

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Tennessee Gas Pipeline Company, LLC)

Docket No. CP22-493-000

Comment of Southern Alliance for Clean Energy

The pipeline that Tennessee Gas Pipeline Company, LLC (TGP) is proposing to construct is based on the claim by the Tennessee Valley Authority (TVA) that it needs a new gas combined cycle (CC) power plant to replace one retiring unit of the coal-fired Cumberland Fossil Plant (CUH). TVA proposed the new gas CC in its flawed Draft Environmental Impact Statement (DEIS) released in April of 2022. Here we will provide a multitude of reasons that TVA's CUF DEIS should not be relied on to assume TVA has a need for a new gas CC, and thus there is not a need for the Cumberland pipeline proposed by TGP. Instead the Federal Energy Regulatory Commission (FERC) should include an assessment of alternatives to the gas CC to replace one unit at CUF retiring between 2026 and 2030. As part of that assessment, FERC should consider replacing the CUF unit with a combination of distributed and large-scale solar, wind either within TVA's service territory or imported to TVA's transmission system, energy efficiency programs, and distributed and large-scale storage both stand-alone and combined with renewable energy projects. TVA's DEIS makes it clear that TVA plans to retire CUF, so comparisons should be made among the alternatives being considered and not to a fictional baseline where CUF continues to operate.

TVA's DEIS lacked transparency and led to an outcome that can only be reached by cherry-picking assumptions. TVA did not consider all available alternatives in its DEIS or present adequate evidence to eliminate alternatives that were not considered. There are at least two reasons TVA has a conflict of interest and should not be performing its own environmental analysis on this decision. First, compensation of TVA's executives will increase if TVA replaces CUF with a new gas CC rather than non-gas alternatives. Second, TVA signed a Precedent Agreement with TGP in August of 2021, before the CUF DEIS was completed. In addition, several governmental entities agree that the TVA DEIS is flawed: the Environmental Protection Agency (EPA), the National Park Service (NPS), the Nashville Electric Service (NES) Board, and the city of Nashville. In addition to these reasons the TVA DEIS should not be relied upon, FERC now has new information about potential alternatives to the proposed gas plant: financial incentives and penalties that are part of the recently enacted Inflation Reduction Act change the costs of replacement options.

I. Background on SACE

SACE is a non-profit organization that promotes responsible and equitable energy choices to ensure clean, safe, and healthy communities throughout the Southeast. Founded in 1985 under its original name the Tennessee Valley Energy Coalition, SACE has championed rate-payer protections and tracked the environmental and energy policies of the Tennessee Valley Authority. Now headquartered in Knoxville, Tennessee, SACE has over 30 years' experience as a leading voice calling for smart energy policies in our region that help protect our quality of life and treasured places. SACE has more than 38,000 members and online activists in the states served by TVA who are concerned about: reducing emissions that contribute to extreme weather from climate change; creating jobs and economic development in the clean energy sector; and

reducing electric bill burdens through effective efficiency programs. SACE intervened in this proceeding on August 17, 2022.

II. TVA's draft environmental impact statement lacks transparent analysis to justify the need for a gas plant

Despite being 449 pages excluding appendices, TVA's DEIS provides little meaningful information to justify choosing Alternative A, the gas CC that is the need for the TGP Cumberland pipeline, over other alternatives studied or not studied. In SACE's comments to TVA on its Draft Environmental Impact Statement (DEIS), we state that TVA "failed to accurately evaluate all options to replace Cumberland and skewed its analysis toward its desired outcome." Instead of rehashing the issues brought up in the DEIS in those comments, we are including them as Attachment A to these comments.

On page 55 of the DEIS it states that "Financial and system analysis indicates that replacement with a CC plant is the best overall solution to provide low-cost, reliable, and cleaner energy to the TVA power system."¹ However, the methods, assumptions, and results of those financial and system analyses are absent from the DEIS. SACE asked for this information through both the NEPA and FOIA processes at TVA. Based on emails with the NEPA specialist on this project, Ashley Pilakowski, SACE learned that TVA used the same modeling software and many of the same assumptions that were used in its 2019 Integrated Resource Plan (IRP) to analyze the costs of the alternatives considered in the CUF DEIS. Those emails and documents are provided in Attachment B. In these emails TVA states that the assumptions used in its 2019 IRP were developed in 2017. Instead of providing an update to the assumptions themselves, all that were provided were the following statements.

¹ TVA Cumberland Fossil Plant Retirement Draft Environmental Impact Statement, April 2022: https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/cuf-deis-report-only-20220421.pdf?sfvrsn=61161246_3.

- “Overnight capital costs (\$/kW) have increased about 15-30% for gas resources and decreased about 20% for solar and 60% for utility battery storage (4hr) resources.”
- “Assumptions used in the Alternative Analysis for the load forecast fall between the Current Outlook and Valley Load Growth scenarios.”
- “Fuel forecasts are closest to the Rapid DER Adoption scenario.”

The statement on changes to capital costs do not indicate what accounts for the range in the increase in gas resources, and whether or not those increases are constant throughout the capital cost forecast or just for the year(s) in which the resources would go online in the Alternatives Analysis. The 2019 IRP load growth scenarios varied widely, with the Valley Load Growth being the highest load forecast and having a CAGR of 2.0% from 2019-2038, which is very different from the Current Outlook load forecast that had a CAGR of 0.1% over that same timeframe.² So TVA has provided a very wide range of potential load forecasts that were used in the Alternatives Analysis without providing the load forecast that was actually used.

² TVA 2019 Integrated Resource Plan, page 4-6:
https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/default-document-library/site-content/environment/environmental-stewardship/irp/2019-documents/tva-2019-integrated-resource-plan-volume-i-final-resource-plan.pdf?sfvrsn=44251e0a_4.

Figure 1. Load Forecasts from TVA's 2019 IRP show a big gap between the Current Outlook and Valley Growth (Highest) Scenarios

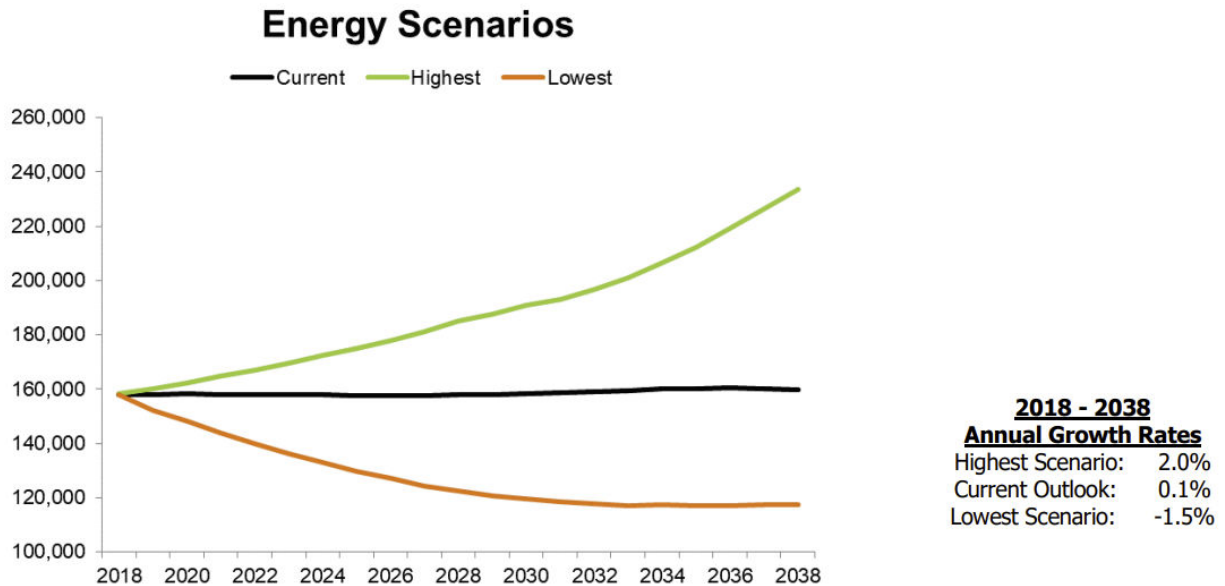


Figure 4-5: Energy (kW-hours) Forecast

Source: TVA's 2019 IRP

Looking back at TVA's 2019 IRP we see that the DER Scenario has the lowest fuel price forecast of all the fuel price forecasts used in the analysis.³ This means that, in the spring of 2022, despite gas prices being currently high and volatile and forward markets indicating they will likely remain high or at least volatile, TVA chose the lowest fuel price forecast it could develop in 2017 to use when evaluating the cost of clean alternatives against building a new gas power plant.

