



NTEC's Plant/Mine Acquisition Plan Puts Navajo Nation at Serious Financial Risk

Little Clarity, No Certainty in Proposal to Take Ownership of Navajo Generating Station/Kayenta Mine

Executive Summary

The Navajo Transitional Energy Company (NTEC) is proposing to acquire the coal-fired Navajo Generating Station (NGS) and its fuel source Kayenta Mine and to continue to operate them after December 2019.

While NTEC has done public presentations roughly outlining its plan for acquisition and subsequent operation of the plant and mine, it has offered little in the way of substantial detail on how it would make the venture profitable.

The plan, such as it is, is rooted largely in speculation and unsupported claims.

The main public information that NTEC has offered on its proposal is a 14-page slide show, "NTEC Strategy for the Acquisition & Operation of Navajo Generating Station and the Kayenta Mine," presented to the Navajo Nation Council on Feb. 13.

An IEEFA analysis of NTEC's presentation finds the plan inherently flawed and concludes that it represents an extremely risky gamble.

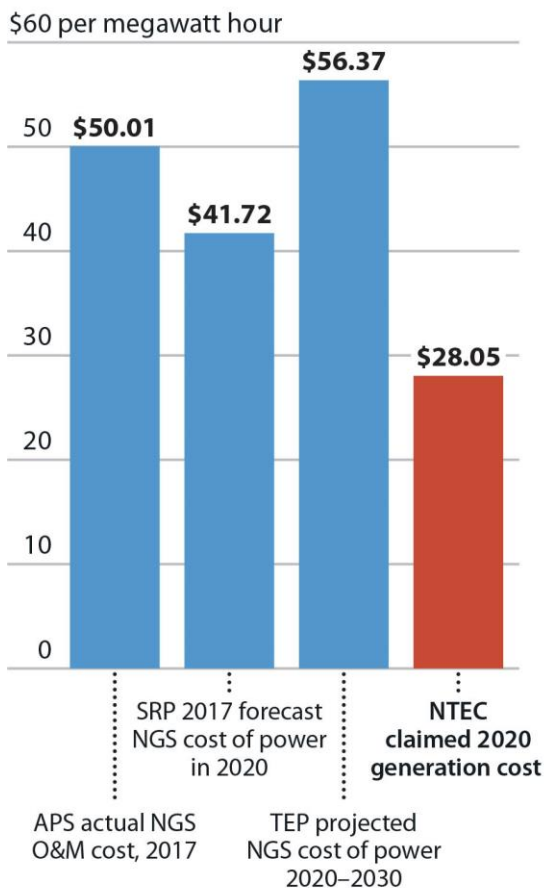
More specifically, NTEC's presentation:

- Includes no evidence of any potential buyers actually willing to enter into contracts for power from NGS at financially viable prices;
- Relies substantially on unsupported assertions that similar mine-plant business models have worked—at one other power plant, in Texas—while omitting any acknowledgement that the same business model has failed at other power plants and that these failures have been attributed to low natural gas prices and increasing competition from renewable resources, the same market forces that have made NGS unviable;
- Lacks any description of the exact steps NTEC would take to achieve its stated goals of reducing plant and mine costs while continuing to operate reliably without causing serious hardship for plant workers and miners;

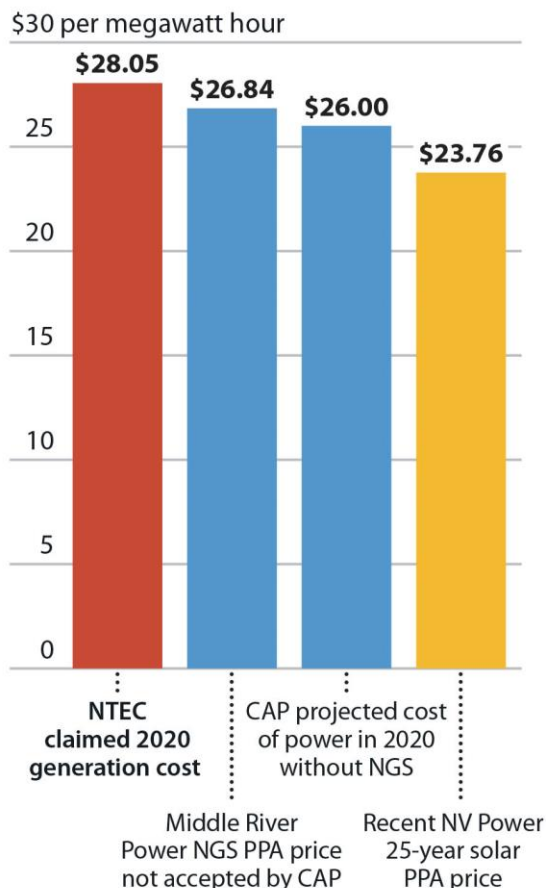
- Does not identify how much NTEC will have to pay to bring NGS up to date on maintenance that has been deferred since early in 2017;
- Makes no case for how anything other than razor-thin profits can be achieved—best case—and avoids any acknowledgement of market forces that will create ongoing risks for NTEC and the Navajo Nation from continuing to operate NGS;
- Does not say how much NTEC would have to pay for the long-term liabilities that will require enormously costly cleanup in and around the plant and mine sites.

