UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
NASHVILLE DIVISION

APPALACHIAN VOICES, CENTER FOR BIOLOGICAL DIVERSITY, and SIERRA CLUB,	)	
Plaintiffs,	)	Case No. _____
v.	)	
TENNESSEE VALLEY AUTHORITY,	)	**COMPLAINT**
Defendant.	)	**For Declaratory and Injunctive Relief**

INTRODUCTION

1. This case concerns the failure of the country's largest public utility to comply with the United States' bedrock environmental law, the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321, *et seq*.

2. Defendant Tennessee Valley Authority ("TVA") decided to build a new gas-fired power plant in Middle Tennessee without fairly evaluating the significant impacts its decision will have on the climate, the environment, and power customers and without fairly evaluating carbon-free energy alternatives. TVA's failure to adequately consider these issues and others violates NEPA.

3. In May 2021, TVA proposed to retire the Cumberland Fossil Plant, a coal-fired power plant located in Cumberland City, Tennessee, because the 50-year-old plant was "contributing to environmental, economic, and reliability risks."

4. Recent events confirm those risks. Facing historic demand during Winter Storm Elliott in December 2022, the Cumberland Fossil Plant—TVA's second largest generating asset—

failed completely, providing no electricity when people needed it most. With the plant entirely offline and the agency's gas plants also compromised during the storm, TVA initiated rolling blackouts across its 10-million-person service territory.

5. TVA acknowledged that it needed to retire the Cumberland Fossil Plant. The question facing the agency was what to replace it with. As required by NEPA, TVA initiated an environmental review to evaluate replacement resources, proposing to evaluate three "alternatives" in an environmental impact statement, or EIS. Alternative A would be a combined-cycle gas plant in Cumberland City (the "Cumberland Gas Plant" or the "Plant"), which would require a new, 32-mile gas pipeline approved by the Federal Energy Regulatory Commission ("FERC"). Alternative B would be multiple smaller combustion-turbine gas plants on several other properties owned by TVA. Alternative C would be a combination of solar facilities paired with battery storage facilities.

6. TVA immediately made its preference clear. In August 2021, months before releasing its draft EIS (the "Cumberland Draft EIS" or "Draft EIS") for public comment, TVA signed a contract with Tennessee Gas Pipeline Company ("TGP") to supply all the gas Alternative A—the Cumberland Gas Plant—would need.

7. NEPA requires agencies to study a proposal's environmental impacts and evaluate reasonable alternatives before making a final decision. But more than a year before completing its environmental review, TVA committed itself to the Cumberland Gas Plant.

8. TVA published a final EIS in December 2022 (the "Cumberland Final EIS" or "Final EIS") and issued a final decision on January 20, 2023 (the "Cumberland Record of Decision" or "Record of Decision"). The NEPA study purported to evaluate the environmental consequences of the Cumberland Gas Plant. But TVA failed to fairly evaluate the things that matter, including the climate-warming impacts of the Plant's emissions, the viability of carbon-

free alternatives, and the cost of mitigating emissions in compliance with the climate objectives of the United States to decarbonize the power sector. TVA also failed to account for game-changing developments, like the passage of the Inflation Reduction Act ("IRA") and the wide-spread failure of TVA's coal- and gas-fired fleet during Winter Storm Elliott. These failures and others violate NEPA.

9. Plaintiffs Appalachian Voices, the Center for Biological Diversity, and Sierra Club ask this Court to hold unlawful and set aside TVA's deficient NEPA analysis and enjoin further construction and operation of the Cumberland Gas Plant.

JURISDICTION AND VENUE

10. The Court has jurisdiction over this civil action under 28 U.S.C. § 1331 (federal question jurisdiction), and judicial review is available under the Administrative Procedure Act, 5 U.S.C. §§ 701–706.

11. An actual controversy exists between the parties within the meaning of the Declaratory Judgment Act, 28 U.S.C. § 2201(a), and the Court may grant declaratory relief, injunctive relief, and further relief pursuant to 28 U.S.C. §§ 2201–02 and 5 U.S.C. § 706.