³ TVA 2019 IRP, page 8-13.

Figure 1. Fuel Price Forecasts from TVA's 2019 IRP show the DER Scenario is the Lowest

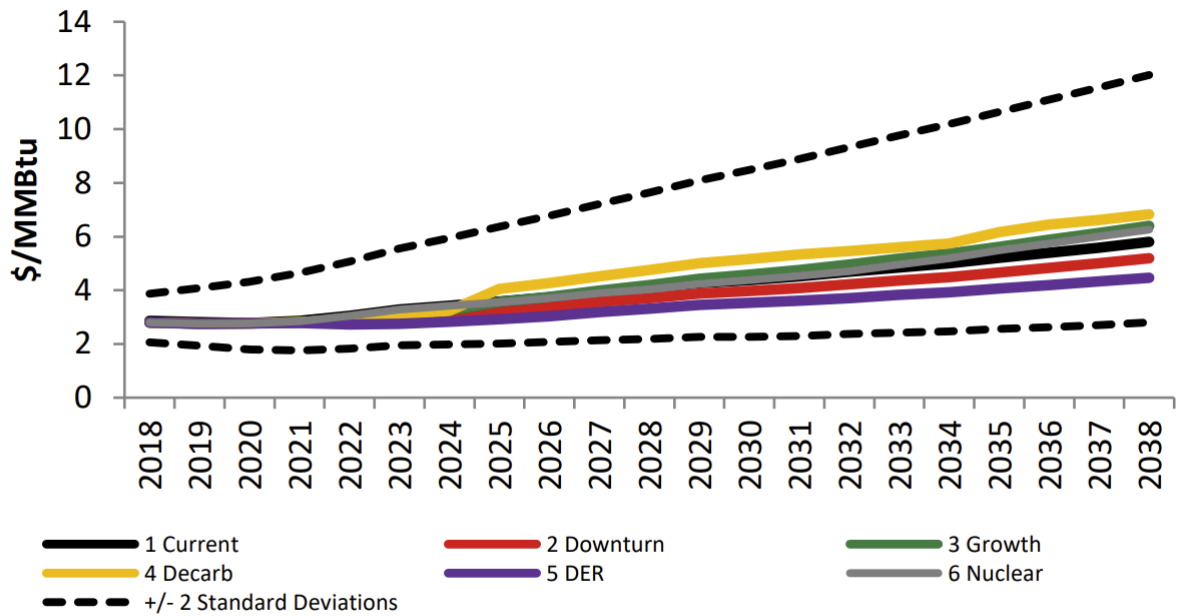


Figure 8-13: Natural Gas Price Assumptions

Source: TVA's 2019 IRP

Because TVA is a federal entity, SACE was able to file a request for documentation of the studies relied on in its CUF DEIS through the Freedom of Information Act (FOIA) as well as make inquiries through the NEPA contact. The language of the requests were nearly identical. TVA responded to the FOIA request 91 days after it was filed with links to the brief “Cumberland Alternatives Analysis” document and TVA’s 2019 IRP, which again do not provide details on the assumptions used to analyze the costs of the alternatives. TVA’s response to that FOIA request is provided in Attachment B. Note that since SACE just received the response to its FOIA related to the DEIS on August 16, 2022, three days before filing these comments, we are still exploring mediation and possible litigation related to this information request.

TVA also justifies the gas plant that the TGP Cumberland pipeline would serve by stating that it did better in “system analysis” without providing any more information about what that system analysis entails and how Alternative A performed better. The DEIS claims that the loss of CUF could result in instability events and jeopardize reliability,⁴ which is perhaps a result of this “system analysis.” But if that is the conclusion it is clear that TVA did not consider the ability of modern smart inverters and energy storage to provide grid services similar to, or in some cases better than, some synchronous resources.

Considering all of this, it is clear that TVA’s analysis of potential resources and portfolios to replace a retiring unit at CUF either relied on outdated or skewed assumptions, or both, and calls into question the need for a gas CC at the Cumberland site, and thus the need for the TGP Cumberland pipeline.

III. TVA did not consider all available alternatives in its DEIS

TVA states that it did not include wind, either within the Valley or imported, because of low wind speeds and high transmission costs.⁵ However, TVA did not model how a combination of in-Valley wind with new, higher hub height turbines, and imported wind could complement the variability of in-Valley solar resources to lower the overall amount of capacity needed to be procured and thus lower the overall cost while improving reliability.

TVA states that it did not include energy efficiency because the programs take time to scale and would be costly at the “levels required to meet the needs of this project.”⁶ It may or may not be cost prohibitive to replace the entire CUF unit with energy efficiency, neither TVA nor anyone else performed that exact analysis. Regardless of whether or not energy efficiency could replace the entire unit, it remains true that some level of energy efficiency would offset the need

⁴ TVA DEIS page 41.

⁵ TVA DEIS page 43.

⁶ TVA DEIS page 43.

for some of the energy and capacity needed to replace one CUF unit. Since TVA is currently lagging the Southeast in energy efficiency savings, a region that lags the country in energy efficiency savings,⁷ and the National Renewable Energy Laboratory estimates there is substantial energy efficiency potential in just Tennessee alone,⁸ it is absolutely reasonable to assume that energy efficiency would be a cost-effective addition to a clean energy portfolio replacement of CUF.

TVA states that distributed solar and storage were not considered because they are more costly than large-scale versions of the same resources.⁹ However, Section 2.1.5.2.4 of the DEIS leads us to believe that one major cost of the large-scale solar and storage alternative is the cost to upgrade the transmission system to integrate in these resources.¹⁰ A combination of distributed and large-scale could easily mitigate the transmission costs associated with this particular portfolio. In addition, TVA should be encouraged by FERC through its Regional Transmission Planning rulemaking to proactively plan and build out its transmission system to

⁷ According to SACE's *Energy Efficiency in the Southeast* report published February 2022 TVA's energy efficiency savings in 2020 were 0.06% of total retail sales, compared to a regional average of 0.20% and a national average of 0.72%. <https://cleanenergy.org/wp-content/uploads/Energy-Efficiency-in-the-Southeast-Fourth-Annual-Report.pdf>.

⁸ NREL's analysis of energy efficiency potential in Tennessee found that replacing electric furnaces with high-efficiency heat pumps in 16% of homes would have a payback period of just over two years and would save over 3 million MWh per year. That one energy efficiency measure alone could replace nearly one third of the expected energy output of the proposed Cumberland gas CC. NREL Restock Tennessee State Fact Sheet: <https://resstock.nrel.gov/factsheets/TN>. Note that with the incentives in the recently-enacted Inflation Reduction Act, energy efficiency measures like replacing electric furnaces with high-efficiency heat pumps, and more, are likely to become more cost-effective for more households, and thus increase the potential for cost-effective energy efficiency savings.

⁹ TVA DEIS page 43.

¹⁰ TVA provides slightly more information on its cost analysis of the alternatives considered in the DEIS in a supplemental document titled "Cumberland Retirement EIS: Alternatives Evaluation." On page 17 TVA states its analysis concluded that Alternative C (the large-scale solar and storage alternative) had a 20-year net present value that was \$2,311 million higher than Alternative A (the gas CC that determines the need for the TGP pipeline project). On that same page it states that Alternative C includes "extensive regional transmission upgrades." https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/cuf_eis_alternativesevaluation_20220423-vfinal21a071b9-0fd1-4a8a-841a-8d9e74ba3ba5.pdf?sfvrsn=a7efe477_5

integrate the renewable energy resources needed to meet the clean energy and climate goals of TVA, TVA's customers, and TVA's neighboring utilities.

IV. TVA leadership has a conflict of interest

In the early 2000s, through federal legislation, TVA's governance structure was changed to more resemble private, investor-owned utilities (IOUs). TVA now has a Chief Executive Officer and a number of named executives. Also like private IOUs, TVA's executives receive most of their compensation through metric-based bonuses or awards. As described in TVA's latest 10-K filing, two of these metrics are tied to the availability factor of TVA's combined cycle and coal fleet.¹¹ So for 2021, if TVA's combined cycle availability factor hit the target of 80.9%, TVA's CEO Jeff Lyash would earn 10% of his total Annual Performance Reward of nearly \$3 million dollars.¹² Meeting the coal availability factor target of 64.0% would earn an additional 5% of that \$3 million.¹³ There are no performance metrics for executive compensation based on renewable or clean energy targets or any environmental or carbon reduction metrics.