As the following charts show, NTEC's plan is premised on two untested assumptions. First, that NTEC will be able to reduce the cost of generating power at NGS after 2019 far below both what it has cost to produce power at the plant and what the current owners have forecasted it will cost in future years. Second, that potential buyers will pay more for power from an NTEC-owned NGS even if there are other cost-competitive options.

NTEC's Projected Cost Is Far Lower Than Other NGS Estimates ...



... But Is Still Higher Than CAP Was Willing to Pay—And New Solar Power



Barring a more detailed and more persuasive business case, IEEFA sees the NTEC proposal as a project that stands little chance of operating NGS and the Kayenta mine profitably or reliably.

The current owners of NGS, who have decades of experience in operating large coal-fired generators and profitably selling large amounts of electricity into the power markets, have concluded that it will be unprofitable to run NGS after 2019.

NTEC, having no such experience, seeks an acquisition that would risk hundreds of millions of Navajo Nation dollars on a gamble that faces long odds.

Table of Contents

Executive Summary	1
A Flawed Business Model	5
Significant Omissions and Misleading Assertions	5
NTEC's Plan Relies on Achieving Significant Reductions in NGS Generation Costs That the Current Owners Could Not Achieve	7
Optimistic Assumptions	8
Deferred Maintenance Costs Are Not Addressed	8
NTEC Fails to Identify Any Potential Buyers Willing to Enter Into Contracts for Power From NGS	8
NTEC's Presentation Shows That Continuing to Operate NGS Beyond the End of 2019 Will Produce Minor Profits, at Best, and Will More Likely Produce Losses	10
NTEC's Presentation Ignores the Significant Risk From Power Plant Aging	13
Conclusions and Recommendations	13
About IEEFA	15
About the Authors	15

Table of Figures

Figure 1: Actual and Projected NGS Generation Costs	7
Figure 2: NTEC's Projected NGS Generation Cost vs. Other Recent Power Offers/Prices in the Southwest	9
Figure 3: NGS and Kayenta Profits with NTEC's Assumed Generation Costs and Forward Palo Verde Hub Prices as of January 29, 2019	10
Figure 4: NGS and Kayenta Losses With Generating Costs Slightly Higher Than in NTEC Business Model and Palo Verde Hub Prices 10% Lower Than Current Forward Prices	11
Figure 5: NGS and Kayenta Losses With Higher Generating Costs Based on TEP April 2018 Projected Cost of Operating the Plant and Current Forward Palo Verde Prices	12

A Flawed Business Model

While NTEC has given a slide-show presentation to the Navajo Nation Council¹ on its proposal to acquire Navajo Generating Station and Kayenta Mine, it has yet to actually publish a detailed and comprehensive business plan for this venture.

Similarly, although NTEC has said that it is conducting a detailed due diligence review of the acquisition of NGS and the Kayenta Mine, it has not published any associated due diligence materials.

NTEC's presentation to the Navajo Nation Council relies on assertions that its business model, in which it would own both NGS and the Kayenta Mine, has been successful at other plants and would allow it to significantly reduce the cost of generating power at the plant from what SRP estimated back in 2017.

However, NTEC's presentation lacks any detail on the exact steps it would take to successfully reduce the cost of generating electricity at NGS and of producing coal from Kayenta Mine—cost reductions that would be essential for the plan to work.

Nor does the plan say how NTEC would profitably market the power from the plant, or reveal what its plan would cost in terms of layoffs and employee pay and benefit cuts.

Significant Omissions and Misleading Assertions

While the slide show asserts that NTEC's proposal is a "proven model benchmarked against, existing, successful facilities," it offers no evidence to support that assertion.

Indeed, quite the opposite is true—dual ownership of a plant and its companion mine does not guarantee profitability.

Vistra Energy retired the 1200MW Sandow 4 and Sandow 5 coal plants, owned by its Luminant Generator subsidiary in Texas, last year even though the plants and the mine serving the plants all were owned by its Luminant subsidiaries. Vistra's press release announcing the Texas retirements noted the underlying market problem for the Sandow units as being economically challenged in the competitive ERCOT market.

