide the revenue support needed in this case. However, the loss of property tax revenue can be offset by a solid plan that combines any remaining property tax revenue from the plant with current and future state aid to education and other education program related appropriations. Due to the state GAP Elimination Adjustment the Lansing School district has lost more than \$6 million in state aid over the past five years. Limiting or eliminating future GAP cuts could mitigate the loss of taxes due to the closure of the plant.⁶⁰

New York Power Authority and Governor's Energy Highway

An important part of any new energy vision is recognizing that legacy assets must be managed effectively. One of the financial legacies of existing power plants in New York State is local government reliance on plants as large taxpayers for school districts, local and county government. As part of a broader transition plan for Lansing and Tompkins County, NYPA could provide some or all of the \$5.5 million needed over the next five years to offset the revenue losses from the plant shutdown.

Recent State Appropriation

State legislative leaders and the Governor ended the 2015 legislative session with the passage of a bill that covered several critical issues facing the state. One provision of the bill⁶¹ provides up to \$19 million in state funds to municipal corporations and/or school districts where a fossil fuel electric generating facility has closed and caused significant revenue losses for the school district or municipality. Expenditures to local governments can be paid out over a five year period. The funding is to come from contributions by the New York State Energy Research and Development Authority and the New York Power Authority.

failure for a few years it could be advisable to determine a proper fiscal offset to start with a higher baseline reflecting the tax revenue deterioration over the past few years.

⁶⁰ <http://www.lcsd.k12.ny.us/cms/lib/NY01001015/Centricity/Domain/5/Budget%20Hearing%202015%20Presentation.pdf>

⁶¹ Senate- Assembly (S. 6012, A. 8323), Subpart H, Section 1, June 25, 2015.

About the Authors

David Schlissel, director of resource planning analysis for IEEFA, has been a regulatory attorney and a 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 as an expert witness in state and federal court proceedings concerning electric utilities. His clients have included state 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.

Tom Sanzillo, director of finance for IEEFA, is the author of several studies on coal plants, rate impacts, credit analyses, and public and private financial structures for the coal industry. He has testified as an expert witness, taught energy-industry finance training sessions, and is quoted frequently by the media. Sanzillo has 17 years of experience with the City and the State of New York in various senior financial and policy management positions. He is a former first deputy comptroller for the State of New York, where he oversaw the finances of 1,300 units of local government, the annual management of 44,000 government contracts, and where he had oversight of over \$200 billion in state and local municipal bond programs and a \$156 billion pension fund.

Sanzillo recently contributed a chapter to the Oxford Handbook of New York State Government and Politics on the New York State Comptroller's Office.

Cathy Kunkel, an IEEFA fellow, is an independent West Virginia-based consultant focusing on energy efficiency and utility regulation. She has testified on multiple occasions before the West Virginia Public Service Commission for the nonprofit coalition Energy Efficient West Virginia. She has done graduate work for the Energy and Resources Group at the University of California-Berkeley and is a former senior research associate at Lawrence Berkeley National Laboratory. Kunkel has an undergraduate degree in physics from Princeton University and graduate degree in physics from Cambridge University.

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