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March 13, 2021

VIA EMAIL TO:

Ashley Pilakowski
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**Re: Comments on TVA's Draft Environmental Assessment for Paradise
and Colbert Combustion Turbine Plants**

Dear Ms. Pilakowski:

Southern Environmental Law Center, Appalachian Voices, Energy Alabama, GASP, Shoals Environmental Alliance, Sierra Club, and Southern Alliance for Clean Energy submit these comments on TVA's draft environmental assessment for the proposed Paradise and Colbert combustion turbine plants. We have included twenty-three attachments which are incorporated into our comments.

With its mission to serve the environment and economy of the Tennessee Valley, as well as a directive from the President to decarbonize the grid and to promote environmental justice, TVA is well positioned to lead the national response to the world's climate crisis. Yet the utility's plan to build new gas power plants balks at that opportunity, proposing to accelerate climate change during the narrow moment remaining to mitigate its worst effects. Further, the proposal risks additional harm to environmental justice communities that have already shouldered decades of pollution from TVA's coal-fired plants. Rather than provide the clear-sighted analysis necessary to lead the response to the climate crisis and to achieve environmental justice, the Draft EA ignores and mischaracterizes the climate change impacts of the proposed gas plants, ignores their impacts to environmental justice communities, and fails to consider or even acknowledge reasonable, carbon-free alternatives. For these reasons, we urge TVA to prepare a full environmental impact statement that resolves these critical deficiencies and complies with NEPA.

Thank you for your consideration of our comments. Please contact us if we can answer any questions.

Sincerely,

s/ Keith Johnston

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COMMENTS

I. With plans for new gas plants at Colbert and Paradise, TVA shirks its obligation to rapidly decarbonize and achieve environmental justice, flouting a presidential mandate.

Climate change is causing immediate, devastating harms to public health, biodiversity, and economic productivity.¹ Those harms will only worsen as greenhouse gas emissions increase. While climate change is global, not all communities suffer equally. Instead, the Tennessee Valley and the Southeast are especially vulnerable.² Low-wealth and Black, indigenous, and other people of color are disproportionately harmed by climate change.³ There is broad scientific consensus that global anthropogenic CO₂ emissions must reach net zero by around 2050 to avoid the worst impacts of climate change.⁴

To address the climate crisis, President Biden ordered the entire federal government to take decisive, bold action—including swiftly decarbonizing the electricity sector. In Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, President Biden emphasized the urgency of the moment: “The United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents.”⁵ The Executive Order calls for a “government-wide approach,” as the “Federal Government must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy, marshaling the creativity, courage, and capital necessary to make our

¹ U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (Reidmiller, D.R. et al. eds), U.S. Global Change Research Program, Washington, DC (2018), <https://nca2018.globalchange.gov/>, at Summary Findings, at 25–32.

² *Id.* at 743.

³ Kristie S. Gutierrez and Catherine E. LePrevost, *Climate Justice in Rural Southeastern United States: A Review of Climate Change Impacts and Effects on Human Health*, *Int. J. Environ. Res. Public Health*, 13(2): 189 (Feb. 2016) (**Att. 1**)

⁴ IPCC Special Report at Summary for Policymakers, <https://www.ipcc.ch/sr15/chapter/spm/>, at 6 and 14.

⁵ Exec. Order No. 14008, 86 Fed. Reg. 7619, 7619 (Jan. 27, 2021).

Nation resilient in the face of this threat.”⁶ The Executive Order establishes the goals of “net-zero emissions, economy-wide, by no later than 2050”⁷ and “a carbon pollution-free electricity sector no later than 2035.”⁸

Environmental justice is a defining feature of the government-wide response to the climate crisis. The Executive Order commands that the Federal government “must deliver environmental justice in communities all across America.”⁹ That requires “investing and building a clean energy economy that creates well-paying union jobs, turning disadvantaged communities—historically marginalized and overburdened—into healthy, thriving communities, and undertaking robust actions to mitigate climate change while preparing for the impacts of climate change across rural, urban, and Tribal areas.”¹⁰ All federal agencies must “make achieving environmental justice part of their missions.”¹¹

In Executive Order 13990, President Biden directed all executive departments and agencies to “immediately review” and “take action” to address any Federal “actions during the last 4 years that conflict with these important national objectives [including the reduction of greenhouse gas emissions and advancement of environmental justice], and to immediately commence work to confront the climate crisis.”¹² The order reestablishes the Interagency Working Group on the Social Cost of Greenhouse Gases and instructs agencies to use the Social Cost of Carbon to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account.”¹³ Executive Order 13990 also makes clear that TVA should look to the Council on Environmental Quality’s 2016 guidance on climate change analysis during NEPA review.¹⁴ That guidance recommends that agencies quantify greenhouse gas emissions and provide “a qualitative summary discussion of the impacts of GHG emissions.”¹⁵

⁶ *Id.* at 7622.

⁷ *Id.*

⁸ *Id.* at 7624.

⁹ *Id.* at 7622.

¹⁰ *Id.* at 7629.

¹¹ *Id.*

¹² Exec. Order 13990, 86 Fed. Reg. 7037, 7037 (Jan. 25, 2021).

¹³ *Id.* at 7040.

¹⁴ *See id.* at 7042. This Executive Order rescinds Trump-era draft guidance, which itself rescinded CEQ’s 2016 guidance. While CEQ reviews, revises, and updates the 2016

Facing the urgent climate crisis and a clear mandate from the President to rapidly decarbonize the grid, TVA proposes to build new fossil-fuel plants. These are not minor additions TVA can easily walk away from whenever it pleases. Gas plants represent a major investment, often lasting more than forty years¹⁶ and requiring extensive new infrastructure like the gas compressor, transmission lines, and additional gas pipelines TVA proposes.¹⁷ Investing hundreds of millions of ratepayer dollars in fossil fuels now would generate avoidable and dangerous greenhouse gas emissions for decades to come, giving TVA no chance to meet Executive Order 14008's deadline to decarbonize the grid by 2035. TVA's generation decision comes at a critical moment when substantial reductions in greenhouse gas emissions are both necessary and feasible. TVA projects flat or declining load,¹⁸ and only 5% of its energy portfolio is from renewables and energy efficiency.¹⁹ TVA has no need for new fossil fuels. Instead, TVA should replace existing generation with carbon-free alternatives to align with President Biden's 2035 decarbonization mandate and to do its part in addressing the climate crisis, achieving environmental justice, and fulfilling its statutory duty as an environmental steward²⁰ for the Tennessee Valley.

guidance, it remains a useful reflection of the Administration's priorities in the interim—particularly as to the 1978 CEQ NEPA regulations on which the 2016 guidance was based.

¹⁵ Council On Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews 10 (2016) [hereinafter "CEQ Climate Guidance"] (**Att. 2**).

¹⁶ TVA, Paradise and Colbert Combustion Turbine Plants Draft Environmental Assessment 1–2 (Feb. 2021) (describing TVA's active CT units, which range from approximately twenty years to more than forty years in age) [hereinafter "Draft EA"].

¹⁷ *Id.* at 10–18.

¹⁸ TVA, 2019 Integrated Resource Plan, Vol. 1 – Final Resource Plan 6-4 (2019) [hereinafter "2019 IRP"].

¹⁹ TVA, Our Power System, <https://www.tva.com/energy/our-power-system>.

²⁰ TVA's "objectives and missions" include "being a national leader in technological innovation, low-cost power, and environmental stewardship." 16 U.S.C. § 831a(b)(5).