The company went on to say that "sustained low wholesale power prices, an oversupplied renewable generation market, and low natural gas prices, along with other factors, have contributed to this decision." Low wholesale power prices, the growing presence of renewable generation, and low natural gas prices are precisely the forces that have made NGS financially unviable too.

Other Luminant-owned coal-fired generators that relied on company-owned lignite mines for years switched to purchasing coal from mines in the Powder River Basin. More important, several of these plants (Big Brown and Monticello) have now been

¹ "NTEC Strategy for the Acquisition & Operation of Navajo Generating Station & the Kayenta Mine," Feb. 13, 2019.

retired, due to the same market forces that Vistra identified when it announced its retirement of the Sandow units.

NTEC asserts also in its slide show that “NTEC’s Contract Miner at the Navajo Mine operates four mines that are vertically integrated with a power plant” and that all four of these operations are “low cost power producers that compete well with natural gas.”

This is simply untrue for at least one of the four operations in question and, unfortunately, that is the only plant for which there is publicly available information. The plant, the Henry W. Pirkey Power Plant in east Texas, is majority-owned/operated by Southwestern Electric Power Company, which reports the plant’s production costs to the Federal Energy Regulatory Commission (FERC) every year as part of its annual Form 1 submission. In 2017, the plant’s average fuel and non-fuel production cost was \$41.33 per megawatt-hour (MWh), a figure that was nowhere near being competitive. Peak hour prices in ERCOT averaged \$28.11 per MWh in 2017. Off-peak hour prices in ERCOT in 2017 averaged \$21.28 per MWh.

The NTEC slide show further claims that the variable operating and fuel costs at Blackstone’s “vertically integrated” Twin Oaks Power Station and Willow Creek Mine in east-central Texas are “in line with NTEC’s NGS/Kayenta model.”

But SNL, the sourced cited for that assertion, does not provide the actual production costs for the Twin Oaks plant and the mine. Instead SNL presents its “Modeled Production Costs,” which are based on a regression analysis that reflects such factors as the age of the plant, its size, location, etc. These “modeled” costs may be higher or lower than actual costs, and without knowing Twin Oaks’ actual variable operating and fuel costs, there is no way of knowing whether the operating costs at that plant are in line with or substantially higher than NTEC’s claims for NGS.

Moreover, although NTEC’s presentation claims, on its opening page, that NTEC is pursuing a “PROVEN” business model and that “NTEC has proven that it can operate a mine, service a power plant, and sell energy into this competitive market,” this is an exaggeration at best.

It is true that NTEC has sold coal from the Navajo Mine in nearby New Mexico to the Four Corners Generating Station, but NTEC has no experience in owning, managing or operating a coal plant, let alone a large coal plant like NGS.

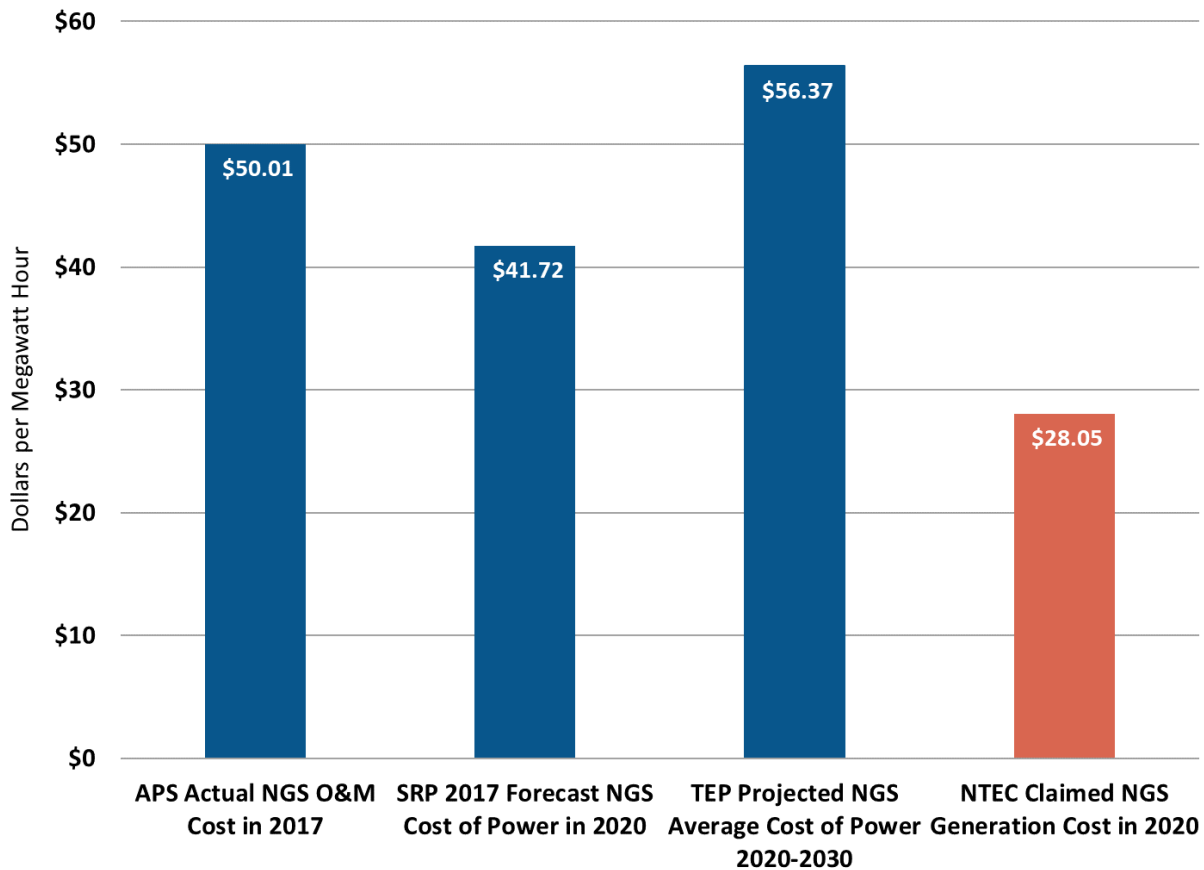
Regardless of whether NTEC can sell power into the market, it is unlikely that it can produce reliable power at NGS at low enough prices to sell that power into the market at a profit—and not a loss.