12. Venue is proper in this district under 28 U.S.C. § 1391(b) because TVA's Cumberland Reservation is in this district and a substantial part of the events or omissions giving rise to the claim occurred here.

PLAINTIFF CONSERVATION GROUPS

Appalachian Voices

13. Plaintiff Appalachian Voices is a grassroots nonprofit organization dedicated to bringing people together to protect the land, air, and water of Central and Southern Appalachia and to advance a just transition to a generative and equitable clean-energy economy.

14. Appalachian Voices was founded in 1997, and is headquartered in Boone, North

Carolina, with additional offices in Charlottesville and Norton, Virginia. Appalachian Voices also maintains staff in Knoxville, Tennessee.

15. Appalachian Voices has over 900 members throughout the country, and combines grassroots organizing, policy advocacy, and technical expertise in order to hold decision-makers accountable to local communities. Through public comments, education, communication initiatives, and the provision of resources and data, Appalachian Voices works collaboratively with local, state, and regional partners to promote energy efficiency and encourage the development of clean and affordable energy.

16. Appalachian Voices is committed to assisting people throughout Appalachia in their efforts to shape the energy future of their own communities. TVA's energy choices are a priority for Appalachian Voices. Appalachian Voices meets with TVA and TVA-area distribution utilities to advocate for clean energy and supports communities across the region to help them organize and plan advocacy campaigns related to TVA's and TVA-area distribution utilities' energy choices. Appalachian Voices also regularly comments on NEPA reviews for TVA energy projects and helps community members democratically engage in TVA's decision-making process, including by participating in TVA Board meetings and NEPA reviews. The Cumberland Gas Plant and TVA's inadequate NEPA review conflict with Appalachian Voices' core activities to protect the environment and advance a sustainable and equitable clean-energy economy. To better understand and to oppose this project, Appalachian Voices hired a biology professor from Austin Peay State University to become a full-time organizer. Appalachian Voices continues to employ a full-time organizer to help impacted community members engage with TVA on this project and advocate for renewable power in place of the proposed combined-cycle gas plant.

17. TVA's failures to include all the information it should have under NEPA in the

Final EIS—including, for example, information about the IRA's impact on TVA's cost projections, details on where TVA would site solar and storage facilities under Alternative C, accurate information about the project's impacts on waterways, and on contact with affected landowners—impair Appalachian Voices' ability to conduct its core activities, including advocacy to FERC and Army Corps of Engineers about the pipeline. Because TVA failed to disclose essential information, Appalachian Voices has used staff time to conduct field work on the pipeline's impacts to waterways and has conducted outreach to landowners whose property would be crossed by the pipeline to determine its likely impacts on springs not described in TVA's NEPA documents.

18. Appalachian Voices has members who live in areas served by TVA and whose interests are threatened by the Cumberland Gas Plant. Those members include Barbara Miller and Angela Mummaw, who have concrete property, recreational, aesthetic, health, and informational interests that are threatened by the plan TVA selected in the Final EIS and Record of Decision and that NEPA's procedures are intended to protect.

19. Ms. Miller owns property that would be crossed by the pipeline required to supply fuel to the Cumberland Gas Plant. Ms. Miller objects to giving up any of her property rights for the pipeline. The pipeline would trench through her pasture and hayfield, degrading or destroying their future use for farming. The pipeline would also risk contamination of the groundwater that Ms. Miller relies on for her home and farm and place her at risk of serious injury or death in the event of a malfunction. She is concerned that wildlife on her property that she enjoys viewing may be displaced by the disturbance that pipeline construction would bring and worries that her aesthetic enjoyment of her property would be impaired by the pipeline.

20. Ms. Mummaw lives about eight miles from the Cumberland Gas Plant, in the path

of prevailing winds blowing from the direction of the facility. She suffers from asthma and is concerned that emissions of pollutants from the Cumberland Gas Plant, such as formaldehyde, nitrogen oxides (a precursor to ozone), and particulate matter, would harm her health. The emissions of these pollutants and others from the Plant would cause her to worry about exposure at her home and impair her enjoyment of her property. Some of these pollutants, such as formaldehyde and particulate matter, are not harmless even in low concentrations. She is concerned that she would have to see the plumes of emissions from the Plant mar her enjoyment of the area's natural beauty.

