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Re: Draft Environmental Impact Statement for the New Caledonia Gas Plant

Comments submitted on behalf of the Southern Alliance for Clean Energy

Only July 22, 2024, the Tennessee Valley Authority (TVA or the Agency) issued a Draft Environmental Impact Statement (DEIS) for the New Caledonia Natural Gas Plant, a project to be located in Lowndes County, Mississippi. This was done in accordance with the National Environmental Policy Act (NEPA), which requires federal agencies such as TVA to “consider” the effects of proposed projects on the human and natural environment prior to final decision-making. The project is a peaking dual-fuel (fossil gas and distillate fuel oil) plant consisting of six simple cycle frame combustion turbines totalling approximately 500 MW.

The stated purpose of the proposed action is to “support continued load growth within the Tennessee Valley in a way that is consistent with the recommendations in the 2019 Integrated Resource Plan (IRP)... while facilitating the integration of renewables onto the grid, thereby advancing TVA’s decarbonization goals. The 2019 IRP recommended the addition of up to 5,200 MW of CTs by 2028.... The addition of CT units to the fleet was recommended to enhance system flexibility to integrate renewables and distributed resources.” (DEIS, p. 3)

The DEIS assesses only two scenarios: building the peaker plant (the Preferred Alternative) and not building the peaker plant (the No Action Alternative). The DEIS states “The Proposed Action aligns with the 2019 IRP.” TVA is relying on a document that is more than five years out of date. This is fundamentally inappropriate because the policy, economic, and technological assumptions are no longer even remotely accurate and valid. TVA is in the process of updating its IRP - presumably to be released by the end of this month (September, 2024). **TVA should not design a project to meet a resource plan need based on a document that is no longer relevant**, especially when a draft of a new plan is imminent.

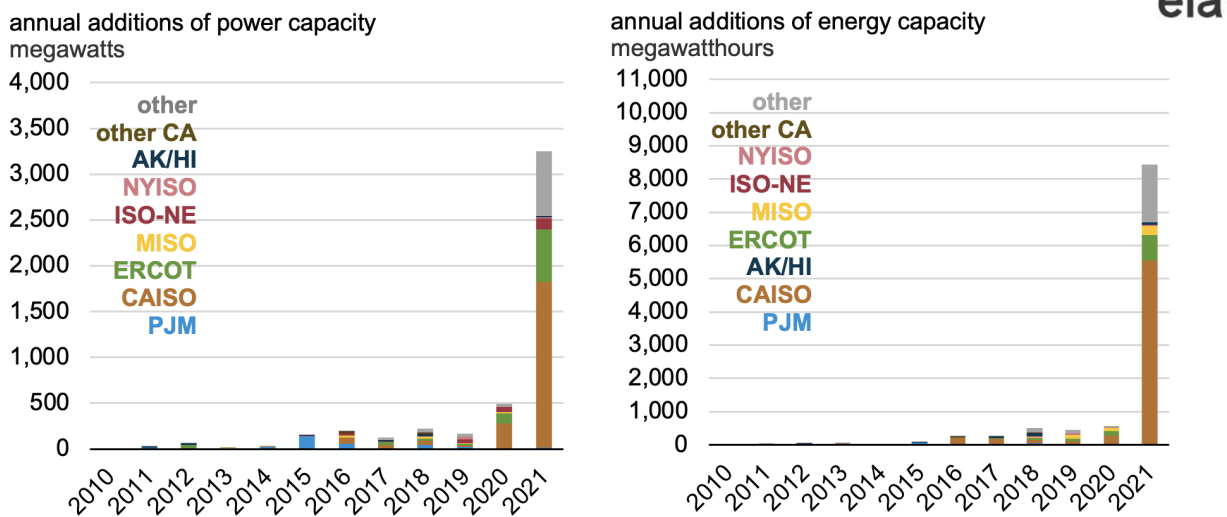
Battery Storage Not Considered as an Alternative Scenario