NTEC's Plan Relies on Achieving Significant Reductions in NGS Generation Costs That the Current Owners Could Not Achieve

As shown in Figure 1, below, NGS has been an expensive plant to operate, a reality that the current owners expect to continue and one that led to their decision to retire the plant at the end of this year.

Figure 1 shows that NTEC is claiming that it will be able to reliably operate and adequately maintain NGS for far less than the current owners have paid in the past and expect to have to pay in the future.

Figure 1: Actual and Projected NGS Generation Costs



NTEC's proposal focuses on the reductions it claims it could achieve from the SRP 2017 Forecast while ignoring actual plant generation costs and TEP's 2018 forecast of NGS's total cost of operations, both of which suggest that future NGS generation costs will be significantly higher than NTEC assumes it can achieve. This is a critical flaw in the NTEC proposal.

Optimistic Assumptions

NTEC assumes that it will be able to reduce NGS's total plant generation and mine costs in 2020 by \$13.67 per MWh, or approximately 33 percent, from SRP's forecasted costs for that year.

For example, at Page 4 of its presentation, NTEC claims that its "vertically integrated" structure will reduce NGS Plant Operating & Maintenance Expenses (O&M) by almost 30 percent from SRP's estimated O&M expense of \$21.29 per MWh to \$15.06 per MWh, but does not say how these reductions will be achieved.

Nor does NTEC explain how it determined that its projected \$11-per MWh non-fuel O&M cost and its \$2.06 per MWh "major repairs" cost, both of which are substantially lower than SRP apparently believes are needed to ensure reliable plant operation, are adequate.

If such reductions could be easily made, as NTEC implies, the current owners, who have decades of owning and operating large coal-fired generators, would have made them already.

Deferred Maintenance Costs Are Not Addressed

Moreover, the current owners of NGS have said that they deferred or eliminated plant maintenance expenditures at NGS in recent years because of their decision in early 2017 to retire NGS at the end of 2019.

These deferrals will most likely affect the future cost of running the plant in at least two ways.

First, the new owner will have to pay to complete maintenance/repairs that have been put off since March 2017- and it is unclear as to whether NTEC includes the cost of doing so in its projected generation costs.

Second, given the needed maintenance was not performed in the last two years, it is reasonable to expect that NGS will face an increased likelihood of requiring major repairs if it continues to run after 2019. Thus, NTEC's projected \$2.06 per MWh cost estimates for these major repairs is most likely far too low. NTEC's own projection that it will spend less on regular O&M costs at NGS after 2019 further heightens the risk that the plant will require costly major repairs as it continues to operate.