TVA has stated that the units at Cumberland in particular present reliability challenges.¹⁴ So removing an unreliable coal unit not only benefits TVA's customers, but also shores up TVA's executives' ability to make more money individually. This performance metric is doing what it is designed to do: incentivize TVA's executives to work in the best interests of TVA's customers. However, adding a new large combined cycle to TVA's fleet will also shore up the combined cycle availability factor performance metric, whereas replacing CUF with solar and storage does not

¹¹ TVA 10-K FY2021, filed November 15, 2021, page 185.
https://s25.q4cdn.com/191816265/files/doc_financials/2021/12/02/2021-10K-Final-Draft.pdf.

¹² Ibid.

¹³ Ibid.

¹⁴ In its "Aging Coal Fleet Evaluation" presentation dated May 2021 TVA states that "frequent cycling of the super-critical units [at CUF] presents reliability challenges that are difficult to anticipate and very expensive to mitigate." and that "Unplanned outage rate, a component of availability, is the primary driver of challenges at CUF, GAF, and KIF." (pages 10 and 11)
https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/aging-coal-fleet-evaluation2eeb5bd7-1983-4d03-ac5b-c105e2686d07.pdf?sfvrsn=3425c191_3.

have the same potential to increase executive compensation. Thus, TVA's leadership has a conflict of interest in the outcome of the decision on how to replace CUF, and has an incentive to bias assumptions and methods toward adding a new gas CC to TVA's fleet.

TVA signed a Precedent Agreement with TGP on August 2021. Then, at its November 2021 meeting the TVA Board approved a resolution to allow TVA's CEO to take preliminary steps toward any of the alternatives considered to replace CUF, as well as to make the final decision on what resources should replace CUF.¹⁵ It is our understanding that this resolution by the TVA Board has allowed TVA leadership to work with TGP through the initiation of this very proceeding, and file an application for the TGP gas pipeline before TVA even finalizes its EIS on the replacement of CUF.

The resolution approved by the TVA Board in November 2021 would have allowed TVA leadership to take actions to ensure any of the alternatives considered by TVA would allow Cumberland to retire as early as possible. TVA clearly took steps to ensure Alternative A, the gas CC that is the basis for the TGP Cumberland pipeline, was moving as quickly as possible through this very approval process. However, there is no evidence of any actions TVA sought to take to move along any other potential replacement resources. These actions could have included issuing a Request for Proposals for renewable energy and energy storage resources, staffing up its interconnection study department to prepare to interconnect renewable energy projects faster, identify and begin planning transmission projects to ease the integration of renewable energy projects, and beginning to set up energy efficiency programs and other demand-side measures. TVA's actions to date make it very clear that it always intended for the gas CC option

¹⁵ The unnumbered resolution starts on page 14 of the Minutes of the Meeting of the Board of Directors Tennessee Valley Authority, November 10, 2021: https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/about-tva/board-of-directors/november-10-2021/2021-111021-board-meeting-minutes-signedc8e0c54a-232e-454f-b4e5-10db25b739c4.pdf?sfvrsn=85365566_3.

to be its preferred option regardless of the environmental review process, and that brings the merit of its environmental review into question.

V. Governmental entities agree TVA's DEIS is flawed

The Environmental Protection Agency (EPA) submitted comments to TVA on its CUF DEIS, stating that “the concerns raised herein are substantial in EPA’s view.”¹⁶ The concerns EPA brought up in its comments align with many of the criticisms presented here, which reinforces the point that FERC should perform its own analysis on whether the Cumberland CC is needed as it evaluates whether the Cumberland pipeline is needed. In particular EPA is concerned because TVA’s preferred alternative, the Cumberland gas CC that is the need for the TGP Cumberland pipeline, “would result in significant GHG emissions and associated environmental impacts.”¹⁷

The EPA’s comments have already been submitted to this docket, but here are a few key points that emphasize what we have also described here and in our comments on the DEIS. EPA states in its comments that “the analysis of the preferred alternative did not consider important, available mitigation options to reduce impacts from GHG emissions,” and suggests that TVA fully consider energy efficiency and demand side management in the analysis of replacing CUF.¹⁸ TVA ignored indirect GHG emissions in its analysis, including the potential for significant upstream emissions of methane through the production and delivery of natural gas. EPA urges TVA to include those indirect emissions in its analysis, including “reasonably foreseeable emissions from the production, processing, and transportation of natural gas.”¹⁹

¹⁶ EPA Comments on CUF DEIS, page 3. EPA’s comment letter is available here: <https://southernenvironment.sharefile.com/share/view/3955d8349fa040ab/fo34b733-4cd0-4ddb-a04a-77142afe2f61>.

¹⁷ Ibid, page 3.

¹⁸ Ibid, page 2.

¹⁹ Ibid, page 3.

Similar to our concerns, EPA points out the lack of transparency in the DEIS: “The EPA also finds that the DEIS does not fully disclose modeling and underlying assumptions for the alternatives considered, nor those alternatives that were considered and eliminated from further discussion. The EPA recommends TVA transparently disclose its modeling methodologies and assumptions to better enable a comparison between the alternatives.”²⁰ FERC has the opportunity, as it evaluates the alternatives to the Cumberland CC, to demonstrate how that evaluation can be done in a more transparent manner.

In addition to the EPA, several governmental entities at various levels have submitted comments critical of TVA’s DEIS, which further add to the need for FERC to look very critically at TVA’s conclusion that it needs a new gas CC at Cumberland to replace CUF. These entities range from the U.S. Department of the Interior to the Nashville Electric Service Board of Directors (the regulatory body of Nashville’s municipal utility), the Nashville Metropolitan government, and Nashville’s Mayor.²¹ All of these entities were critical of TVA’s choice of a new gas CC at Cumberland.

VI. FERC has new information to improve the analysis of alternatives

Since many methods, studies, and assumptions used in TVA’s analysis appear to be from the 2016-2018 timeframe, FERC has the ability to evaluate the options to replace CUF using assumptions that are more up-to-date. Even since TVA published its DEIS in the spring of this year, changes have occurred across the sector that impact the evaluation of electricity supply and demand options to replace CUF. For example, it has become clear that natural gas prices are

²⁰ Ibid, page 2.

²¹ U.S. Department of the Interior:
<https://southernenvironment.sharefile.com/share/view/d097a77c76454b1e/fo96e17e-57bc-4941-848c-9d56519a599a>, NES Board resolution:
<https://wpln.org/wp-content/uploads/sites/7/2022/05/2022-05-25-Board-Resolution-on-Cumberland-Plant-FIN-AL.pdf>, Nashville Metro resolution:
<https://nashville.legistar.com/LegislationDetail.aspx?ID=5694631&GUID=4CBBD6AE-06CF-40FA-8822-9F82F64DBF7F&Options=&Search=>, Nashville Mayor comments:
<https://wpln.org/wp-content/uploads/sites/7/2022/06/Nashville-CUF-DEIS-Comment-Letter.pdf>.

likely to remain higher or at least more volatile than believed at the beginning of the year. But perhaps most importantly is that the enactment of the Inflation Reduction Act (IRA) in August has the potential to change assumptions on both the demand and supply side.²² With incentives for energy efficiency, it would be prudent for TVA to revisit its load forecast and also for TVA to revisit its evaluation of the costs and impacts of energy efficiency programs to be a part of the CUF replacement portfolio.²³ The IRA also expands and extends tax credits for clean energy sources, makes them more available to public entities like TVA, and in fact mentions TVA by name in the bill.²⁴ Last, but likely not least, is that the IRA introduces a fee on methane emissions, and so requires a redo of the gas price forecast used to compare the costs of the various alternatives to replace CUF.²⁵

TVA's DEIS is based primarily on TVA's 2019 IRP, which uses assumptions developed in the 2016-2018 timeframe. That IRP also predates policies that directly impact TVA's future resource portfolio, including Executive Order 14057 that calls on the electricity sector to achieve net-zero carbon emissions by 2035.²⁶ Were TVA to build a new carbon-emitting gas CC at Cumberland by 2026, with no plans for capturing the carbon, it will immediately become a stranded asset in less than a decade and thus add to the utility's costs that must be borne by the 10 million people it serves.