II. TVA’s analysis of impacts and alternatives in the Draft EA violates NEPA.

To comply with the National Environmental Policy Act (NEPA), TVA must “take a ‘hard look’ at the environmental effects of [its] planned action”²¹ to build gas plants. NEPA is our “basic national charter for protection of the environment,”²² and it promotes efforts which “will prevent or eliminate damage to the environment.”²³ NEPA’s twin aims obligate TVA to (1) consider significant aspects of the environmental effects of proposed actions and (2) inform the public that it has indeed considered environmental concerns in its decision-making process.²⁴ Accordingly, NEPA requires TVA to prepare an environmental impact statement (EIS) for “major Federal actions significantly affecting the quality of the human environment.”²⁵ An environmental assessment (EA) is a “highly significant ‘first step’” that helps an agency determine whether impacts are significant and require an EIS.²⁶

TVA’s Draft EA fails to take a hard look at the impacts of building new gas plants at Colbert and Paradise. TVA has not accurately disclosed the greenhouse gas emissions from these plants, and it has not mentioned the effects of accelerating the climate crisis. Nor has TVA considered the environmental injustice of building a new fossil-fuel plant at Colbert, near the overburdened, predominately Black community of Red Rock/Barton, or at Paradise, near overburdened, low-wealth communities. TVA’s failure to consider a single carbon-free alternative to combustion turbine gas plants means neither TVA nor the public is able to make a reasonable, informed decision. Because of the significant harms to climate change and environmental justice, TVA must prepare an EIS to more rigorously analyze this proposal’s effects and alternatives.

²¹ *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989).

²² 40 C.F.R. § 1500.1(a) (2019).

²³ 42 U.S.C. § 4321.

²⁴ *Kern v. Bureau of Land Mgmt.*, 284 F.3d 1062, 1066 (9th Cir. 2002) (citing *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983)).

²⁵ 42 U.S.C. § 4332(2)(C).

²⁶ 40 C.F.R. § 1508.9(a) (2019); *Friends of Fiery Gizzard v. Farmers Home Admin.*, 61 F.3d 501, 504 (6th Cir. 1995) (citation omitted).

A. TVA must disclose and analyze the climate impacts of building new gas plants at Colbert and Paradise.

Not only does the Draft EA propose the harmful policy choice to invest in fossil-fuel generation, but it fails TVA's obligation to take a hard look at the proposal's climate impacts.

Because “[t]he harms associated with climate change are serious and well recognized,”²⁷ carefully considering a project's climate impacts is critical to any NEPA review—particularly when the project's very purpose is the combustion of gas in power plants,²⁸ thereby emitting carbon dioxide and other greenhouse gases that drive climate change. TVA proposes to build new plants that will burn fossil fuels for decades, jeopardizing the dwindling opportunity to ward off the worst effects of climate change. Rapidly improving technologies for energy efficiency, demand response, battery storage, distributed energy resources, and utility-scale renewables equip power producers with affordable and reliable tools to reduce greenhouse gas emissions.

Despite the climate crisis and the many options to address it, TVA refuses to consider reasonable, carbon-free alternatives like energy efficiency, demand response, and battery storage. The Draft EA's quantitative analysis of the climate change emissions is misleading and incomplete. TVA must provide more accurate and meaningful analysis of those emissions, including through use of the Social Cost of Carbon. TVA must disclose the cumulative impacts of its proposed gas plants and the connected actions of its Combustion Turbine Gas Modernization program. Finally, TVA must disclose not only greenhouse gas emissions but also discuss their environmental effects.

1. TVA must accurately quantify the greenhouse gas emissions of the Colbert and Paradise gas plants, as well as the cumulative effects of its Combustion Turbine Gas Modernization program.

The Draft EA's quantification of greenhouse gas emissions is limited and misleading. TVA diminishes the impacts of the new gas plants by crediting itself for decreased emissions elsewhere. At its Paradise facility, TVA claims that 750 MW of new

²⁷ *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007).

²⁸ *See Sierra Club v. FERC*, 867 F.3d 1357, 1372 (2017) (holding that FERC must analyze the climate change effects for a project whose purpose is to burn gas in power plants).

fossil fuel generation somehow reduces greenhouse gas emissions.²⁹ To conclude that there is a “net emission decrease,” TVA credits itself with the greenhouse gas emissions eliminated when it made the independent decisions to retire the Paradise coal plant, which closed in February 2020.³⁰ TVA points to its “commitment” to modestly decrease carbon emissions “system-wide” to find building new fossil-fuel plants at Paradise and Colbert somehow has no effect on climate change.³¹

First, TVA has refused to make a real commitment to decarbonize, despite the presidential mandate in Executive Order 14008 and the growing trend of decarbonization commitments from other electric utilities.³² Second, regardless of what happens “system-wide,” *these* fossil fuel plants would add more greenhouse gas to the atmosphere, exacerbating climate change. Even if other regulatory schemes allow for such offset accounting,³³ NEPA does not. TVA is not “excused from making emissions estimates just because the emissions in question might be partially offset by reductions elsewhere.”³⁴ Instead, TVA must accurately quantify and consider the greenhouse gas emissions of this proposed action.

²⁹ Draft EA 38 (“[O]peration of the CT units at Paradise would result in a net emission decrease of regulated pollutants, including GHGs.”).

³⁰ TVA already conducted NEPA review of that decision and took credit there for the related reduction in greenhouse gas emissions. *See* TVA, Potential Paradise Fossil Plant Retirement, Final Environmental Assessment 18 (Feb. 2019) (“In terms of GHG emissions, the PAF retirement would eliminate a relatively large source of CO₂ emissions.”).

³¹ “[T]he potential emissions from the [Colbert] CT plant would represent a 1.1 percent increase in state emissions and approximately 0.02 percent of emissions on a national scale. However, as noted in the 2019 IRP, during the decade following the CT retirements, i.e., 2021–2030, annual average system-wide emissions of CO₂ would decrease by 0.6 percent. Thus, the operation of the CT plant at Colbert would not negatively impact regional and national GHG emissions or climate change.” Draft EA 39.

³² Jeff St. John, *The 5 Biggest US Utilities Committing to Zero Carbon Emissions by 2050*, Green Tech Media (Sept. 16, 2020), <https://bit.ly/3tkNgpV> (Att. 3)

³³ The Draft EA anticipates that the decreased emissions from shutting down a coal-fired unit at Paradise make a Prevention of Significant Deterioration Clean Air Act permit inapplicable for the proposed gas plant. Draft EA 32.

³⁴ *Sierra Club v. FERC*, 867 F.3d at 1374–75.

For both gas plants, the Draft EA diminishes the greenhouse gas emissions of burning new fossil fuels by asserting that any emissions would represent “an insignificant increase in regional and national emissions” and “would not negatively impact regional and national GHG emissions or climate change.”³⁵ But if building new gas-fired power plants does not negatively impact climate change, nothing does.

Rather than dismiss the gas plants’ climate impacts as individually minor, TVA must quantify cumulative greenhouse gas emissions from its decision to build new fossil-fuel generation. A cumulative impact is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”³⁶ The “large-scale nature of environmental issues like climate change show why cumulative impacts analysis proves vital to the overall NEPA analysis. The cumulative impacts analysis was designed precisely to determine whether ‘a small amount here, a small amount there, and still more at another point could add up to something with a much greater impact.’”³⁷ If TVA “ever hopes to determine the true impact of its projects on climate change, it can do so only by looking at projects in combination with each other.”³⁸

CEQ has rejected TVA’s justification—that two gas-fired power plants do not significantly worsen climate change by themselves—as misunderstanding the climate analysis NEPA requires:

CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change

³⁵ Draft EA 38, 39.

³⁶ 40 C.F.R. § 1508.7 (2019).

³⁷ *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 457 F. Supp. 3d 880, 894 (D. Mont. 2020) (citation omitted).

³⁸ *Id.*

impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.³⁹

Cumulatively, the electricity sector represents a 27 percent of the United States' greenhouse gas emissions.⁴⁰ TVA is the largest public power utility and among the nation's leading emitters of greenhouse gases. There is no action that contributes more significantly to climate change than building major fossil-fuel infrastructure like the gas plants TVA proposes.