21. Ms. Mummaw is also a trained biologist who regularly enjoys observing wildlife in the area that would be affected by the proposed pipeline. She believes the pipeline would likely disrupt local wildlife during construction and operation, impairing her recreational and aesthetic interests. Finally, because of TVA's failure to disclose information in the Final EIS, Ms. Mummaw's ability to advocate on her own behalf to FERC is impaired.

Center for Biological Diversity

22. The Center for Biological Diversity is a national nonprofit conservation organization with more than 1.7 million members and online activists who care about the country's urgent need to expedite the renewable-energy transition and protect human health, the natural environment, and species from the ravages of the climate emergency, extinction crisis, and environmental degradation. The Center advocates for wildlife and wild places through legal work, scientific research, and community organizing. The Center regularly collaborates with federal, state, and local governments, as well as public and private organizations, to advance its mission.

23. The Center is focused on preserving biodiversity. That work includes advocacy to mitigate the extent and effects of climate change, which jeopardizes biodiversity worldwide. The Center also advocates to reduce the impact of consuming fossil fuels, both in terms of their

contribution of greenhouse gas emissions into the atmosphere and the local impacts of the hazardous by-products created in consuming coal and gas. For the retirement of the Cumberland Fossil Plant, the Center advocated that TVA evaluate "a *full range of renewable energy alternatives*, including an alternative that largely or completely relies on [distributed energy resources], storage, and energy efficiency" as carbon-free replacement resources. Center for Biological Diversity, Comments on TVA's Draft EIS for the Cumberland Fossil Plant Retirement 11 (June 13, 2022) (emphasis in original).

24. Approximately 9,000 of the Center's members live in the states served by TVA. The Center's work aimed at reducing the impact of fossil-fuel consumption has frequently addressed, on the Center's behalf and with partners, the need to protect habitat and wildlife in Tennessee.

25. The Cumberland Gas Plant, including the pipeline that will supply it, may affect a diverse collection of species in Middle Tennessee. It has the potential to harm federally protected species of bats, including the gray bat *(Myotis grisescens)*, Indiana bat *(Myotis sodalist)*, and the northern long-eared bat *(Myotis septentrionalis)*. The proposed pipeline would directly impact streams and wetlands through construction activities, runoff, and erosion. Those impacts could contaminate waterbodies that are habitat for freshwater mussels, including rabbitsfoot *(Quadrula cylindrica)* and tan riffleshell *(Epioblasma walker)*. Endangered plants like Price's potato-bean *(Apios priceana)* and Short's bladderpod *(Physaria globose)* also inhabit the area, as do federally protected bald and golden eagles.

26. The incomplete discussion of project impacts and alternatives in TVA's NEPA documentation, including but not limited to TVA's failure to consider the impact of IRA incentives on its selection of alternatives, impairs the ability of the Center to carry out its mission by depriving

the Center of information it would have used to educate its members and advocate to decision-makers, including elected officials.

27. The Center for Biological Diversity has members whose interests are also threatened by the Cumberland Gas Plant. Those members include JoAnn McIntosh, who has concrete recreational, aesthetic, health, and informational interests that are threatened by the plan TVA selects in the Final EIS and Record of Decision and that NEPA's procedures are intended to protect.

28. Ms. McIntosh lives in Clarksville, Tennessee, in the path of emissions from the Plant and worries that air pollution from the Plant would harm her health, cause her to worry about exposure to pollutants at her home, and impair her enjoyment of her property. Formaldehyde, particulate matter, nitrogen oxides (a precursor to ozone), and other pollutants from the Plant would be likely to reach her home. Some of these pollutants, such as formaldehyde and particulate matter, are not harmless even in low concentrations. She also regularly recreates near the Cumberland Gas Plant site, has visited and plans to return to the Cross Creeks National Wildlife Refuge near the Plant site, and has ridden the Cumberland City Ferry which is less than a mile from the Plant site. Ms. McIntosh is concerned about exposure to air pollution from the Cumberland Gas Plant at these places, impairing her recreational interests in visiting them in the future. She is concerned that constructing a new plant and pipeline would impair the natural beauty of the area around the Plant and harm her aesthetic interests.