The DEIS only discusses the Preferred Alternative and the No Action Alternative. There is no discussion of battery storage as an alternative, in spite of the fact that battery storage would meet the need even better than the Preferred Alternative, the 500 MW peaker. If peaking resources are needed in the region due to real time load growth and the planned addition of renewables, then battery storage should be evaluated for the site. Batteries are far more nimble than simple cycle combustion turbines, and they can perform

stabilizing and supportive functions for the grid far beyond just peak power. Batteries are also a better deal for TVA's ratepayers because 1) they are not subject to fuel price fluctuations and 2) they are eligible for IRA tax credits. Further, a battery storage project at this site could probably be constructed and brought online faster than simple cycle combustion turbines. The same advantages identified for gas peakers, such as the fact that the site is not greenfield, is already engineered for stormwater control, and a 500 kV substation is adjacent would continue to be advantages for a battery storage project.

In the DEIS, TVA references the 2019 IRP when it states that pairing solar with battery storage “adds cost and introduces transmission stability and reliability issues that then must be addressed with transmission system improvements.” (DEIS, p. 6) The 2019 IRP should no longer qualify as a reliable source for this type of claim. Battery and inverter technologies have improved and battery costs have declined significantly since 2018-2019, and the Inflation Reduction Act had not yet become a factor when the IRP was drafted and approved. **In the Inflation Reduction Act, TVA is specifically referenced in Section 6417 as an entity eligible for the direct pay option.** The clear superiority of battery storage as a flexible and cost effective grid asset is demonstrated by the sheer increase in additions of large-scale battery storage to the US grid *since* 2019 (see Figure 1a below). This one chart quickly demonstrates just how much has changed since TVA issued its 2019 IRP.

Figure 1a. Large-scale battery storage capacity additions by region (2010–2021)



Data source: U.S. Energy Information Administration, 2021 Form EIA-860, Annual Electric Generator Report

There are announcements almost weekly from grid-scale battery developers describing new projects coming online. One of the most recent is a 200 MW, 400MWh Battery Energy Storage System (BESS) [in Houston](#) by Jupiter Power. This facility was built on the site of a former fossil fuel power plant. The project is designed to expand to add another 400 MW and 800MWhs. ERCOT has 5 GW of battery storage connected to its grid. In California, [Calpine Energy](#) is bringing a 680 MW and 2,720 MWh battery project online to replace a 16 year old 800 MW fossil gas combined cycle plant. Both Texas and California have a high percentage of renewables on their grids, and battery storage is the technology chosen by those markets as the best technology to support renewables and balance those grids.

For multi-day storage needs, Form Energy has completed its factory in West Virginia and has [broken ground](#) on its first installation in Minnesota, with more projects in the pipeline. Form Energy was founded in 2017. They noted in a [2018 interview](#) that they had not yet settled on a multi-day energy storage

technology, but that it would be a “decade-long project” about the time TVA was finalizing its Draft 2019 IRP. Now, six years later it has a completed factory, has a project going in the ground, and has additional utility-scale projects [in the pipeline](#). We are not holding up Form’s iron-air technology as a preferred technology, but rather we are using the company’s rapid growth as one example of how fast the landscape has changed - while TVA’s 2019 IRP has remained a static and increasingly irrelevant planning document. Further, the **Energy Information Agency (EIA) expects battery storage capacity in the US to nearly double this year** with 14.3 GW being added to the existing 15.5 GW.

The New Caledonia Gas Plant Will Increase CO2 Emissions Significantly

Regarding carbon emissions, the Agency states “The operation of the project would result in a maximum direct increase of **531,728 metric tons of CO2e per year** based on an assumed maximum capacity factor of 20 percent.... The predicted actual direct increase is **344,077 metric tons of CO2e per year....**” (DEIS, p. iv and p. 29) TVA also states that the maximum net near-term increase in emissions associated with the plant would “represent a direct increase of approximately 1.8 percent of total statewide emissions....” (DEIS, p. iv) The “predicted” amount still represents an increase of 1.2 percent of total statewide emissions. (DEIS, p. iv)

The Federal Energy Regulatory Commission (FERC) does not have jurisdiction over this project, but it does have jurisdiction over other types of gas infrastructure such as interstate gas pipelines and LNG export facilities, and it must also adhere to the requirements of NEPA. FERC has developed an Interim Policy Statement on Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews. FERC states that it intends to use this framework “to evaluate a proposed natural gas infrastructure project’s greenhouse gas emissions and climate impacts under the National Environmental Policy Act and in its Natural Gas Act public interest determination.”¹