To address cumulative impacts, TVA must provide data on the combined emissions of building new combustion turbine gas units at Paradise and Colbert. Further, TVA must analyze and disclose the climate impacts of its Combustion Turbine Gas Modernization program. NEPA requires analysis of the cumulative impacts of connected actions.⁴¹ Actions are connected when they "[a]re interdependent parts of a larger action and depend on the larger action for their justification."⁴² TVA justifies its decision to build new gas units as part of a program to modernize its combustion turbine gas fleet. "In Fiscal Year 2019, TVA completed a CT Modernization Study to evaluate the condition of TVA's current CT units and form recommendations for investments to ensure a reliable peaking fleet into the future."⁴³ Pursuant to that study, TVA determined that "it is prudent to replace [Allen and Johnsonville CT] units with more efficient frame CT technology available today."⁴⁴ TVA's decision to build new gas units at Paradise and Colbert is part of a broader Combustion Turbine Gas Modernization program, and TVA must take a hard look at the program's climate impacts. For example, TVA seems to

³⁹ CEQ Climate Guidance 11.

⁴⁰ EPA, *Sources of Greenhouse Gas Emissions*, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (Att. 4).

⁴¹ 40 C.F.R. §§ 1508.7, 1508.25(a) (2019).

⁴² 40 C.F.R. § 1508.25(a)(1)(iii) (2019).

⁴³ Draft EA 1.

⁴⁴ *Id.* at 2.

unreasonably assume that it must replace at least as much combustion turbine gas generation as it retires. But what are the climate impacts of replacing all of the “Most Challenged” combustion turbine gas units with new gas? What about replacing the “Challenged” gas units, too? TVA must disclose and analyze these program-wide climate impacts.

2. TVA should use the Social Cost of Carbon to consider and disclose the climate impacts of its proposal, as compared to the status quo and reasonable alternatives.

To inform itself and the public about climate impacts, and to meet its hard look requirement, TVA must disclose the carbon costs of its decision to add new gas generation as compared to reasonable, carbon-free alternatives.

TVA should quantify those impacts using the Social Cost of Carbon. Developed in 2010 and updated in 2016, the Social Cost of Carbon is a scientifically derived metric to “provide a consistent approach for agencies to quantify [climate change] damage in dollars.”⁴⁵ The Social Cost of Carbon translates a one-ton increase in carbon dioxide emissions into changes in atmospheric greenhouse concentrations, consequent changes in temperature, and resulting economic damages.⁴⁶ Those harms include “changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services.”⁴⁷ The 2016 update estimated that every additional ton of carbon dioxide released from anywhere on Earth will cause an additional \$42 in climate damages.⁴⁸ Not only will the Social Cost of Carbon convey the harms of TVA’s proposal, but it allows TVA “to incorporate the social benefits of reducing carbon dioxide (CO₂) emissions”⁴⁹ in carbon-free alternatives to building new gas.

⁴⁵ *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at P 45 (Mar. 14, 2018).

⁴⁶ See Working Group on the Social Cost of Carbon, *Technical Support Document 5* (2010), available at https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf (Att. 5).

⁴⁷ *Id.* at 2.

⁴⁸ Working Group on the Social Cost of Carbon, *Technical Support Document 3–4* (2016), available at https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf (Att. 6).

⁴⁹ Working Group on the Social Cost of Carbon, *Technical Support Document 1* (2010).

Executive Order 13990 instructed federal agencies to use the Social Cost of Carbon,⁵⁰ which has been widely endorsed by economists and scientists.⁵¹ The Social Cost of Carbon is useful and appropriate here to meaningfully convey the impacts of building new gas plants—and thereby adding decades of greenhouse gas emissions—in comparison to carbon-free alternatives like energy efficiency, demand response, renewable energy, or battery storage.

3. The Draft EA ignores the climate *impacts* of building the proposed new gas plants.

TVA has not discussed climate impacts. Under NEPA, TVA must “quantify *and consider*” a project’s downstream greenhouse gas emissions, or explain why it cannot.⁵² Even if TVA’s quantitative analysis were adequate, TVA must do more. “The key requirement of NEPA . . . is that the agency consider and disclose the *actual environmental effects* in a manner that . . . brings those effects to bear on decisions to take particular actions that significantly affect the environment.”⁵³ Therefore, in the context of greenhouse gas emissions, NEPA review must “include a discussion of the ‘significance’ of this indirect effect . . . as well as ‘the incremental impact of the action.’”⁵⁴

TVA includes a brief, general discussion of climate change and recognizes that it is caused by activities that burn fossil fuels like gas. TVA does not discuss the impacts of running gas-fired power plants for decades to come. TVA should include a “qualitative summary discussion of the impacts of GHG emissions based on authoritative reports.”⁵⁵ Those effects include “more frequent and intense heat waves, longer fire seasons and

⁵⁰ Exec. Order 13990, 86 Fed. Reg. 7037, 7040 (Jan. 25, 2021).

⁵¹ See Nat’l Acads. Sci., Eng’g & Med., *Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide* 3, 10–17 (2017) (**Att. 7**); Nat’l Acads. Sci., Eng’g & Med., *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update* 1 (2016) (**Att. 8**); Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gas*, 357 *Science* 655 (2017) (**Att. 9**).

⁵² *Sierra Club v. FERC*, 867 F.3d at 1375 (emphasis added).

⁵³ *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 96 (1983) (emphasis added). See 40 C.F.R. § 1502.16(a), (b) (2019) (requiring examination of effects and their significance).

⁵⁴ *Sierra Club v. FERC*, 867 F.3d at 1374.

⁵⁵ CEQ Climate Guidance 10.

more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, ocean acidification, and harm to wildlife and ecosystems.”⁵⁶

These impacts are not theoretical, and burning fossil fuels is the problem, not the answer. Historically cold weather swept across the United States in February 2021,⁵⁷ devastating many Texans who were left without power due, in large part, to failing gas facilities.⁵⁸ The same historic weather deprived many TVA-area residents of clean, reliable water for days, as freezing temperatures wreaked havoc on the water infrastructure of Memphis Light Gas & Water, TVA’s largest customer.⁵⁹ For TVA, the past three years have been the wettest years in 131 years of record keeping, and 2020 set the single-year record with rainfall 139% above normal.⁶⁰ These climate impacts should be top of mind for TVA, given its mission to manage the Tennessee River watershed and control flooding in the Valley. A robust discussion of actual and worsening climate effects like these is essential for NEPA review of TVA’s generation decisions.

Considering reasonable alternatives, disclosing their greenhouse gas emissions, and discussing their environmental impacts, including through the Social Cost of Carbon, will ensure that TVA and the public have the information necessary to make a reasoned decision.

B. TVA must disclose and analyze the impacts of the new gas plants on local air quality and environmental justice communities.

1. TVA fails to take a “hard look” at impacts to local air quality.

TVA’s analysis of the impact of the proposed gas plants on air quality is premised on its assertion that the new plants will comply with permit limits set by “applicable state

⁵⁶ *Id.* at 9.

⁵⁷ Oliver Milman, *Heating Arctic May Be to Blame for Snowstorms in Texas, Scientists Argue*, The Guardian (Feb. 17, 2021), <https://bit.ly/3vij9kC> (Att. 10).

⁵⁸ Erin Douglas, *Texas Largely Relies on Natural Gas for Power. It Wasn’t Ready for the Extreme Cold*, Texas Tribune (Feb. 16, 2021), <https://bit.ly/3rWZgxD> (Att. 11).

⁵⁹ Samuel Hardiman, *Why Was Memphis’ Water Infrastructure in Such Bad Shape? Politics Didn’t Help*, Memphis Commercial Appeal (Feb. 22, 2021), <https://bit.ly/30FynCa> (Att. 12).

⁶⁰ *TVA Calls 2020 the Wettest Year on Record for Tennessee Valley Authority*, WBIR (Jan. 5, 2021), <https://bit.ly/3tg5xo5> (Att. 13).

and federal regulations.”⁶¹ Even though the new gas plants will “result in an increase in local emissions,” TVA concludes that these increases will not be significant because of these permit limits: “[C]ompliance with PSD requirements . . . ensures there is no significant impact to or deterioration of air quality due to the proposed project.”⁶² But permit compliance alone cannot justify a not significant finding under NEPA. Even the largest polluters must comply with the conditions of applicable permits, and yet their emissions may still be significant and warrant review in a NEPA document. Indeed, some air pollutants, like fine particulates, have harmful effects even when air quality standards are not violated.⁶³ TVA must actually perform *some analysis* of impacts to air quality to justify the conclusion presented in the Draft EA.⁶⁴ It failed to do so.