NTEC Fails to Identify Any Potential Buyers Willing to Enter Into Contracts for Power From NGS

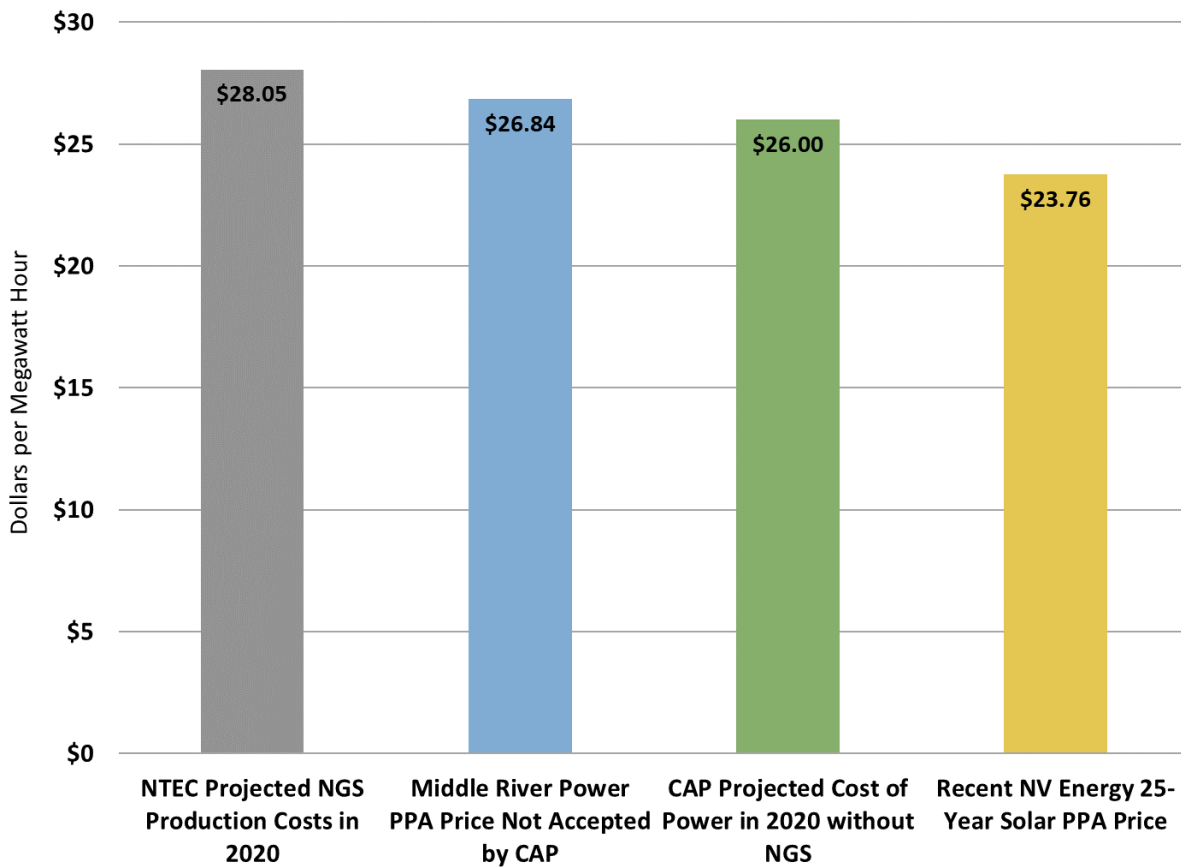
NTEC fails to identify even a single entity that is actually ready to enter into a contract to buy power from NGS after December of this year, which is when the plant is slated to close.

This omission raises the risk to the Navajo Nation is several ways.

First, as large amounts of new renewable resources are added to the grid in Arizona, California and the rest of West, it is quite possible that future Palo Verde Hub energy prices will be substantially lower than suggested by the current forward prices in NTEC's presentation.

Second, while NTEC has said that it will be able to profitably sell electricity from NGS for \$28.05 per MWh, as shown in Figure 2, below, that price would be higher than (a) the price at which Middle River Power offered to sell NGS power to CAP, an offer which CAP did not accept; (b) CAP's expected cost of power in 2020; and (c) the price in a recent long-term solar PPA signed by NV Energy.

Figure 2: NTEC's Projected NGS Generation Cost vs. Other Recent Power Offers/Prices in the Southwest