29. Ms. McIntosh is also a close reader of TVA's NEPA publications about the Cumberland Gas Plant and is harmed by informational deficiencies in those publications. She has been aware of environmental issues facing her community since the 1970s, and in the early 2000s felt that the march toward sustainability had reached a stalemate. She became active as a volunteer

to help others understand that actions available now will make a difference for future generations. She believes TVA has dismissed out of hand evidence that clean energy options are best for residents of the Tennessee Valley, and so has been an active member of the Center and Energy Chair for the Tennessee Chapter of Sierra Club. She raises awareness about TVA issues by communicating with her neighbors and members of environmental groups throughout Tennessee.

30. The insufficient and inaccurate information in the Final EIS impaired Ms. McIntosh's ability to advocate in other related proceedings, like Tennessee Gas Pipeline Company's application now pending before FERC. Because TVA failed, for example, to adequately compare alternatives, Ms. McIntosh has had to do her own research on comparable sites and plans around the country and in the Southeast in particular. She has asked TVA to provide additional information at board meetings, in data requests pursuant to the Freedom of Information Act, and by posing questions directly to TVA CEO Jeff Lyash. If TVA had provided accurate and complete data, she believes, she would not have had to do her own research to fill in the gaps in order to be able to advocate for clean energy at this site before FERC.

Sierra Club

31. Plaintiff Sierra Club is the nation's oldest and largest grassroots environmental organization. Sierra Club is a national nonprofit organization of over 716,000 members dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing and promoting the responsible use of the Earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club has approximately 8,604 members in Tennessee. Sierra Club brings this action on its own behalf and on behalf of its members.

32. Sierra Club has long been concerned about environmental issues in the Tennessee Valley, including impacts from the power sector, such as land use, air and water pollution, and

climate change. Sierra Club advocates for a clean-energy transition for TVA and other utilities nationwide to reduce or eliminate climate-warming emissions and provide affordable renewable energy and renewable-energy jobs.

33. To advance these goals, Sierra Club routinely participates in the administrative processes for proposed TVA projects—including but not limited to new power plants—and encourages TVA to pursue carbon-free alternatives to fossil fuels, such as solar and wind generation, battery storage, energy-efficiency programs, and more. Sierra Club also advocates for a clean-energy portfolio every several years during the development of TVA's integrated resource plan, a statutorily mandated, forward-looking process in which TVA is supposed to make decisions about its future power supply to guide project-level decision-making. Sierra Club uses the information it obtains through project-level NEPA documents to shape and support its advocacy about the choices TVA is tasked with making during integrated resource planning.

34. Consistent with its past practice, Sierra Club intends to advocate for clean energy during the development of TVA's next integrated resource plan, a process that began in May 2023. Sierra Club also depends on the information it obtains through project-level NEPA documents to effectively carry out public outreach and education campaigns; advocate for clean energy policies to federal, state, and local governmental entities and elected officials; and to inform expert analyses of TVA's resource decisions.

35. TVA's failure to adequately evaluate the impacts of the Cumberland Gas Plant under NEPA and adequately consider carbon-free alternatives to building a new gas-fired power plant directly harms Sierra Club's ability to achieve its organizational goal of advancing a clean-energy transition in the Tennessee Valley. Specifically, TVA deprived Sierra Club and its members of information and analysis—including, for example, about how the IRA changes the net cost to

TVA of new gas plants—that Sierra Club would use during the development of TVA's next integrated resource plan to advocate for a clean-energy future instead of dangerous reliance on fossil fuels. TVA's failure to comply with NEPA for the Cumberland Gas Plant also impairs Sierra Club's ability to conduct the public outreach and advocacy campaigns that are central to its work in Tennessee. TVA's failure to adequately evaluate the impacts of the Cumberland Gas Plant forces Sierra Club to make do without important information—including, for example, on the true costs of the alternatives available to TVA—that TVA was required to provide as part of its NEPA review.