2. TVA fails to take a “hard look” at disproportionate impacts on environmental justice communities.

TVA’s cursory approach to assessing the impacts of the proposed gas plants on air quality is even more problematic in the context of its environmental justice analysis. People of color and low-wealth communities often bear a disproportionate burden of the pollution caused by power plants, compressor stations, and other industrial facilities.⁶⁵

⁶¹ Draft EA 31, 33.

⁶² *Id.* at 36.

⁶³ *Friends of Buckingham*, 947 F.3d 68, 92 (4th Cir. 2020) (“[E]ven when NAAQS are not violated as to this particulate matter, the record reflects that exposure to PM2.5 will increase the risk of asthma, heart attacks, and death.”); *Am. Trucking Ass’ns v. EPA*, 283 F.3d 355, 360 (D.C. Cir. 2002) (recognizing the “lack of a threshold concentration below which [particulate matter and ozone] are known to be harmless”).

⁶⁴ *Coal. to Protect Puget Sound Habitat v U.S. Army Corps of Eng’rs*, 417 F.Supp.3d 1354, 1361 (W.D. Wash. 2019) (observing that the analysis in an environmental assessment “‘must be more than perfunctory’ and must be based on ‘some quantified or detailed information’”) (quoting *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993-94 (9th Cir. 2004)).

⁶⁵ *Friends of Buckingham*, 947 F.3d at 87 (quoting Nicky Sheats, *Achieving Emissions Reductions for Environmental Justice Communities Through Climate Change Mitigation Policy*, 41 Wm. & Mary Env’tl. L. & Pol’y Rev. 377, 382 (2017) (“There is evidence that a disproportionate number of environmental hazards, polluting facilities, and other unwanted land uses are located in communities of color and low-income communities.”)).

Confronting this legacy is a priority of the federal government.⁶⁶ In January, President Biden declared that the federal government “must deliver environmental justice in communities all across America” and that federal agencies “shall make achieving environmental justice part of their missions.”⁶⁷ NEPA review is an important tool for reaching these goals, and it is critical that TVA do this analysis in the Draft EA for the Colbert and Paradise gas plants.

“The purpose of an environmental justice analysis is to determine whether a project will have a disproportionately adverse effect on minority and low income populations.”⁶⁸ Broadly speaking, this requires two steps. First, an agency must correctly identify the environmental justice communities in the vicinity of the proposed action.⁶⁹ But it should be circumspect when relying solely on desktop demographic tools like EPA’s EJSCREEN and census data. The analysis provided by these tools can often be too coarse to detect the presence of environmental justice communities concentrated in a small area.⁷⁰ As EPA itself has cautioned, “[t]he fact that census data can only be disaggregated to certain prescribed levels (*e.g.*, census tracts, census blocks) suggests that pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects, may be missed in a traditional census tract-based analysis.”⁷¹ Outreach in potentially impacted areas to identify people

⁶⁶ See Exec. Order No. 14008, 86 Fed. Reg. 7619, 7629 (Jan. 27, 2021).

⁶⁷ *Id.* at 7622, 7629.

⁶⁸ *Friends of Buckingham*, 947 F.3d at 87 (quoting *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003)).

⁶⁹ *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng’rs*, 255 F.Supp.3d 101, 136-37 (D.D.C. 2017) (citing Council on Env’tl. Quality, Environmental Justice Guidance Under the National Environmental Policy Act (Dec. 10, 1997)); *Friends of Buckingham*, 947 F.3d at 88 (“The minority EJ community designation is important because, if Union Hill is considered a minority EJ community, then information about African American populations having a greater prevalence of asthma and other health issues is an important consideration.” (internal quotation marks and brackets omitted)).

⁷⁰ *Friends of Buckingham*, 947 F.3d at 88; *cf. Standing Rock Sioux Tribe*, 255 F.Supp.3d at 137 (“[T]he unit of geographic analysis for the environmental-justice assessment should be chosen so as not to artificially dilute or inflate the affected minority population.”) (internal quotation marks and citation omitted).

⁷¹ EPA, Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses § 2.1.1 (1998), available at <https://bit.ly/3r7w7zj> (Att. 14).

of color and low-wealth communities is critical.⁷² EPA recommends supplementing census data with local demographic data and research,⁷³ and specifically notes that EPA staff does not use EJSCREEN “[a]s a means to identify or label an area as an ‘EJ community’” or “[a]s a basis for agency decision-making or making a determination regarding the existence or absence of EJ concerns.”⁷⁴

Second, once the agency has identified environmental justice communities, it must assess the impacts of the project on the people in those specific communities. In the air quality context, reliance on air quality standards alone is an insufficient basis for an environmental justice analysis. Instead, the agency must examine the impacts of the pollutants from the proposed facility with an analysis “tailored to [the] specific EJ community.”⁷⁵ As we noted above, some air pollutants, like fine particulates, have harmful effects even when air quality standards are not violated.⁷⁶ The Draft EA fails to present an appropriate environmental justice analysis for both the Colbert and Paradise gas plants.

TVA’s environmental justice analysis for the Colbert gas plants is flawed in two respects. First, the utility relied solely on a desktop demographics analysis using EJSCREEN and census block data which failed to identify the predominantly Black community of Red Rock/Barton located less than a mile from TVA’s facility. Residents in this community organized in 2015 and 2016 to oppose TVA’s plans to cap its coal ash lagoons and permanently store its waste ash on the Colbert site. They frequently communicated with TVA about its coal ash disposal plans, participated in filming a video entitled “Ashes to Ashes” documenting their experiences, and were the subject of local

⁷² Council on Env'tl. Quality, Environmental Justice Guidance Under the National Environmental Policy Act 4, 9-13 (Dec. 10, 1997) (“CEQ Environmental Justice Guidance”) (**Att. 15**).

⁷³ See Fed. Interagency Working Grp. on Env'tl. Justice, Promising Practices for EJ Methodologies in NEPA Reviews 21 (2016), available at <https://bit.ly/306MZdi> (**Att. 16**).

⁷⁴ EPA, How Does EPA Use EJSCREEN?, <https://www.epa.gov/ejscreen/how-does-epa-use-ejscreen> (last accessed Mar. 11, 2021).

⁷⁵ *Friends of Buckingham*, 947 F.3d at 90-92.

⁷⁶ *Id.* at 92.

news reporting.⁷⁷ Longtime residents expressed concern about particulates that covered their homes and cars from the stacks of the Colbert Fossil Plant before it was closed.⁷⁸ Yet TVA never acknowledges the existence of the Red Rock/Barton community in the Draft EA, despite the community's record of engagement with the utility.

The fate of the Red Rock/Barton community in the Draft EA is a problem faced by other environmental justice communities.⁷⁹ It is arbitrary for TVA to conclude that no communities of people of color will be affected by the proposed gas plants when it has evidence that one such community, on the boundary of the utility's property, has spoken up and raised concerns about other issues at the site. At a bare minimum, TVA must identify this community and any other environmental justice communities hidden beneath the coarse analytics of its desktop demographic analysis.