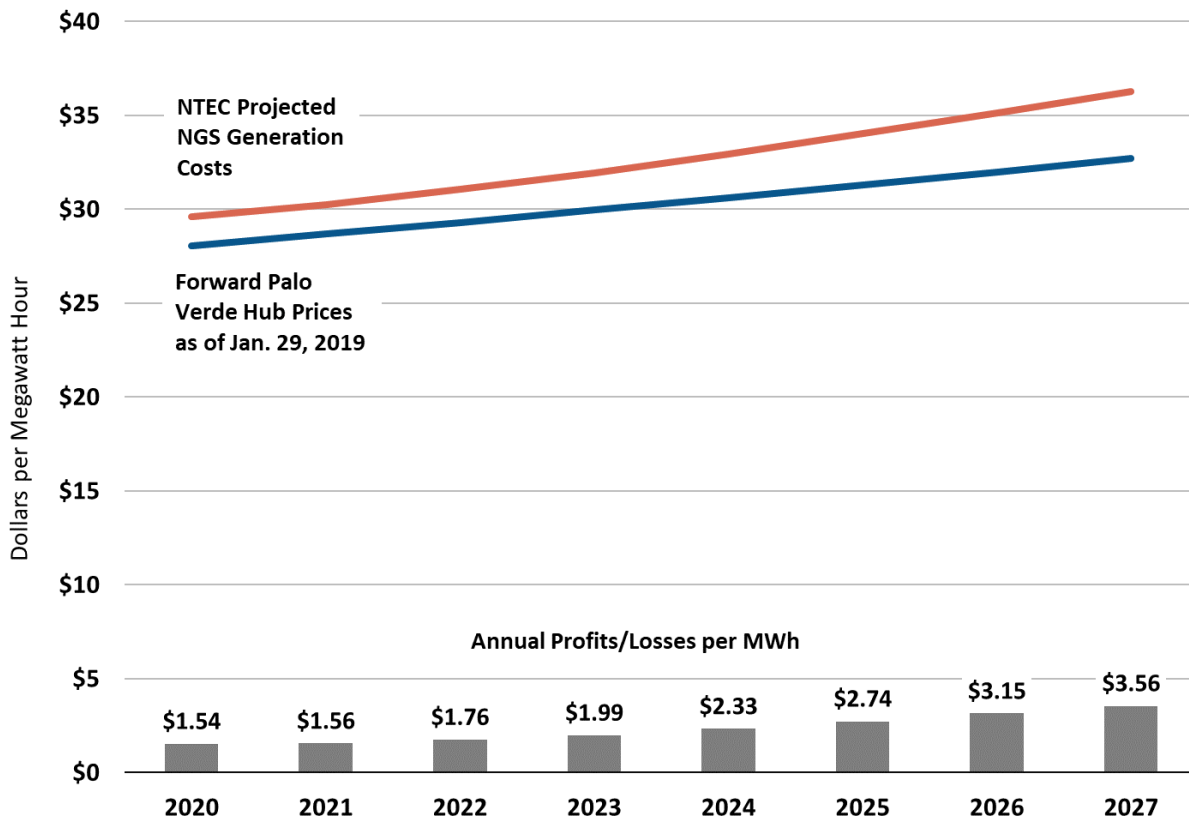


NTEC's Presentation Shows That Continuing to Operate NGS Beyond the End of 2019 Will Produce Minor Profits, at Best, and Will More Likely Produce Losses

Even if SRP's forecast of future NGS generation costs is more accurate than TEP's higher projections, and even if NTEC were to somehow significantly reduce the price of producing power at NGS while paying for long-deferred maintenance, continuing to operate NGS beyond 2019 would produce—at best—very slim profit-loss margins.

This is shown in Figure 3, below, which compares NTEC's assumed annual NGS generation cost for the years 2020 to 2027 with the Palo Verde Hub forward prices included in NTEC's presentation.

Figure 3: NGS and Kayenta Profits with NTEC's Assumed Generation Costs and Forward Palo Verde Hub Prices as of January 29, 2019