With all of these assumptions updated, it is unlikely that the Cumberland CC will in fact be needed, and thus TGP's Cumberland gas pipeline would not be needed either.

²² H.R.5376 - Inflation Reduction Act of 2022:
<https://www.congress.gov/bill/117th-congress/house-bill/5376/text>.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability
<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/>.

VII. Recommendations

As FERC reviews the application of TGP for the Cumberland pipeline, it is imperative that FERC look critically at the DEIS where TVA attempts to justify the need for a new gas CC at Cumberland, and thus the need for the Cumberland pipeline to feed that plant. We have demonstrated that there are many reasons that FERC should perform its own evaluation of the need for the Cumberland gas CC as part of its evaluation of the need for the Cumberland pipeline.

**ATTACHMENT A: SACE Comments to TVA on its Draft
Environmental Impact Statement (DEIS) for the
Retirement of the Cumberland Fossil Plant**

June 13, 2022

via email to nepa@tva.gov

Ashley Pilakowski
NEPA Specialist
400 West Summit Hill Drive, WT 11B
Knoxville, TN 37902

Re: SACE Comments on CUMBERLAND FOSSIL PLANT RETIREMENT DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Ms. Pilakowski,

The Southern Alliance for Clean Energy (SACE) respectfully submits these comments in response to the Tennessee Valley Authority's (TVA) draft Environmental Impact Statement for replacement of the retiring Cumberland Fossil Plant (hereinafter referred to as the "Cumberland DEIS" or "DEIS").

In the DEIS, TVA failed to accurately evaluate all options to replace Cumberland and skewed its analysis toward its desired outcome. If TVA moves forward with a new gas plant and pipeline, TVA's customers will suffer higher electric bills and TVA will not be on track to decarbonize its grid by 2035 without significant stranded costs that must be borne by TVA customers. Replacing Cumberland with diverse, clean energy would lead to a more resilient grid and point TVA on a path that will ensure it fulfills its obligations to provide electricity to its customers at a low cost while safeguarding the environment and bolstering the regional economy.

SACE is a regional organization that promotes responsible and equitable energy choices to ensure clean, safe, and healthy communities throughout the Southeast. SACE's members are concerned by TVA's proposal to continue reliance on fossil fuels for decades, refusal to extend the comment period, and refusal to share documents used in compiling the DEIS. The comments submitted here do not cover the full array of shortcomings in the DEIS, but supplement the comments submitted by others by focusing on the following:

- TVA does not need additional gas to integrate renewable energy, and
- TVA failed to account for higher bills and energy burdens that would result from increased gas reliance and increased risk of stranded assets.

SACE calls on TVA to replace the Cumberland fossil plant with a combination of distributed and utility-scale solar, wind, and demand-side measures.

Sincerely,
Maggie Shober, Research Director

SACE calls on TVA to Replace Cumberland with Clean Energy, Not Another Fossil Fuel

Table of Contents

I. TVA Does Not Need New Gas.....

1

II. TVA Should Include Analysis of Gas Reliance on Low-income Bills in EIS.....

4

III. TVA Should Replace Cumberland with Clean Energy

7

I. TVA Does Not Need New Gas

TVA states its preferred alternative in the DEIS is Alternative A, a 1,450 MW combined cycle (CC) gas plant that requires a new gas pipeline to the Cumberland site be built. It appears that TVA’s analysis skews its results to favor Alternative A in several ways, including:

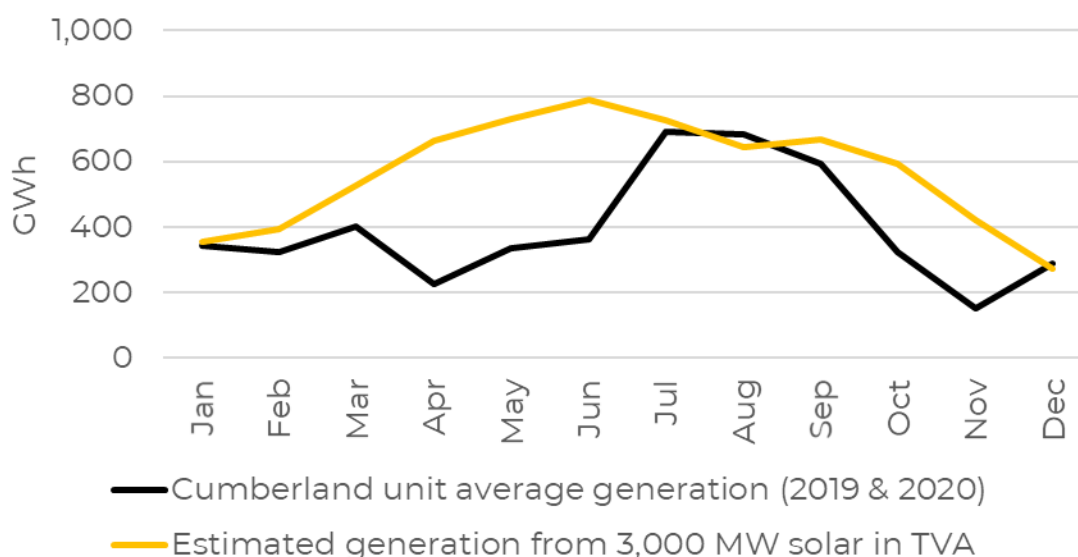
- Inflating the amount of solar and storage resources required to replace one Cumberland unit, and starting to work toward only Alternative A, resulted in costs and timeline estimates that appear unfavorable for that alternative,
- Failing to evaluate the alternatives under a realistic gas price forecast where gas prices remain high and volatile through at least the next decade, driven by more frequent climate change-fueled extreme weather events and political instability abroad, and
- Inflating the carbon emissions from the clean energy scenario, i.e. Alternative C, by failing to use its existing gas and hydro system effectively to integrate planned variable solar.

However, since TVA has refused to share its assumptions and studies that led TVA to the conclusion that Alternative A is preferred, the public, including SACE and our members, is unable to fully participate in the public review process as required under the National Environmental Policy Act (NEPA).

The DEIS does not present evidence that 3,000 MW of solar and 1,700 MW of 4-hour battery storage are required to replace one unit of the Cumberland fossil plant. Both units at the Cumberland plant are just under 1,300 MW of capacity, 400 MW less than the 1,700 MW of storage. Recent capacity factors of the Cumberland units have been 40-53% for Unit 1 and 31-50% for Unit 2, generating a range of 3.2 GWh to 5.5 GWh in a year. For comparison, 3,000 MW of utility-scale solar in TVA’s territory would generate 6.8 GWh in a year. As seen in Figure 1, 3,000 MW of solar provides approximately the same amount of energy as a single Cumberland

unit during the winter and summer peak months, and significantly more in the shoulder months.

Figure 1. Comparison of Monthly Generation



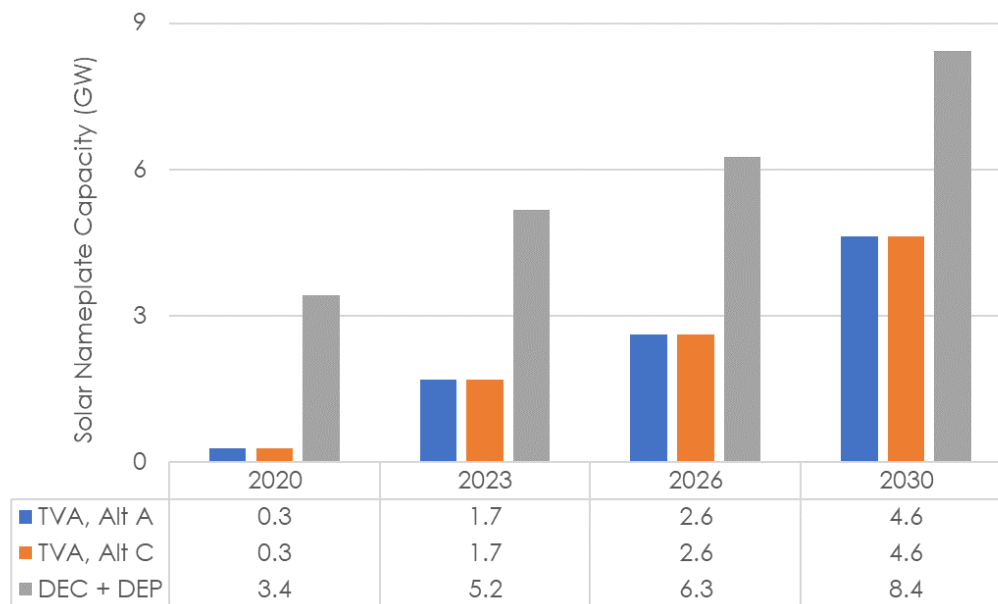
Even if we assume that TVA needs a full 3,000 MW of solar and 1,700 MW of storage to replace a Cumberland unit, the cost assumptions for the alternatives that are presented in the DEIS and supplemental materials are likely incredibly inaccurate. The level of inaccuracy was not able to be verified because the assumptions and methods made in the cost analysis were not available to the public. SACE attempted to recreate these calculations, and replace likely TVA assumptions with more reasonable assumptions for resource capital costs, operating and maintenance costs, and fuel costs.¹ With these more reasonable assumptions, the direct costs (which includes capital costs, operating and maintenance costs, and fuel costs) are nearly the same for both Alternative A and Alternative C. Since all the costs for Alternative C are dependent on how much solar and storage are built (capital costs are in \$/kW and fixed operating and maintenance costs are in \$/kW-year), if the amount of solar and storage were lower, the cost of Alternative C would be lower than that of Alternative A.