The FERC Interim Policy Statement outlines a process for quantifying greenhouse gas emissions associated with a project, and it sets a level that is to be considered “a significant threshold”² at 100,000 metric tons per year of carbon dioxide equivalents (CO2e). “(P)roposed projects with 100,000 metric tons per year of carbon dioxide equivalents (CO2e) emissions will be deemed to have a *significant impact on climate change*.”³ (emphasis added) The proposed project, while not under FERC jurisdiction, would have **3.5 to more than 5 times the CO2e emissions than what FERC deems will have a significant impact on climate change**.

TVA states, without any documentation at all, that the New Caledonia CT project would *reduce* GHG emissions by facilitating the integration of renewable generation. NEPA requires that all documents upon which a DEIS is based be made publicly available, and no such study accompanies this DEIS. Battery storage can accomplish renewables integration *without any emissions at all*.

The New Caledonia Gas Plant Will Have a Social Cost of Greenhouse Gases of Over \$1 Billion

TVA, per President Biden’s **Executive Order 13990**, did prepare a calculation of the **social cost of greenhouse gases** (carbon, NOx, and methane). The social cost represents “the economic losses that

¹ <https://www.ferc.gov/news-events/news/staff-presentation-consideration-greenhouse-gas-emissions-natural-gas>

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<https://www.ferc.gov/news-events/news/fact-sheet-interim-greenhouse-gas-ghg-emissions-policy-statement-pl21-3-00>

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³ Ibid

result from emitting one extra ton of GHGs into the atmosphere at a specific point in time.” (DEIS, p. 34) The Agency presented the calculations in Tables 3.2-1 and 3.2-2 in the DEIS, showing a range representing the maximum emissions and the Predicted Actual emissions (531,728 metric tons and 344,077 metric tons of CO₂e per year, as noted above) and various discount rates for a 30 years lifespan starting in 2025. At a 2.5% discount rate, the Social Cost of Greenhouse Gases for this project ranges from **\$1,082,809,601** (maximum) to **\$818,988,368** (predicted).

TVA then attempts to counter these extraordinary figures by stating “(W)hen the project’s direct and indirect changes are considered in combination, the project is expected to reduce TVA’s GHG emissions by facilitating the integration of renewable generation.” (DEIS, p. 37). But **TVA did not undertake any effort to quantify the indirect benefits** attributed to integration of renewable generation. Instead, the Agency states “(T)his EIS notes that the proposed project would bring about a net decrease in GHG emissions as part of TVA’s overall asset strategy, and, therefore, is expected to impart benefit to society. However, the monetary value of that benefit is not estimated.” (DEIS, p. 36) This claim, without any support, is meaningless.

We return to our first comment section and note that **utility-scale battery storage** would also facilitate the integration of renewable generation, as it is doing nationwide, with **no direct increase in the social cost of carbon**.

TVA Has Not Taken the DEIS for the New Caledonia Gas Plant Seriously

TVA has not adequately presented and analyzed additional alternatives, such as battery storage, nor did it properly analyze its own Preferred Alternative when it failed to value the indirect benefits it claims are associated with the project. TVA, as a federal agency bound to the requirements of the NEPA statute, has not taken “a hard look at all the environmental consequences before taking a major action.” *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, at 97 (1983) These environmental consequences include the emissions of 3.5 to more than 5 times a level of CO₂e that would be deemed to have a “significant impact on climate change.” The DEIS would be considered sufficient if it contained “sufficient discussion of the relevant issues and opposing viewpoints, and ... (if) the agency’s decision is fully informed and well-considered.” *Nevada v. Dept. of Energy*, 457 F.3d 78, 93 (D.C. Circuit 2006)

This Draft Environmental Impact Statement fails that test. **The Southern Alliance for Clean Energy recommends that TVA withdraw this DEIS and start over with one that considers grid-scale batteries as the Preferred Alternative.** At a minimum, TVA should withdraw this DEIS and draft a new one *after the finalization* of the upcoming Integrated Resource Plan.

Please do not hesitate to reach out with questions.



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