36. Sierra Club has members whose interests are threatened by Cumberland Gas Plant. Those members include Robert Connor and Charles Crow, who have concrete property, recreational, aesthetic, and health interests that are threatened by the plan TVA selects in the Final EIS and Record of Decision and that NEPA's procedures are intended to protect.

37. Mr. Connor owns property that would be permanently occupied by the pipeline required to supply the Cumberland Gas Plant. He objects to giving up any of his property rights for the pipeline. He regularly hikes the property and enjoys viewing the wildlife that make it a home. He is concerned, among other worries, that construction of the pipeline would disrupt his recreational and aesthetic interest in the property and, because he spends a significant portion of his time on the property, that he would be personally endangered by the risk of a pipeline malfunction that leaks methane into the air or causes an explosion.

38. Mr. Crow owns property about seven miles from the site of the Cumberland Gas Plant. His property abuts Yellow Creek, which the pipeline would cross and which Mr. Crow worries might be harmed by runoff during construction or methane leaks while the pipeline operates. Yellow Creek is a robust smallmouth bass fishery that Mr. Crow regularly visits and

fishes, and a waterway that he does not wish to see disturbed. He also has regularly enjoyed kayaking, canoeing, fishing, and birding on and near the Cumberland River for many years, but now avoids areas near the Cumberland Fossil Plant (the existing coal plant) because of pollution from that facility. The Cumberland Gas Plant will result in decades of additional air pollution, and Mr. Crow will continue to avoid recreating in the area as a result. Mr. Crow worries that air pollution created by burning methane at the Plant, which will include, among other pollutants, nitrogen oxides (a precursor to ozone), formaldehyde, and particulate matter, will harm both himself and the wildlife he enjoys viewing at his home or on the river. Some of these pollutants, such as formaldehyde and particulate matter, are not harmless even in low concentrations. Mr. Crow is concerned that methane leaked from the pipeline will cause additional harm to himself, Yellow Creek, and wildlife.

* * *

39. These and other harms and injuries suffered by Appalachian Voices, the Center for Biological Diversity, Sierra Club, and their members can and should be redressed by a judgment declaring unlawful and vacating the NEPA documents for the Cumberland Gas Plant and enjoining further construction or operation of the Cumberland Gas Plant until TVA complies with NEPA. TVA's failures to fairly evaluate the impacts of the Cumberland Gas Plant, to fairly consider carbon-free alternatives, to prepare its EIS before committing agency resources, and to prepare a supplemental environmental analysis are directly connected to a decision to proceed with the Cumberland Gas Plant. An order from this Court requiring TVA to comply with NEPA may lead the agency to abandon or modify the project. Individual participation of the members of Appalachian Voices, the Center for Biological Diversity, and Sierra Club is not necessary to evaluate TVA's compliance with NEPA or to provide prospective or injunctive relief.

40. Appalachian Voices, the Center for Biological Diversity, and Sierra Club all participated actively in TVA's administrative process for the Cumberland Gas Plant and have exhausted administrative remedies for the NEPA violations alleged in this action. On June 13, 2022, all three Conservation Groups submitted comments on the Draft EIS. On September 14, 2022, Sierra Club and Appalachian Voices wrote a letter to TVA seeking supplementation under NEPA based on new information and circumstances, but TVA refused the request. On or before January 6, 2023, all three Conservation Groups again wrote to TVA commenting on the deficiencies of the Final EIS, requesting supplementation based on new information and circumstances, and supporting renewable power as a better choice than a new gas plant. TVA did not respond to those letters before issuing its Record of Decision.

DEFENDANT TENNESSEE VALLEY AUTHORITY

41. Defendant TVA is a federally owned electric utility corporation that operates the nation's largest public power system. TVA is a corporate agency and instrumentality of the United States created by and existing pursuant to the Tennessee Valley Authority Act of 1933 ("TVA Act"), 16 U.S.C. § 831 *et seq*. Members of TVA's Board of Directors are appointed by the President.