TVA does not need additional gas to integrate solar. For a point of comparison, Duke's two utilities that operate in the Carolinas, Duke Energy Progress (DEC) and Duke Energy Carolinas (DEP), have a combined system capacity approximate to TVA's. DEC and DEP already have over

¹ SACE pulled assumptions for solar, battery, and combined-cycle construction and operations and maintenance costs from the National Renewable Energy Laboratory's 2021 Advanced Technology Baseline and the Energy Information Administration's Annual Energy Outlook assumptions published in March of 2022. SACE adjusted the gas price forecast to reflect higher and more volatile gas prices and used a flat 2%/year assumption for inflation and 3% for TVA's cost of capital. SACE kept TVA's assumption that the gas CC in Alternative A would have a capacity factor of 87%, a booklife of 20 years, and a heat rate of 6,520 Btu/kWh. SACE also kept TVA's discount rate of 8%.

3 GW of solar operating on the two systems with significantly less gas and hydro than TVA, and a similar capacity from nuclear. And TVA's three gas combustion turbine projects that will be online in the next two years will only increase TVA's ability to integrate solar without adding new gas. TVA makes false claims that a new CC will be needed to integrate solar into TVA's system but does not provide any evidence to back up that claim. Based on what other utilities are doing across the world, and even TVA's neighbors, that claim just does not make sense.

Figure 2. TVA's Solar Nameplate Capacity under Alternatives A and C, with Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP) for comparison



TVA's DEIS states that the 3 GW of solar added in Alternative C is in addition to the 10 GW TVA claims it will have on its system by 2035. From statements made by TVA leadership, the main driver of those 10 GW of solar is for large corporate/industrial/commercial customers with clean energy goals, or cities with clean energy or carbon goals. That 10 GW of solar by 2035 goal has in interim target of 5 GW of solar by 2030, of which 2.4 GW is operating or contracted for and scheduled to come online in the coming years. Assuming that 2.4 GW comes online by the end of 2023, that leaves 2.6 GW remaining of the 2030 goal, and spread evenly that's the addition of just 372 MW of solar each year. As such, if TVA does not replace any of Cumberland with solar, it would be at approximately 3,516 MW of solar by the end of 2026. If TVA were to add an additional 3 GW of solar, as laid out in Alternative C, the system would have a total of approximately 6,516 MW of solar by the end of 2026. Based on the capacity projections from TVA's 2019 Integrated Resource Plan (IRP), which are the latest that have been made public, these levels of solar would mean solar would be approximately 8% of TVA's total nameplate capacity by the end of 2026 under Alternative A and solar would be approximately 14% of TVA's total nameplate capacity by the end of 2026 under Alternative C. By comparison, Duke's combined utilities in the Carolinas had 9% of total nameplate capacity as solar in 2020 and are

expected to increase solar to 15% of nameplate capacity by the end of 2026 and 19% of nameplate capacity by the end of 2030 under the utilities' current resource plans.

Using the values from TVA's 2019 IRP for capacity credit and peak load forecasts from the 2020 FERC 714 report (published June 21, 2021), because the winter capacity credit that TVA assumes is zero, the winter reserve margin for Alternative C is only one percentage point lower than the winter reserve margin for Alternative A. In addition, the summer reserve margin is 8 percentage points higher under Alternative A than under Alternative C.

While TVA has not added more than 1,000 MW of solar in a single year, the integration of that level of solar in a single year is physically possible and the levers that make it possible, such as the contracting and interconnection process, are within TVA's control.

In addition to reducing the amount of solar and storage needed to replace one unit of the Cumberland coal plant, TVA should include more diversity in the sources it included in its analysis. For instance, the financial incentives TVA would need to provide in energy efficiency, demand response, and rooftop solar would provide similar energy and capacity benefits at a fraction of the cost because the participating customers would bear most of the resource costs. In fact, since TVA has a higher winter planning reserve margin in its 2019 IRP, if TVA focused financial incentives on energy efficiency and demand response programs with load shapes that are known to shave the winter peak, it would both improve reliability and resilience over the construction of a gas CC, and fill the reserve margin and energy needs of its customers at a lower cost. TVA must not finalize the Cumberland replacement EIS without analyzing the potential to use winter peak-focused demand-side measures to replace some of the energy and reserve margin that Cumberland currently provides.

II. TVA Should Include Analysis of the Impact of Gas Reliance on Bills in EIS

If TVA moves forward with Alternative A it will increase its reliance on natural gas from 29% of total energy in 2020 to at least 34% of total energy in 2026. An increased reliance on gas means TVA customers have an increased risk of high bills driven by higher gas prices and likely stranded asset costs.

TVA's low-income residential customers already experience high, and in some cases extremely high, energy burdens, as TVA described in its presentation to its Board of Directors on May 11, 2022. In addition, TVA passes its fuel costs directly to local power companies (LPC) customers, who all pass those costs on directly to customers in some way. That means high or volatile fuel costs are reflected in what customers pay for electricity every month. However, TVA's analysis of the impact of the Alternatives failed to consider any bill impacts from high fuel costs.

TVA refused to share the gas price forecast, instead stating in an email that, *"Fuel forecasts are closest to the Rapid DER Adoption scenario."* However, *"closest to"* could be above, below, or

approximately the same. TVA's Rapid DER Adoption scenario had the lowest gas prices of all the gas price forecasts evaluated in the 2019 IRP and appears to top out at a \$4.50/MMBtu in nominal dollars in 2038. This is wildly out of step with the reality of gas markets today and into the future. Gas futures were already increasing prior to Russia's invasion of Ukraine, but since that prices have topped \$9.00/MMBtu this year. The U.S. has increased its ability to export liquid natural gas (LNG) significantly since TVA developed the gas price forecasts it used in its 2019 IRP, so even absent global instability in key regions that supply global fossil fuel markets gas prices are expected to remain both higher and more volatile than the forecast TVA has used in this analysis.

At a gas price of \$9.00/MMBtu TVA would pay an additional \$325 Million in annual fuel costs for the fuel needs of a new CC at Cumberland compared to TVA's assumed maximum gas price of \$4.50/MMBtu. The fuel costs of TVA's proposed new CC at Cumberland would add \$40-75 to residential customer bills each year, with the potential for volatile gas markets to increase this figure. Industrial and commercial customers would see significantly higher bill increases due to the cost of fuel at a new gas CC.

TVA hedges a portion of its gas needs, approximately 20% in recent history according to presentations to the TVA Board. However, even if TVA were to hedge 20% at \$4.50/MMBtu and pay \$9.00/MMBtu for the remainder, it would still pay an additional \$260 Million in annual fuel costs for the fuel needs of a new CC at Cumberland under today's gas price forwards.