Second, TVA concludes—again without analysis—that because the proposed gas plants at Colbert would comply with the conditions of a Clean Air Act permit, there will be no disproportionate impacts to environmental justice communities. But the Fourth Circuit flatly rejected this approach in *Friends of Buckingham*, a case involving emissions from a gas-fired compressor station in the historic community of Union Hill, Virginia: “[B]lindly relying on ambient air standards is not a sufficiently searching analysis of air quality standards for an EJ community.”⁸⁰ The Fourth Circuit had good reason to dismiss the notion that mere compliance with NAAQS means there will be no disproportionate adverse health risks. Whether a facility would allow an area to comply with air quality standards is distinct from whether it would have a disproportionately high and adverse effect on environmental justice populations. Otherwise, consideration of disproportionate harm would be required only for facilities that would contribute to a violation of such air quality standards—and thus could not lawfully be built.⁸¹ TVA must

⁷⁷ Russ Corey, *Residents Suspect Cancer Tied to Steam Plant*, Times Daily (Sept. 4, 2016), <https://bit.ly/3rINaYJ> (Att. 17); Russ Corey, *Residents Considering Legal Action Against TVA*, Times Daily (Nov. 8, 2016), <https://bit.ly/2NdVNeT>; Southern Exposure, *Ashes to Ashes, a Film by Kaitlin McMurray*, <https://vimeo.com/293234406>.

⁷⁸ Southern Exposure, *Ashes to Ashes, a Film by Kaitlin McMurray*, <https://vimeo.com/293234406>.

⁷⁹ *Friends of Buckingham*, 947 F.3d at 88-89.

⁸⁰ *Id.* at 93.

⁸¹ EPA, Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis § 3.2.2 (1998), <https://bit.ly/3rV2SQJ> (explaining that even

assess the impact of the proposed gas-plant emissions on the specific environmental justice communities that live near the Colbert site, including the low-income communities identified in TVA’s desktop analysis and the Red Rock/Barton community.

TVA’s analysis of the impacts of emissions from the proposed gas plants at the Paradise location is also flawed. Here, TVA concludes that because it shuttered the Paradise Unit 3 coal plant in February 2020, low-wealth communities will actually experience less pollution once the gas plants are operational than they did in the past.⁸² TVA’s argument misdirects the focus of the analysis away from the proposed gas plants to an unrelated action—the closure of a different power plant not part of the Draft EA—that the utility took more than a year ago.⁸³ The question that TVA must address now, in 2021, is whether the emissions from the *new* gas plants—the three proposed combustion turbines—will cause a disproportionate impact on the neighboring low-wealth communities. TVA’s Draft EA does not attempt to answer that question.

Moreover, TVA’s approach to environmental justice here highlights the grave injustice faced by communities of people of color and low-wealth communities around the country for decades. The utility’s approach, in essence, asks the residents near Paradise to accept this reasoning: Because the air quality in your community has been poor in the past, you will not mind or be affected by more emissions from our new gas plants. But the historic, unfair burden of pollution is precisely what an environmental justice analysis is supposed to identify and correct. TVA must provide a meaningful analysis of the impacts of the Paradise gas plants on nearby environmental justice communities.

3. TVA ignores the cumulative impacts on environmental justice communities.

TVA unlawfully limited its cumulative impacts analysis to only “those resource issues potentially adversely affected by project activities.”⁸⁴ But the purpose of a cumulative impacts analysis is to identify the “incremental impact” of the proposed

harms that are not “significant” in NEPA context may disproportionately or severely harm environmental justice communities).

⁸² Draft EA 160.

⁸³ TVA, Paradise Fossil Plant, <https://www.tva.com/energy/our-power-system/coal/paradise-fossil-plant> (last accessed Mar. 12, 2021).

⁸⁴ Draft EA 168.

action, even when that action has “*individually minor*” impacts.⁸⁵ NEPA requires that the Draft EA contain “some quantified or detailed information” about cumulative impacts and that the “analysis must be more than perfunctory[.]”⁸⁶ TVA cannot wave off its obligation to conduct a meaningful analysis of cumulative impacts solely because it concludes that the direct and indirect impacts of its proposed gas plants are minor.

TVA’s Draft EA must examine the cumulative air quality impacts on environmental justice communities of the expansion of the Cherokee Industrial Landfill. Like the proposed gas plants, the landfill is located near the predominantly Black community of Red Rock/Barton.⁸⁷ The landfill is slated for a significant expansion, increasing its footprint by an additional eight acres, fourteen percent larger than its current size.⁸⁸ According to state records, the waste stream permitted at the landfill includes “nonhazardous industrial wastes, nonhazardous industrial sludge, construction and demolition wastes, rubbish . . . , asbestos, and tires” and contemplates the open burning of waste with a subsequent approval from state regulators.⁸⁹ Yet the Draft EA does not acknowledge, let alone assess, the potential cumulative impacts to local air quality for the Red Rock/Barton community next door to the proposed Colbert gas plants and does not satisfy NEPA.

⁸⁵ 40 C.F.R. § 1508.7 (2019) (defining “cumulative impacts” and recognizing that “[c]umulative impacts can result from individually minor but collectively significant actions taking place over a period of time”) (emphasis added).

⁸⁶ *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 993-94 (internal quotation marks omitted).

⁸⁷ Draft EA 168.

⁸⁸ *Id.*

⁸⁹ Ala. Dep’t of Env’tl. Mgmt., Preliminary Determination, Permit Renewal/Major Modification, Cherokee Industrial Landfill, Permit No. 17-10 at 6, 7 (Sept. 11, 2020), <http://adem.alabama.gov/newsEvents/notices/sep20/pdfs/9cherokee.pdf> (Att. 18).

C. TVA must consider reasonable alternatives in the Draft EA.

1. TVA’s narrow purpose and restricted alternatives analysis violates NEPA.

TVA ignores reasonable, carbon-free alternatives to the proposed gas plants, even though these alternatives could eliminate the project’s greenhouse gas emissions and its impacts on environmental justice communities.⁹⁰ These alternatives include:

- Retiring, but not replacing, the Allen and Johnsonville gas plants
- Energy efficiency, demand response, solar, and battery storage options
- Reasonable combinations of carbon-free technology, such as demand response or solar combined with battery storage

Under NEPA and the 1978 NEPA implementing regulations, federal agencies must evaluate reasonable alternatives to a proposed action in an environmental assessment.⁹¹ An agency need not evaluate every conceivable alternative; “[o]nly alternatives that accomplish the purposes of the proposed action are considered reasonable.”⁹² But a federal agency “cannot ‘define [a] project so narrowly that it foreclose[s] reasonable

⁹⁰ CEQ Climate Guidance 15 (counseling that “a comparison among these alternatives based on GHG emissions and any potential mitigation measures can be useful to advance a reasoned choice among alternatives and mitigation actions”); CEQ Environmental Justice Guidance at 10 (where a disproportionate effect on environmental justice communities is identified, urging agencies to “heighten agency attention to alternatives (including alternative sites)”).

⁹¹ 40 C.F.R. § 1508.9(b) (2019) (stating that an environmental assessment “[s]hall include brief discussions . . . of alternatives as required by section 102(2)(E)”; 42 U.S.C. § 4332(2)(E) (mandating that “all agencies of the Federal Government shall . . . study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources”); *Little Traverse Lake Prop. Owners Ass’n v. Nat’l Park Serv.*, 883 F.3d 644, 648-49 (6th Cir. 2018) (recognizing an agency’s obligation to consider alternatives in an environmental assessment).

⁹² *Little Traverse Lake Prop. Owners Ass’n*, 883 F.3d at 655-56 (quoting *Webster v. Dep’t of Agric.*, 685 F.3d 411, 422 (4th Cir. 2012)).

consideration of alternatives.”⁹³ Courts “may reject an agency’s statement of purpose and need as ‘unreasonably narrow’ if the statement ‘compels the selection of a particular alternative.’”⁹⁴ TVA’s Draft EA does not meet NEPA’s requirements.