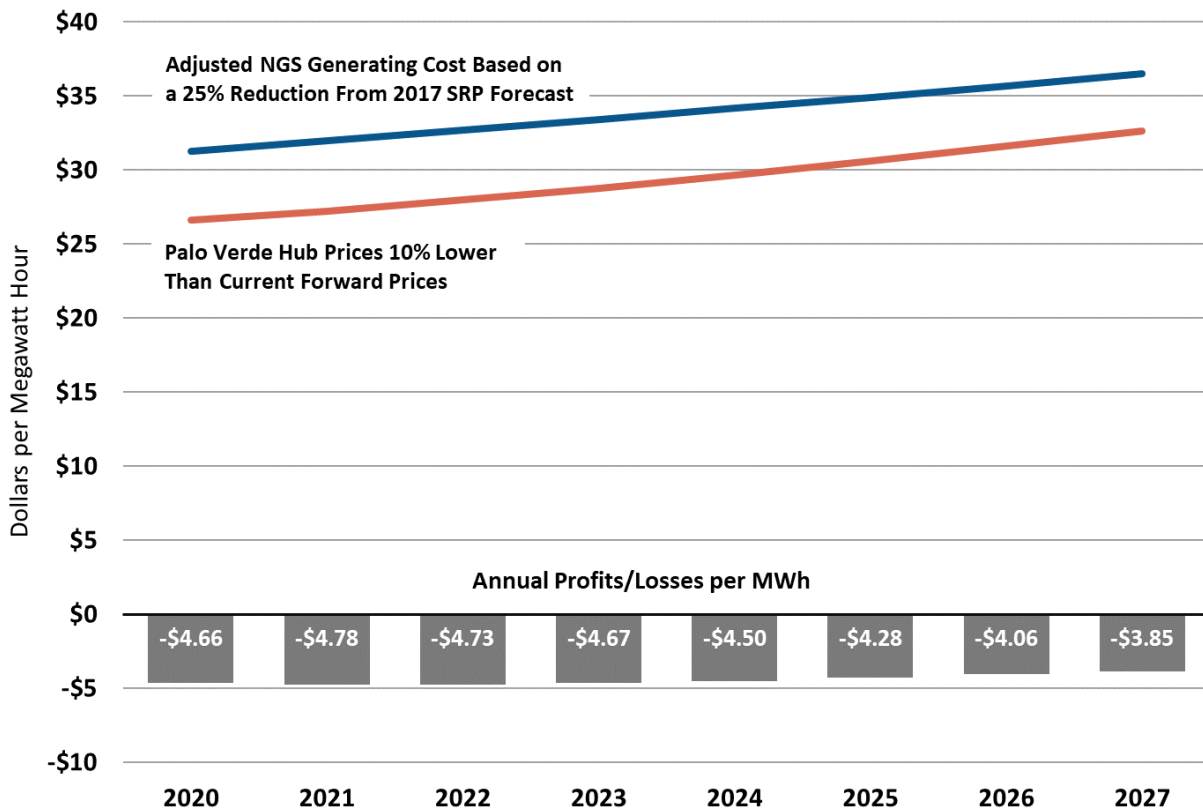


Thus, as shown in the bars at the bottom of Figure 3, NTEC’s profits from selling the power from NGS are likely to be minor—at best—that is, less than \$3 per MWh as late as 2025, and this assumes that everything goes as NTEC now projects.

In fact, the margin for making a profit at NGS under NTEC’s proposed plant/mine acquisition plan is so small that if future plant generation costs are even slightly higher than NTEC now claims² and/or energy prices at the Palo Verde Hub are only slightly lower, continuing to run NGS will produce losses, not profits.

The potential losses that NTEC could experience in such circumstances are shown in Figure 4, below, which assumes—optimistically—that NTEC would be able to achieve a 25 percent reduction in the cost of generating power at NGS while Palo Verde Hub prices would be 10 percent below current forward prices.

Figure 4: NGS and Kayenta Losses With Generating Costs Slightly Higher Than in NTEC Business Model and Palo Verde Hub Prices 10% Lower Than Current Forward Prices