Figure 3. TVA Gas Price Forecasts per Scenario in the 2019 IRP

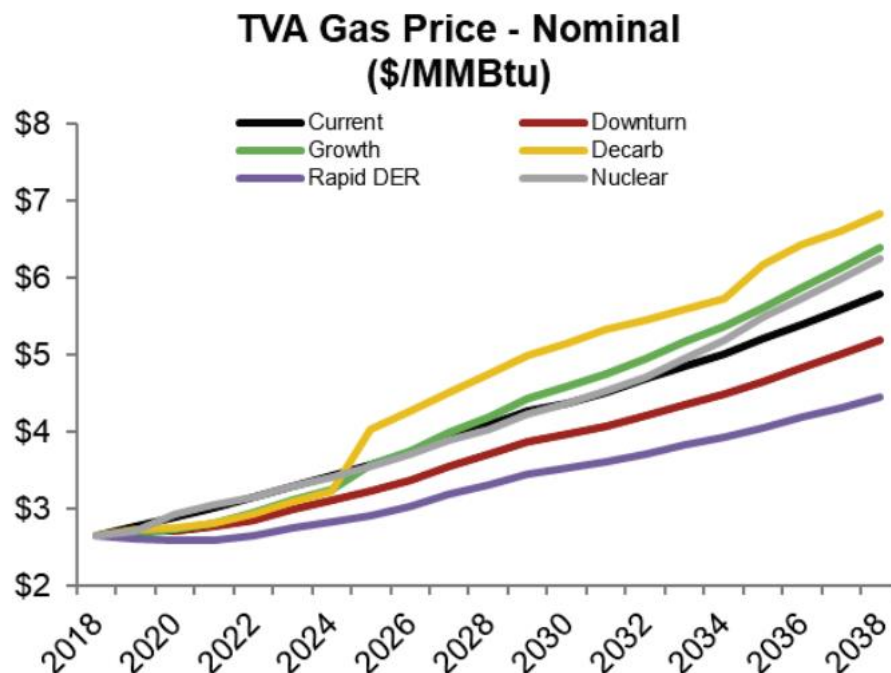
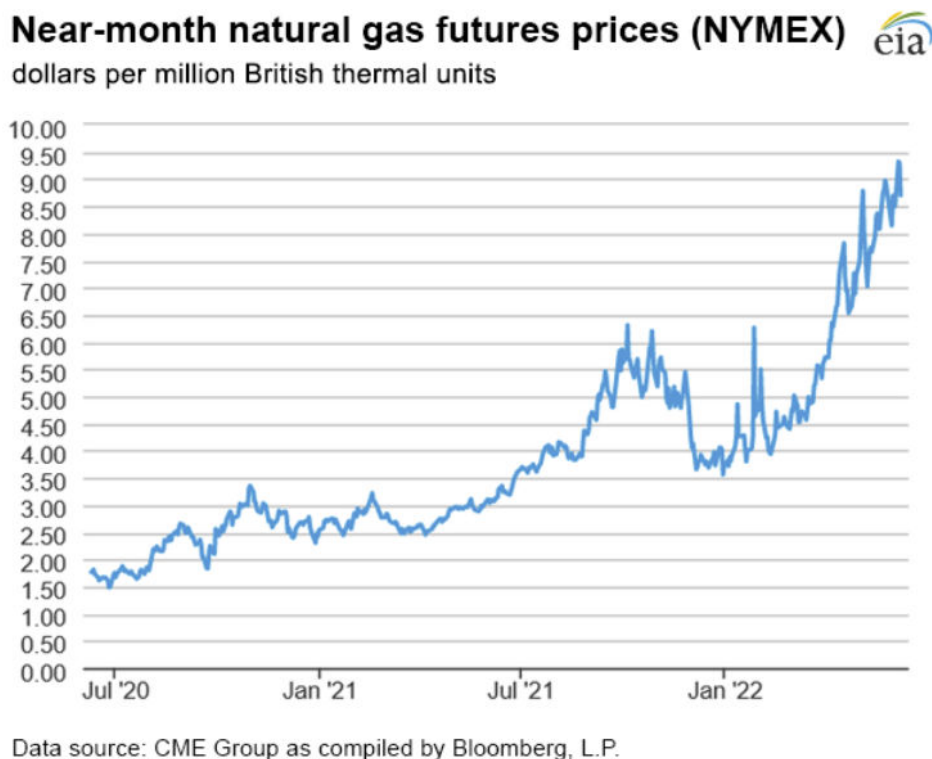


Figure 4. Gas Price Futures as of Monday, June 13, 2022



Greenhouse gas emission policies and/or regulations mean TVA will very likely have to shut the new CC proposed in Alternative A before 2044, the year a 20-year asset like a CC would be fully depreciated. Policies and regulations are likely to limit both carbon dioxide (CO₂) and methane within that timeframe, and gas plants have significant emissions of both of those pollutants. TVA should evaluate the cost and environmental impacts of replacing the new CC much earlier than 2044, or the costs and environmental impacts associated with switching the new CC at Cumberland to a zero-carbon and zero-methane fuel. TVA's failure to account for, or even mention, these risks in its DEIS indicates an egregious disregard for the potential for this decision to seriously increase customer bills. If TVA were to be required to close the new CC at Cumberland by the end of 2035, which matches with President Biden's Executive Order and climate scientist calls for the electric sector to be carbon-free by 2035, TVA's customers would be saddled with \$5 Billion in stranded costs because of this decision to build a new CC at Cumberland. That means TVA customers would pay an additional \$5 billion over 2036-2044 without receiving a single MWh. This cost risk needs to be evaluated in the DEIS, particularly its potential impact on low-income customers that are already facing high energy burdens.

TVA's DEIS does not mention energy burden, and the impacts of increased fuel costs and stranded asset costs are not considered in any of the NEPA analysis. TVA should analyze these impacts in a transparent manner. If this analysis is done correctly, it will make it conclusive that a replacement of Cumberland with clean energy is the least-cost and least-risky option for all of TVA's customers.

III. TVA Should Replace Cumberland with Clean Energy

As the IPCC's Sixth Assessment Report, Working Group III, makes clear in its headline statements from the summary for policymakers: greenhouse gas emissions need to peak by 2025, experience rapid and deep declines following, and achieve net zero by the early 2050s at the latest to limit warming to 1.5°C. As part of those headline statements, the IPCC WGIII states with high confidence:

“Reducing GHG emissions across the full energy sector requires major transitions, including a substantial reduction in overall fossil fuel use, the deployment of low-emission energy sources, switching to alternative energy carriers, and energy efficiency and conservation. The continued installation of unabated fossil fuel infrastructure will ‘lock-in’ GHG emissions.”

TVA's decision to replace one fossil fuel resource with another, and then present the decision as “beneficial” on climate, is an absolute farce. Furthermore, as we look to decarbonize other sectors through electrification, further reducing the emission intensity of electricity through energy efficiency, renewables, and storage compounds the emission reductions gained through electrification. Continuing to use a fossil fuel like gas, which is a major source of methane emissions, limits the greenhouse gas emission reductions available through electrification.

The statement from scientists, and approved by policymakers around the world, is clear that installation of new fossil fuel infrastructure does the exact opposite of what is needed to mitigate climate change: rapid and deep reductions in greenhouse gas emissions, including both CO₂ and methane. TVA's DEIS does not justify how locking in further CO₂ and methane emissions is a good option for its customers.

**ATTACHMENT B: SACE Email Exchanges and Responses
from TVA through NEPA and FOIA document requests**



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Maggie Shober <maggie@cleanenergy.org>

Tue, May 17, 2022 at 1:13 PM

To: aapilakowski@tva.gov

Cc: FOIA <foia@tva.gov>

Dear Ms. Pilakowski,

Please see attached a request for documents related to the Cumberland draft EIS. We are also submitting a request through the Freedom of Information Act process. We appreciate your efficient attention on this request as the comment period deadline quickly approaches.

Please let me know if you have any questions.

Thank you,
Maggie

--

Maggie Shober
Research Director
Southern Alliance for Clean Energy
P.O. Box 1842 Knoxville, TN 37901
maggie@cleanenergy.org | 615-364-5527
<http://www.cleanenergy.org>

CONFIDENTIALITY NOTICE: This email message, including any attachments, is for the sole use of the intended recipients(s) and may contain confidential and privileged information. Any unauthorized review; use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.



CUF DEIS NEPA request for documents 05.11.2022.pdf

176K



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Pilakowski, Ashley Anne <aapilakowski@tva.gov>
To: Maggie Shober <maggie@cleanenergy.org>
Cc: FOIA <foia@tva.gov>

Thu, May 26, 2022 at 4:37 PM

Dear Ms. Shober,

Please find TVA's response to your request for additional information attached. Please let me know if you have any further questions.