TVA defines the purpose of its proposed action so narrowly that it gives the agency a perfunctory, binary choice: (1) do nothing or (2) replace old gas plants with new gas plants:

[T]he purpose of the proposed action is to replace the existing capacity from the retirement of 1,400 MW of frame CTs at the Allen and Johnsonville sites with the addition of 1,500 MW of CT capacity to be split between TVA’s Paradise and Colbert sites for commercial operation no later than December 31, 2023.⁹⁵

The Draft EA’s alternatives closely track this narrow purpose, never considering or even mentioning the possibility that TVA may not need to replace this peaking capacity *at all* or that clean, carbon-free alternatives to the proposed gas plants exist. TVA only considered “various gas asset types” to replace retired generation at Allen and Johnsonville, before settling on “gas-fired frame combustion turbines” because of their ability meet peak demand.⁹⁶ There is no analysis of an option in which TVA retires, but does not replace, the Allen and Johnsonville plants and no mention of energy efficiency, demand response, and battery storage, all viable peaking resources, or other carbon-free alternatives.

The Draft EA’s restricted analysis is not consistent with the 2019 IRP. To be sure, the IRP contemplates the addition of some gas-fired combustion turbines in the future. But it also emphasizes that the utility must have flexibility to adjust its plans to ongoing changes in the energy landscape of the Tennessee Valley. The IRP does not select a preferred scenario for energy development, instead opting to recognize that “a variety of

⁹³ *Id.* at 656 (quoting *Utah Envtl. Cong. v. Bosworth*, 439 F.3d 1184, 1195 (10th Cir. 2006)); *see also Nat. Res. Def. Council v. Nat’l Park Serv.*, 250 F.Supp.3d 1260, 1290 (M.D. Fla. 2017).

⁹⁴ *Id.* (quoting *Theodore Roosevelt Conservation P’ship v. Salazar*, 661 F.3d 66, 73 (D.C. Cir. 2011)).

⁹⁵ Draft EA 1.

⁹⁶ *Id.* at 7.

future scenarios are possible and each strategy has positive aspects.”⁹⁷ TVA went on to select *all* of the IRP results for its final recommendation “to provide flexibility for how the future evolves.”⁹⁸ For gas specifically, the IRP observes that the need for new gas generation will depend on “demand for electricity, solar penetration, and evolution of other peaking technologies.”⁹⁹ In other words, the IRP contemplates later analysis at the individual project stage to gauge the pace, scope, and cost of these changes and to determine the best manner and resources to address them. The Draft EA never acknowledges TVA’s commitment to resource flexibility, let alone offers a robust alternatives analysis of these options.

2. TVA must evaluate an alternative which retires, but does not replace, the Allen and Johnsonville gas plants.

One factor identified in the IRP—changes in the “demand for electricity”—raises significant questions about the need for the proposed gas plants. In the Draft EA, TVA assumes, again without acknowledgment, that it will need to replace the 1400 MWs of gas plants at Allen and Johnsonville that it plans to retire. But it is far from clear that TVA must replace this retiring capacity *at all*, let alone with another 1400 MW of gas generation that will pollute for decades into the future. Indeed, during the recent extreme weather event in February 2021, TVA touted the fact that it was not only able to meet its own three-year high of demand, but was also able to send excess electricity outside of the region to assist neighboring utilities who were suffering grid outages.¹⁰⁰ Further, while TVA credited the diversity of its generation for reliable service during the extreme

⁹⁷ 2019 IRP ES-1.

⁹⁸ *Id.*

⁹⁹ *Id.* at ES-4.

¹⁰⁰ Dave Flessner, *Winter Weather Pushes TVA Power Demand to 3-year High for Winter Peak*, Chattanooga Times Free Press (Feb. 17, 2021), <https://bit.ly/3bzZN2x> (**Att. 19**); Dave Flessner, *TVA Is More Prepared for Winter Weather than Texas Utilities*, Chattanooga Times Free Press (Feb. 26, 2021), <https://bit.ly/3esgvTv> (**Att. 20**); Samuel Hardiman, Daniella Medina & Brittany Crocker, *Why the Power in Tennessee Stayed on While Texas, Arkansas Had Rolling Blackouts*, Tennessean (Feb. 17, 2021), <https://bit.ly/3l5Rqiv> (“TVA expected to hit peak demand for the week on Tuesday morning with an estimated 28,500 megawatts, but that morning it reached only about 28,141 megawatts, the company said. TVA had 36,000 megawatts of capacity in anticipation of the spike.”) (**Att. 21**).

weather, adding more gas plants hardly increases the diversity of the utility's fleet.¹⁰¹ TVA also maintains a large reserve margin, one that is substantially larger than recommended by the North American Electric Reliability Corporation to maintain reliability,¹⁰² and expects demand "to be flat, or even declining slightly, over the next 10 years."¹⁰³

In addition, demand for TVA power may decline further because several customers are evaluating terminating their power supply contracts with the utility. These customers include four local utilities that filed a petition with the Federal Energy Regulatory Commission for unbundled access to TVA's transmission grid.¹⁰⁴ These four utilities represent roughly three to four percent of TVA's overall load. TVA's largest customer, Memphis Light, Gas & Water, representing another ten percent of TVA's load, has also actively considered other power supply options. While the CEO of the Memphis utility recently advised suspending that process, he also noted a number of uncertainties that may spur the utility to revisit the issue in the near future.¹⁰⁵ TVA has been so concerned about the defection of its distribution utility customers and the corresponding load loss that, in 2019, it made a dramatic change in its power supply contracts in an attempt to forever lock in as much of its load as possible.¹⁰⁶

These details, and their implication that TVA has excess generating capacity, are specifically the types of changes in the energy landscape that TVA pledged, in the 2019

¹⁰¹ Cf. Erin Douglas, *Texas Largely Relies on Natural Gas for Power. It Wasn't Ready for the Extreme Cold*, Texas Tribune (Feb. 16, 2021), <https://bit.ly/3l6EMQh>.

¹⁰² N. Am. Electric Reliability Corp., *2020 Long-Term Reliability Assessment* 117 (Dec. 2020), <https://bit.ly/3qFPBdh> (Att. 22).

¹⁰³ 2019 IRP 1-4.

¹⁰⁴ Compl. and Pet. for Order Under Federal Power Act Sections 210 and 211A Against TVA., *Athens Util. Bd. v. TVA*, Nos. EL21-40-000 & TX21-1-000 (FERC Jan. 21, 2021).

¹⁰⁵ Jeni Diprizio, *MLGW President Recommends Staying with TVA, Suspending Search for Another Power Supplier, for Now*, Local Memphis (Mar. 3, 2021), <https://bit.ly/3t9guYC> (Att. 23).

¹⁰⁶ Several of the signatories to these comments have filed litigation against TVA for adopting illegal perpetual contracts in violation of the TVA Act and NEPA. Compl., *Protect Our Aquifer v. Tenn. Valley Auth.*, No. 2:20-cv-02615 (W.D. Tenn. Aug. 17, 2020).

IRP, to evaluate.¹⁰⁷ They raise serious questions about whether there is even a need to replace the 1400 MW of gas generation that TVA is retiring, but the Draft EA never grapples with them. TVA must evaluate an alternative that retires, but does not replace, the Allen and Johnsonville plants.

Another alternative potentially affecting demand that TVA has failed to discuss is the proposed Southeast Energy Exchange Market (SEEM), currently pending before the Federal Energy Regulatory Commission.¹⁰⁸ The SEEM was not part of the 2019 IRP, nor is it mentioned in the Draft EA. TVA must analyze whether SEEM could provide an alternative to building the proposed new gas plants.

3. TVA must evaluate the use of carbon-free options, alone or in combination, as alternatives to the proposed gas plants.

A second factor identified in TVA's 2019 IRP—"the evolution of other peaking technologies"—also warrants review in the Draft EA's alternatives analysis. The TVA Act requires the utility to consider energy efficiency and "to treat demand and supply resources on a consistent integrated basis."¹⁰⁹ And TVA's own sensitivity analysis in the 2019 IRP identified the value of these resources: when artificial caps are removed, the planning model picks energy efficiency and demand response instead of new gas generation.¹¹⁰ Specifically, the sensitivity analysis revealed that 1900 MW of energy efficiency and demand response displace the need for new gas-fired combustion turbines like the plants proposed for Colbert and Paradise.¹¹¹

The IRP also identifies demand response and battery storage options as peaking technologies with the potential to provide the same reliability and flexibility as the proposed gas plants.¹¹² For batteries, TVA goes so far as to express the goal of gaining

¹⁰⁷ 2019 IRP ES-3.