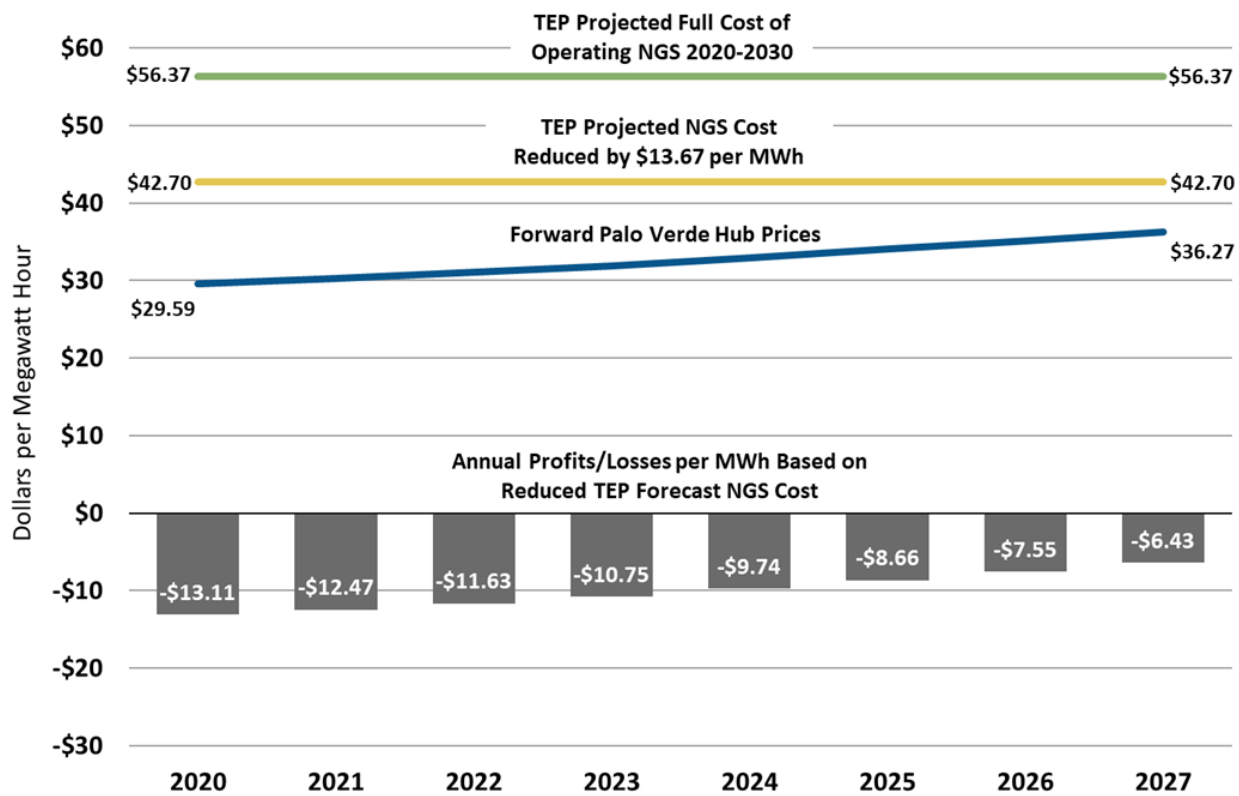


² For example, while NTEC *might* be able to reduce the total costs at NGS and the Kayenta Mine, it might not be able to reduce them by the full \$13.67 per MWh that it now claims.

However, the cost of generating electricity at NGS might be much higher—not lower—than NTEC now claims. For example, as noted earlier, Tucson Electric Power (TEP) projects that the average cost of operating NGS from 2020 to 2030 will average \$56.37-per-MWh.³ If plant generation costs are anywhere this high, keeping NGS open after 2019 would prove financially disastrous for NTEC and the Navajo Nation.

In fact, as shown in Figure 5, below, continuing to operate NGS after 2020 could be much higher than the price at which that power could be sold at the Palo Verde Hub, even if NTEC were able to reduce TEP's projected cost of operating NGS during the years 2020-2030 by the same \$13.67 per MWh by which it claims it will be able to reduce SRP's forecast NGS operating cost.

Figure 5: NGS and Kayenta Losses With Higher Generating Costs Based on TEP April 2018 Projected Cost of Operating the Plant and Current Forward Palo Verde Prices



And, as shown by the bars at the bottom of Figure 5, NTEC could suffer very substantial annual losses from continuing to operate NGS.

³ Tucson Electric Power 2018 Action Plan Update, at page 22, April 30, 2018.

NTEC's Presentation Ignores the Significant Risk From Power Plant Aging

The units at NGS are between 43 and 45 years old, making them among the oldest large coal-fired generating plants (400 MW or larger) still in service in the U.S. In fact, a substantial number of large coal plants younger than NGS already have been retired due to failing economics and a number of others are scheduled for retirement over the next four-to-five years.

Why is the age of a coal plant important? Simply, older plants, on average, tend to cost more to operate and maintain and are less reliable.

For example, analyses by the U.S. Department of Energy's Argonne National Laboratory and the National Energy Technology Laboratory have found that coal plant heat rates increase with plant age, while plant availability declines.⁴ A higher heat rate means that the unit burns fuel less efficiently—thereby the plant burns more fuel to produce the same output of electricity which, in turn raises plant fuel and operating costs.

At the same time, older plants tend to cost more to maintain, as equipment and components degrade or fail and must be repaired or replaced.

In addition, older coal plants also tend, on average, to experience more unanticipated problems and have to be shut down more frequently for unplanned outages.

The analyses in Figures 3-5 conservatively assume that NGS would continue to operate reliably after 2019. If the plant does not, or if the plant experiences a major accident or equipment failure that forces one or more units out of service for a significant period of time, the financial impact on NTEC and the Navajo Nation would be far worse than shown above.

Conclusions and Recommendations

Under NTEC's proposed business model—and accepting all of NTEC's assertions about its ability to reduce plant and mine operating costs—NGS and the Kayenta Mine if kept open will produce, at best, minor profits.

What is more likely is that the actual costs of operating NGS and the Kayenta Mine after 2019 will be much higher than NTEC acknowledges.

As a result, NTEC's plant/mine acquisition plan will likely be economically disastrous for NTEC and the Navajo Nation, which could be left bearing hundreds of millions of dollars in operating losses *and* all plant and mine reclamation costs.

⁴ For example, see the [U.S. DOE Staff Report to the Secretary on Electricity Markets and Reliability](#), page 155.

The current NGS owners, with decades of experience running large coal plants and selling power into the Palo Verde market, have said that they cannot make a profit from continuing to run NGS after the end of this year. There is no reason to believe that NTEC can succeed where the current owners have concluded that they cannot.

IEEFA recommends that, before any action is taken, the Navajo Nation Council require that NTEC produces a comprehensive business plan that meets professional standards and that openly addresses the unlimited and uncertain levels of liabilities that would come with acquisition.

About IEEFA

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