Thank you,

Ashley Pilakowski
NEPA Specialist
NEPA Program



W. 865-632-2256 E. aapilakowski@tva.gov
400 West Summit Hill Drive, Knoxville, TN 37902

NOTICE: This electronic message transmission contains information that may be TVA SENSITIVE, TVA RESTRICTED, or TVA CONFIDENTIAL. Any misuse or unauthorized disclosure can result in both civil and criminal penalties. If you are not the intended recipient, be aware that any disclosure, copying, distribution, or use of the content of this information is prohibited. If you have received this communication in error, please notify me immediately by email and delete the original message.

From: Maggie Shober <maggie@cleanenergy.org>
Sent: Tuesday, May 17, 2022 1:13 PM
To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Cc: FOIA <foia@tva.gov>
Subject: Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

This is an **EXTERNAL EMAIL** from outside TVA. **THINK BEFORE** you **CLICK links or OPEN attachments**. If suspicious, please click the **"Report Phishing"** button located on the Outlook Toolbar at the top of your screen.

8/17/22, 12:16 PM

Southern Alliance for Clean Energy Mail - Request for Documents related to the Cumberland Fossil Plant Retirement Draft Envir...

[Quoted text hidden]



2022-05-26 TVA Response to SACE Request for Additional Information.pdf

134K



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Maggie Shober <maggie@cleanenergy.org>

Tue, May 31, 2022 at 10:57 AM

To: "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

Cc: FOIA <foia@tva.gov>

Dear Ms. Pilakowski,

The information requested is relied upon in the DEIS but not contained in the text or available to the public, thus the request for the information. Please indicate where the following are available in the DEIS or otherwise are public.

1. Financial and system analysis of each alternative replacement - Partial results from this appear in the DEIS, but not a report on the full study that includes modeling software, assumptions, and full results.
2. The latest TVA asset strategy that builds on the 2019 IRP and Guiding Principles from May 2021
3. The Loss of Load Event (LOLE) study performed to identify the amount of storage needed in Alternative C, and whether that is the same as the Astrape study that used SERVIM

These are critical to TVA customers and stakeholders, including SACE, being able to provide meaningful comments on the DEIS. If we can't follow what TVA used to calculate, for example, the costs and emissions of each alternative, the process is not transparent and does not serve the purpose of having the public comment period as part of the NEPA process.

I appreciate your timely response to these questions.

Thank you,
Maggie

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

nepa <nepa@tva.gov>

Thu, Jun 2, 2022 at 4:30 PM

To: Maggie Shober <maggie@cleanenergy.org>

Cc: nepa <nepa@tva.gov>, "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

Dear Ms. Shober,

With respect to the three items identified in your e-mail of May 31, 2022, the documents made available with the Draft EIS and that TVA relied on in drawing conclusions in the Draft EIS are identified below.

Item 1 – The results of the total system analysis are presented in Slides 15 to 23 of the Cumberland Alternative Analysis, linked here. The financial comparisons are summarized on Slide 17. The modeling software itself is consistent with that used in the 2019 IRP, and a discussion of that modeling software, System Optimizer, is included in section 6.3.1 of TVA's 2019 IRP. The assumptions discussed in detail throughout the 2019 IRP are consistently leveraged in the Alternatives Analysis provided in support of the Draft EIS. The 2019 IRP is available here.

Item 2 – The latest TVA assets strategy is not a document or study. It is the expression of the planning assumptions outlined in TVA's 2019 IRP, the recommended near-term actions that TVA is currently pursuing, and the results of completed near-term actions which inform longer-term assumptions, particularly the coal end-of-life study. The coal end-of-life study is entitled "Aging Coal Fleet Evaluation" and is available at the DEIS webpage, linked here.

Item 3 – The development of Alternative C was based on the reserve margin and flexibility studies discussed in the 2019 IRP.

Thank you for your interest in this subject. Please provide us your comment on the Draft EIS no later than June 13, 2022.

Sincerely,

Matthew Higdon
NEPA Specialist
Environment



W. 865-632-8051 E. mshigdon@tva.gov
400 West Summit Hill Drive #WT11B, Knoxville, TN 37902

NOTICE: This electronic message transmission contains information that may be TVA SENSITIVE, TVA RESTRICTED, or TVA CONFIDENTIAL. Any misuse or unauthorized disclosure can result in both civil and criminal penalties. If you are not the intended recipient, be aware that any disclosure, copying, distribution, or use of the content of this information is prohibited. If you have received this communication in error, please notify me immediately by email and delete the original message.

From: Maggie Shober <maggie@cleanenergy.org>

Sent: Wednesday, June 01, 2022 11:35 AM

To: Davis, Brooke Alison <badavis13@tva.gov>

Cc: nepa <nepa@tva.gov>; Masters, Anita E <aemasters@tva.gov>; Smith, Elizabeth <esmith14@tva.gov>; Pilakowski, Ashley Anne <aapilakowski@tva.gov>

Subject: Re: Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

This is an **EXTERNAL EMAIL** from outside TVA. **THINK BEFORE** you **CLICK links or OPEN attachments**. If suspicious, please click the **"Report Phishing"** button located on the Outlook Toolbar at the top of your screen.

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Maggie Shober <maggie@cleanenergy.org>

Thu, Jun 2, 2022 at 5:26 PM

To: nepa <nepa@tva.gov>

Cc: nepa <nepa@tva.gov>, "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

Thank you for your response.

So does this mean that TVA used all the same assumptions when evaluating the costs of these Alternatives that were used in its 2019 IRP? There were no updates to fuel price forecasts, capital costs, or load forecasts?

Thanks,

Maggie

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

nepa <nepa@tva.gov>

Tue, Jun 7, 2022 at 1:59 PM

To: Maggie Shober <maggie@cleanenergy.org>, nepa <nepa@tva.gov>

Cc: "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

Ms. Shober,

The specific load and fuel price forecasts used in the Alternatives Analysis fall well within the ranges described in the IRP. Capital costs for the new resources, variable O&M costs, transmission costs, integration costs, and impact to the overall portfolio and associated cost implications all play a role in the total system analysis results presented in the Alternatives Analysis. Since the assumptions for the IRP were developed in 2017, overnight capital costs (\$/kW) have increased about 15-30% for gas resources and decreased about 20% for solar and 60% for utility battery storage (4hr) resources.

Thank you,

Ashley

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Maggie Shober <maggie@cleanenergy.org>

Tue, Jun 7, 2022 at 2:24 PM

To: nepa <nepa@tva.gov>

Cc: "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

Thank you Ashley, that is helpful.

On the load and fuel price forecasts, there is a lot of variability among the IRP scenarios. Can you let me know which scenario(s) best reflect the assumptions used in the Alternatives Analysis?

Thanks,

Maggie

[Quoted text hidden]

--

Maggie Shober (she/her)

Research Director

Southern Alliance for Clean Energy

P.O. Box 1842 Knoxville, TN 37901

maggie@cleanenergy.org | 615-364-5527

<http://www.cleanenergy.org>

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Maggie Shober <maggie@cleanenergy.org>

Tue, Jun 7, 2022 at 5:07 PM

To: nepa <nepa@tva.gov>

Cc: "Pilakowski, Ashley Anne" <aapilakowski@tva.gov>

As I am attempting to recreate the cost analysis done for Alternatives A and C, using figures from TVA's IRP, the adjustments described in your email below, and calculations from the DEIS (for instance, with the direct carbon emissions for Alternative A, I estimated the capacity factor for the new CC to be ~87%), I am actually getting that Alternative C is less than half the cost of Alternative A. Now, I am only able to calculate the PV of the direct costs (capital costs, fuel costs, O&M costs), but I find it hard to believe the system costs would account for such a difference.

The Alternatives Analysis document states that Alternative C has a 20-year NPV that is \$2,311M higher than Alternative A. Can you confirm that TVA analysts are still using an 8% discount factor, and also provide me a breakdown of how much of this difference is direct costs (capital costs, fuel costs, O&M costs) and how much are due to changes in the system, such as changes to which units dispatch?

If I could talk to anyone that worked on the analysis directly, and show them what I'm trying to do, that would be great.

Thank you,
Maggie

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Pilakowski, Ashley Anne <aapilakowski@tva.gov>

Wed, Jun 8, 2022 at 5:16 PM

To: Maggie Shober <maggie@cleanenergy.org>

Hi Maggie,

TVA's load and commodity forecasts are updated regularly to reflect changing market conditions. Assumptions used in the Alternative Analysis for the load forecast fall between the Current Outlook and Valley Load Growth scenarios. Fuel forecasts are closest to the Rapid DER Adoption scenario.