¹⁰⁸ Revisions to Joint Open Access Transmission Tariff to Implement Non-Firm Energy Exchange Transmission Service, *Duke Energy Carolinas, LLC and Duke Energy Progress, LLC*, FERC Docket No. ER21-1115-000, (Feb. 12, 2021).

¹⁰⁹ 16 U.S.C. § 831m-1(2).

¹¹⁰ TVA, 2019 IRP Working Group Presentation 52-57 (May 13, 2019).

¹¹¹ *Id.* at 55.

¹¹² 2019 IRP ES-1 ("Gas, storage and demand response additions provide reliability and/or flexibility."); Draft EA 1 (identifying the proposed combustion turbines as a type of peaking resource that provides reliability and flexibility).

“early experience with battery storage on its system” to understand how this new technology can be used “to provide economic benefit and system flexibility”¹¹³ and notes that “the trajectory and timing of [battery storage] additions” are in flux as the technology evolves.¹¹⁴ TVA also committed to “continue to monitor rapidly evolving battery storage technologies for improving economics.”¹¹⁵

Yet while the IRP identifies these carbon-free options, the Draft EA does not carry forward the analysis. TVA simply leaves unanswered any questions about whether energy efficiency, demand response, battery storage—or any other carbon-free option—is today, in 2021, a competitive alternative to the proposed gas plants. Can energy efficiency and demand response replace the proposed gas plants? Are the Colbert or Paradise locations suitable sites for the utility to gain early experience with battery storage? Has battery technology evolved since 2019 as contemplated by the IRP? The Draft EA is silent, conflicting with TVA’s own assessments in 2019.

TVA’s restricted analysis also does not track the evolving facts on the ground. In 2020, TVA announced two battery storage projects, including a solar plus storage Green Invest project in Mississippi (50 MW for four hours) and a storage-only project owned by TVA in East Tennessee (40 MW).¹¹⁶

¹¹³ 2019 IRP ES-4.

¹¹⁴ *Id.*

¹¹⁵ *Id.* at § 8.2.2. TVA’s IRP planning mandate requires TVA to plan “to provide adequate and reliable service to electric customers of the Tennessee Valley Authority at the lowest system cost.” 16 U.S.C. § 831m-1. This requirement does not necessarily mean TVA must select the cheapest option to provide power. *See Ky. Coal Ass’n v. Tenn. Valley Auth.*, 804 F.3d 799, 802 (6th Cir. 2015) (acknowledging that in the context of the TVA Act, “the term ‘costs’ . . . means more than dollars and cents,” and can include, for example, costs to human health and the environment); *see also* 16 U.S.C. 831n-4(f) (in setting rates, TVA should have “due regard for the primary objectives of the chapter”); *see id.* § 831a(b)(5) (requiring Board members to affirm “support for the objectives and missions of the Corporation, including being a national leader in technological innovation, low-cost power, and environmental stewardship”).

¹¹⁶ *See* Press Release, TVA, First TVA-owned Battery Storage to Shape Energy Future (Sept. 21, 2020), <https://www.tva.com/newsroom/press-releases/first-tva-owned-battery-storage-to-shape-energy-future>; Press Release, TVA, TVA Grows Solar Portfolio by 44% in December, January (Feb. 11, 2020), <https://www.tva.com/Newsroom/Press-Releases/TVA-Grows-Solar-Portfolio-by-44-in-December-January>.

TVA does not—and indeed cannot—claim that carbon-free alternatives to the proposed gas plants are policy-based options that it can summarily dismiss. Rather, they are alternatives that the utility must consider because they are “within the ambit” of TVA’s statutory mission.¹¹⁷ Again, TVA fails to meet this standard in the Draft EA. TVA’s mission is “serving the Tennessee Valley through energy, environmental stewardship, and economic development.”¹¹⁸ In describing its mission, the agency’s website announces, among other things, that the utility is “generating . . . more renewable energy” contributing to a large reduction in greenhouse gas emissions.¹¹⁹ Moreover, the 2019 IRP explicitly contemplates the addition of options like battery storage and demand response—all alternatives are on the table for future consideration.¹²⁰ When TVA reaches project-specific decision points, like the proposed construction of new gas plants, it must include alternatives that fall within the ambit of its statutory mission and the 2019 IRP.

Even if replacing the retired gas plants at Allen and Johnsonville with carbon-free alternatives were inconsistent with the 2019 IRP—which it is not—the IRP is a broad planning document and “does not dictate a specific series of actions . . . at particular plants.”¹²¹ The IRP “sets nothing in stone about the particular amount, or even the particular range” of a given generation source across TVA’s system, much less at specific facilities.¹²² Because TVA demurred on selecting a specific capacity addition portfolio in the 2019 IRP, it must again evaluate a full range of carbon-free alternatives, alone or in

¹¹⁷ *Motor Vehicles Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 51 (1983) (“But the airbag is more than a policy alternative to the passive restraint standard; it is a technological alternative within the ambit of the existing standard” and “may not be abandoned without any consideration whatsoever[.]”); *Save Our Cumberland Mountains v. Kempthorne*, 453 F.3d 334, 347 (6th Cir. 2006) (quoting *Cent. S.D. Coop. Grazing Dist. v. Sec’y of the U.S. Dep’t of Agric.*, 266 F.3d 889, 898 (7th Cir. 2003)).

¹¹⁸ Draft EA 1.

¹¹⁹ TVA, *TVA at a Glance*, <https://www.tva.com/about-tva/tva-at-a-glance> (last accessed Mar. 12, 2021).

¹²⁰ 2019 IRP ES-1 (announcing that, in addition to other resources, TVA will add up to five GW of battery storage over the next twenty years and continue to reduce its greenhouse gas emissions).

¹²¹ *Ky. Coal Ass’n, Inc.*, 804 F.3d at 803 (quoting from TVA’s 2011 IRP and holding that TVA acted reasonably when exceeding the IRP’s range of projected coal retirements).

¹²² *Id.*

combination, for meeting the purported capacity need asserted in the Draft EA for the Colbert and Paradise gas plants.

4. TVA’s alternatives analysis must address unresolved conflicts related to climate change and environmental justice.

While courts accept that an agency’s obligation to evaluate alternatives is lessened in an environmental assessment, TVA cannot just fall back on its conclusion that the impacts of the proposed gas plants are not significant to wave off meaningful consideration of carbon-free options. As we wrote above, the agency simply did not take a hard look at the project’s greenhouse gas emissions or its impacts on environmental justice communities.

But even accepting—and commenters do not—TVA’s conclusion that the impacts of the proposed gas plants would be insignificant, NEPA is clear: an environmental assessment, standing alone, must contain a meaningful consideration of alternatives.¹²³ Under § 4332(2)(E), federal agencies must “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”¹²⁴ Here, unresolved conflicts exist concerning how TVA should use the Paradise and Colbert properties to generate electricity for the Tennessee Valley, how TVA should use the resources of the atmosphere to discharge climate-warming greenhouse gases from gas-fired plants, and the impacts of its proposal on people of color and low-wealth communities.

The climate crisis and environmental justice are priorities for every federal agency.¹²⁵ NEPA’s alternatives requirement takes on special importance in this context. TVA’s conclusory analysis fails to meaningfully address these conflicts and violates NEPA.

¹²³ 42 U.S.C. § 4332(2)(E).

¹²⁴ *Id.*; *Bob Marshall All. v. Hodel*, 852 F.2d 1223, 1228-29 (9th Cir. 1998) (recognizing that, in light of § 4332(2)(E), “consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process”); *Cherokee Forest Voices v. U.S. Forest Serv.*, 182 F. App’x 488, 496 (6th Cir. 2006) (“An agency must follow § 4332(2)(E) even when it prepares an [environmental assessment].”).