Thank you,

Ashley

[Quoted text hidden]



Maggie Shober <maggie@cleanenergy.org>

Request for Documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement

Pilakowski, Ashley Anne <aapilakowski@tva.gov>

Thu, Jun 9, 2022 at 3:27 PM

To: Maggie Shober <maggie@cleanenergy.org>

Maggie,

Thank you for your continued interest in this project. Please note that the information and results of analysis from TVA subject matter experts that TVA has relied on in drawing conclusions in the DEIS is summarized and provided in the text of the DEIS itself, incorporated by reference in the DEIS, or otherwise already available to the public and provides for adequate public review. If you have additional concerns related to the proposed project, please submit those as formal comments through the appropriate project webpage at www.tva.com/nepa, to nepa@tva.gov or in writing to Ashley Pilakowski, WT11B, [400 W Summit Hill Dr., Knoxville, TN 37902](#). Please be sure to submit your comments by June 13, 2022.

Thank you,

Ashley

[Quoted text hidden]



400 West Summit Hill Avenue, Knoxville, Tennessee 37902

Via email to maggie@cleanenergy.org

May 26, 2022

Ms. Maggie Shober
Southern Alliance for Clean Energy
P.O. Box 1842
Knoxville, Tennessee 37901

Dear Ms. Shober:

RE: REQUEST FOR DOCUMENTS RELATED TO THE CUMBERLAND FOSSIL PLANT
RETIREMENT DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

On May 17, 2022, Tennessee Valley Authority (TVA) received your letter requesting additional documents related to the Cumberland Fossil Plant Retirement DEIS. We have also been informed that an identical request for documents was submitted to TVA's Freedom of Information Act (FOIA) Officer on the same date.

Please note that information that TVA has relied on in drawing conclusions in the DEIS is provided in the text of the DEIS itself, incorporated by reference in the DEIS, or otherwise already available to the public. However, should TVA discover any documents that do not fall within these categories that are responsive to your request, they will be provided to you. As a separate matter, your FOIA request will be processed by TVA pursuant to its FOIA guidelines.

Thank you for your interest in this project. Should you have any questions, please contact me by phone, (865) 632-2256 or by email, aapilakowski@tva.gov.

Sincerely,

Ashley Pilakowski
NEPA Specialist
NEPA Programs



Tennessee Valley Authority, 400 W. Summit Hill Drive, Knoxville, Tennessee 37902-1401

August 16, 2022

Ms. Maggie Shober (maggie@cleanenergy.org)
Southern Alliance for Clean Energy
P.O. Box 1842
Knoxville, TN 37901

Dear Ms. Shober:

This responds to your request under the Freedom of Information Act (FOIA) (5 U.S.C. § 552) dated May 17, 2022, for documents related to the Cumberland Fossil Plant Retirement Draft Environmental Impact Statement. Your request was processed under tracking number 22-FOI-00153.

Specifically, you requested the following:

1. The full analysis, including spreadsheets and workbooks with formulas, reports, assumptions and results, and indicate what modeling software was used in the two analyses on page 55 of the DEIS. You also requested any scenarios and sensitivities performed as part of the process.

Please refer to "Cumberland Alternative Analysis" provided on TVA's website, link [here](#). The results of the total system analysis are presented on slide 17 of this document. The modeling software, System Optimizer, is included in Section 6.3.1 of the 2019 IRP and the assumptions are consistent with those discussed in detail throughout the 2019 IRP available at this link <https://www.tva.com/environment/environmental-stewardship/integrated-resource-plan>.

2. The analysis and reasoning for when each of the alternatives could become online, including potential risks to that timeline, such as delays in the pipeline permitting process. You also requested documentation of all actions taken by TVA staff to date for each alternative to be ready in time to retire the first Cumberland unit.

Please refer to "Cumberland Alternative Analysis" provided on TVA's website, link [here](#). (www.tva.com/nepa)

3. The latest asset strategy TVA relied upon to put together this DEIS including drivers for TVA to assume or target 10 GW of solar on the system by 2035 that is not explicitly called for in the 2019 IRP or TVA's financial plan.

Please refer to the planning assumptions outlined in the following publications - Strategic Intent and Guiding Principles (<https://www.tva.com/energy-system-of-the-future>), the TVA Integrated Resource Plan (IRP) (www.tva.com/irp), Aging Coal Fleet Evaluation – Cumberland Project Page (www.tva.com/nepa) and CT Modernization Study – Paradise & Colbert CT Project Page (www.tva.com/nepa).

4. The full reserve margin and/or LOLE study showing how the nameplate capacity for each alternative was derived. If no LOLE analyses were done on alternatives A or B, provide an explanation for that.

Please refer to Appendix D of the IRP (www.tva.com/irp).

5. For the reliability analysis described on page 38 of the DEIS, the full analysis, including spreadsheets and workbooks with formulas, assumptions, results, reports, and full description of method, assumptions and all software used.

Please refer to Appendix D of the IRP (www.tva.com/irp).

6. For the analysis described on page 38 of the DEIS using the SERVIM model, the full analysis report from Astrape, a full description of method, assumptions and results including any scenarios or sensitivities performed as part of this analysis.

Please refer to Appendix D of the IRP (www.tva.com/irp). The Astrape report is confidential information from an outside source that is protected from disclosure by FOIA exemption 4.

7. Analysis that shows how TVA came to determine that the proposed CC plant at CUF provides the flexibility needed to reliably integrate 10 GW of solar into the system by 2035.

Please refer to Cumberland Alternatives Analysis – Cumberland Project Page (www.tva.com/nepa).

8. Reasoning and analysis that back up the statement on page 55 of the DEIS that the proposed CC plant enables the CUF coal-fired units to be retired on an accelerated schedule.

Please refer to Coal End of Life Evaluation – Cumberland Project Page (www.tva.com/nepa).

9. The results of the model analysis described on page 189 of the DEIS including assumptions on load forecast, fuel costs, energy efficiency savings, new capacity additions, PVRR of revenue requirements and results in generation (MWh) and capacity (MW) each year by energy type, such as solar, wind, gas CC, gas CT, nuclear, etc. for each alternative and any additional scenarios or sensitivities that were run.

Please refer to the Appendices of IRP (www.tva.com/irp). The additional detailed financial and operational information you requested under Item 9 is confidential business information that is protected from disclosure by FOIA exemption 5.

FOIA exemption 4 protects confidential commercial and financial information submitted the government by an outside source, such as the Astrape report requested under Item 6. The deliberative process privilege under FOIA exemption 5 protects confidential internal information that is pre-decisional and part of an agency's decision-making processes. The government confidential commercial privilege, also under exemption 5, protects the government's confidential commercial and financial information. Release of such information would have a chilling effect on open and frank discussions and exchange of information within TVA on decision-making and policy formulation. In addition, disclosure of commercially and financially competitive information would harm TVA's ability to fulfill its mission of providing low-cost reliable energy to TVA customers.

If you have questions, you may contact me at foia@tva.gov. Enclosed is contact information for FOIA mediation services offered by the Office of Government Information Services and TVA.

Ms. Maggie Shober

Page 3

August 16, 2022

You may appeal this response to your FOIA request by writing to Mr. Buddy Eller, Vice President, Communications, Tennessee Valley Authority, at email address foia@tva.gov or Fax to (865) 632-6901. Any appeal must be received within 90 days of the date of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Denise Smith". The signature is written in a cursive, flowing style.

Denise Smith
TVA FOIA Officer

NOTICE

The Office of Government Information Services (OGIS) was created to offer mediation services to resolve disputes between FOIA requesters and Federal agencies as a non-exclusive alternative to litigation. Using OGIS Services does not affect your right to pursue litigation. If you are requesting access to your own records (which is considered a Privacy Act request), you should know that OGIS does not have authority to handle requests made under the Privacy Act of 1974. You may contact OGIS in any of the following ways:

Office of Government Information Services
National Archives and Records Administration
Room 2510
8601 Adelphi Road
College Park, MD 20740-6001
Email ogis@nara.gov
Telephone: 301-837-1996
Facsimile: 301-837-0348
Toll-free: 1-877-684-6448

FOIA Liaison mediation services are also available through the TVA Ombudsman. You may contact the Ombudsman in any of the following ways:

Mr. Wilson Taylor
Ombudsman and TVA FOIA Liaison
Tennessee Valley Authority
400 W. Summit Hill Drive (WT 7D)
Knoxville, TN 37902-1401
Email wtaylor@tva.gov
Telephone: (865) 632-8133