¹²⁵ Exec. Order No. 14008, 86 Fed. Reg. 7619, 7619, 7629 (Jan. 27, 2021).

III. TVA must prepare an environmental impact statement.

Because building new gas-fired power plants is a major federal action with significant environmental effects, TVA must prepare an environmental impact statement (EIS).

An agency must prepare an EIS if “there are “substantial questions whether a project may have a significant effect.”¹²⁶ Significance is determined by the impacts’ context and intensity. Significance “must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.”¹²⁷ Significance also accounts for “intensity,” or the severity of the impact. Intensity includes the following factors, any one of which may require an EIS¹²⁸:

The degree to which the proposed action affects public health or safety.¹²⁹

The degree to which the effects on the quality of the human environment are likely to be highly controversial.¹³⁰

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.¹³¹

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

¹²⁶ *Center for Biological Diversity v. Nat’l Hwy. Safety Admin.*, 538 F.3d 1172, 1219 (9th Cir. 2008) (citing *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998)). Multiple Sixth Circuit district courts have applied this standard. *See, e.g., Anglers of the Au Sable v. Forest Service*, 402 F. Supp. 2d 826, 831 (E.D. Mich. 2005) (plaintiffs raised substantial question as to significant effects of oil and gas drilling in national forest).

¹²⁷ 40 C.F.R. § 1508.27(a) (2019).

¹²⁸ *Barnes v. U.S. Dept. of Transp.*, 655 F.3d 1124, 1140 (9th Cir. 2011) (“Any one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances.”).

¹²⁹ 40 C.F.R. § 1508.27(b)(2) (2019).

¹³⁰ *Id.* § 1508.27(b)(4).

¹³¹ *Id.* § 1508.27(b)(6).

Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.¹³²

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.¹³³

The impacts of TVA's proposed Colbert and Paradise gas plants are significant under each of these factors, whether analyzed in the context of the local, regional, or global level. We discuss each below.

First, the decision to build the proposed gas plants is likely to affect “public health and safety.”¹³⁴ Local air pollution, even if in compliance with air permits, can harm local health by increasing risks of asthma, heart attacks, and death. The fact that TVA has harmed public health in the past at Colbert and Paradise—TVA recently closed coal plants at both sites—does not make new emissions in these communities any less significant. Instead, the decades of pollution and the ongoing health risks of coal ash impoundments at Colbert create “cumulatively significant impacts”¹³⁵ for the overburdened, predominately Black community of Red Rock/Barton. As discussed, public health, biodiversity, and economic well-being are also severely impacted by the “cumulatively significant impacts” of TVA's decision to build new fossil-fuel plants, thereby emitting decades' worth of greenhouse gases and accelerating climate change.

Second, because burning fossil fuels worsens climate change and threatens local air quality for overburdened communities, the new gas plants' impacts are also “highly controversial.”¹³⁶ This factor “refers to cases where a substantial dispute exists as to the size, nature or effect of the major federal action rather than to the existence of opposition to a use, the effect of which is relatively undisputed.”¹³⁷ Climate change effects are controversial where there is a dispute regarding the scope and incremental effects of continued greenhouse gas emissions, particularly when the agency can *further* reduce

¹³² *Id.* § 1508.27(b)(7).

¹³³ *Id.* § 1508.27(b)(10).

¹³⁴ *Id.* § 1508.27(b)(2).

¹³⁵ *Id.* § 1508.27(b)(7).

¹³⁶ *Id.* § 1508.27(b)(4).

¹³⁷ *Hanly v. Kleindienst*, 471 F.2d 823, 830 (2d Cir. 1972).

those emissions.¹³⁸ We have disputed the “size, nature, and effect” of TVA’s decision to build new gas. The “size” does not include the offset accounting for “system-wide reductions.” The “nature” of this generation decision is not so limited that TVA must blindly choose combustion turbine gas without considering reasonable alternatives. The “effect” of incremental greenhouse gas emissions—particularly as compared with carbon-free alternatives—includes incremental climate impacts that TVA fails to acknowledge. What’s more, courts find effects controversial when other federal agencies raise serious concerns.¹³⁹ There are important and unresolved policy conflicts between TVA’s proposal and the Biden Administration’s recent mandates to decarbonize the electricity sector and ensure environmental justice.¹⁴⁰ The serious concerns raised by Executive Order 14008 render controversial TVA’s decision to add new carbon emissions and further overburden Red Rock/Barton.

Third, TVA’s proposal to build new gas plants is likely to “establish a precedent for future actions,”¹⁴¹ particularly if TVA performs only an Environmental Assessment and issues a Finding of No Significant Impact (FONSI). A decision may set a precedent for future actions when the agency “may feel bound to the conclusions reached in the FONSI issued in these cases, thereby allowing the FONSI to serve as precedent for future [actions].”¹⁴² As discussed, this proposal represents the first part of the utility’s Combustion Turbine Modernization plan. Without considering alternatives, TVA assumes its only option to replace old combustion turbine gas plants is with new combustion turbine gas plants, and it finds that doing so creates no significant effects on

¹³⁸ In *Center for Biological Diversity v. Nat’l Hwy. Traffic Safety Admin.*, 538 F.3d 1172, 1222–23 (9th Cir. 2008), environmental groups challenged NHTSA’s decision to issue an EA for its new fuel efficiency standards. Even though the fuel efficiency standards decreased projected greenhouse gas emissions, the court found that a controversy existed as to NHTSA’s finding that “a 0.2 percent decrease in carbon emissions (as opposed to a greater decrease) is not significant.” *Id.* at 1223. Like TVA’s analysis, NHTSA’s conclusion that there would be no significant climate impacts “was unaccompanied by any analysis or supporting data.” *Id.*

¹³⁹ *California v. U.S. Dep’t of Trans.*, 260 F. Supp. 2d 969, 973 (N.D. Cal. 2003).

¹⁴⁰ Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

¹⁴¹ 40 C.F.R. § 1508.27(b)(6) (2019).

¹⁴² See *Friends of the Earth, Inc. v. U.S. Army Corps of Eng’rs*, 109 F. Supp. 2d 30, 43 (D.D.C. 2000) (holding that the Army Corps must perform an EIS, partly because of the precedential value of its decision to issue permits to casinos along the Mississippi River).

air pollution, climate change, or environmental justice. This is also the first proposal for new fossil-fuel power generating facilities since the 2019 IRP and Executive Order 14008. Because the issue of fossil-fuel retirements will continue to arise, TVA may feel bound to the conclusions reached in this NEPA process, thereby allowing this decision to serve as precedent for future decisions regarding the replacement of gas plants and other fossil-fuel generation assets.

Finally, TVA's proposal "threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment."¹⁴³ In Executive Order 14008, President Biden declared that the federal government "must deliver environmental justice in communities all across America" and that agencies "shall make achieving environmental justice part of their missions."¹⁴⁴ The Executive Order calls on the electricity sector to completely eliminate carbon emissions by 2035.¹⁴⁵ TVA's decision to build new gas plants at Colbert imposes an unjust burden on the Red Rock/Barton community, and TVA does not so much as consider what delivering environmental justice to the overburdened community means. New gas plants would ensure decades of additional greenhouse gas emissions, jeopardizing TVA's and the entire electric industry's ability to decarbonize by 2035. Because these unexplained inconsistencies threaten to violate the Federal requirements set out in Executive Order 14008, the proposal's environmental effects are significant.

Building new gas plants at Colbert and Paradise has significant effects, harming the environmental justice community of Red Rock/Barton and accelerating the climate crisis. TVA must take a hard look at this decision through an EIS.

CONCLUSION

For these reasons, we urge TVA to prepare a full environmental impact statement for the proposed Colbert and Paradise gas plants that resolves the critical deficiencies described here and complies with NEPA.

¹⁴³ 40 C.F.R. § 1508.27(b)(10).

¹⁴⁴ Exec. Order No. 14008, 86 Fed. Reg. 7619, 7622, 7629 (Jan. 27, 2021).

¹⁴⁵ *Id.* at 7624.