42. TVA is an unusual agency. Unlike most other federal agencies, TVA receives no federal funding and derives virtually all its revenues—which exceed $10 billion annually—from generating and selling electricity. TVA supplies power to a population of approximately ten million people across seven states, primarily through contracts with nonprofit local distributors like municipal power companies and member-owned rural cooperatives, which in turn distribute the electricity to residential, commercial, and industrial customers within their service areas. TVA also sells power directly to large industrial customers.

43. TVA is also an unusual electric utility. Unlike its private counterparts, TVA is

largely free from oversight or competition. TVA's decisions are not subject to scrutiny by a public utility commission. TVA does not have shareholders to which its Board of Directors is accountable. TVA has shielded itself from market forces by locking local distributors into perpetual and exclusive contracts. Unlike other transmission operators, TVA consistently refuses to allow access to its transmission grid to third parties, erecting an additional obstacle for municipal power companies or rural cooperatives to receive power from providers other than TVA.

44. TVA is, however, bound by federal laws, including NEPA, and is subject to judicial review under the Administrative Procedure Act and the TVA Act, which provides that TVA "[m]ay sue or be sued in its corporate name." 16 U.S.C. § 831c(b).

45. TVA maintains its headquarters in Knoxville, Tennessee.

NATIONAL ENVIRONMENTAL POLICY ACT

46. NEPA establishes a national policy to encourage "productive and enjoyable harmony" between humans and the environment; promote efforts to "prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare" of humankind; and "enrich the understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321.

47. In pursuit of these goals, NEPA mandates a set of action-forcing procedures that require all federal agencies to take a hard look at the environmental consequences of their proposed actions and disclose the relevant information to the public. Although NEPA's requirements are procedural, "these procedures are almost certain to affect the agency's substantive decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

48. NEPA and its implementing regulations require federal agencies to provide a detailed statement on proposals for major federal actions significantly affecting the quality of the human environment. 42 U.S.C. § 4332(C); 40 C.F.R. § 1500.1(a).

49. This detailed statement—called an environmental impact statement, or EIS—must describe the environmental impact of the proposed action; any adverse environmental effects which cannot be avoided if the proposal is implemented; alternatives to the proposed action; the relationship between local short-term uses and the maintenance and enhancement of long-term productivity; and any irreversible and irretrievable commitments of resources that would be involved in the proposed action if implemented. 42 U.S.C. § 4332(C).

50. Agencies must analyze and disclose the direct, indirect, and cumulative effects of the proposed action and alternatives to the proposed action. 40 C.F.R. §§ 1508.1(g), 1501.5(c), 1502.16(a)(1).

51. Agencies must discuss "connected actions" in a single EIS. Two actions are connected if one cannot proceed until the other is taken, or if the two are "interdependent parts of a larger action and depend on the larger action for their justification." 40 C.F.R. § 1508.25(a)(1)(iii). A hallmark of connected actions is that they have little or no independent utility.

52. NEPA regulations require agencies to discuss the means "to mitigate adverse environmental impacts." 40 C.F.R. § 1502.16(a)(9).

53. Agencies "shall prepare [a] supplement[]" to an EIS if, before the proposed project's completion, there are "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(d)(ii).

TVA ACT

54. TVA is authorized to "produce, distribute, and sell electric power." 16 U.S.C. § 831d(l).

55. TVA has a nine-member Board of Directors. 16 U.S.C. § 831a(a)(1). Board

members' duties include the obligation to "establish the broad goals, objectives, and policies of the Corporation," "develop long-range plans to guide the Corporation in achieving the goals, objectives, and policies of the Corporation," and "ensure that those goals, objectives, and policies are achieved." 16 U.S.C. §§ 831(g)(1)(A)–(C). Each board member "shall affirm support for the objectives and missions of the Corporation, including being a national leader in technological innovation, low-cost power, and environmental stewardship." 16 U.S.C. § 831a(b)(5).

56. Since 1992, TVA has been required to implement a "least-cost planning program." This statutory mandate requires TVA to engage in "a planning and selection process for new energy resources which evaluates the full range of existing and incremental resources (including new power supplies, energy conservation and efficiency, and renewable energy resources) in order 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(b)(1).

57. The term "system cost" means "all direct and quantifiable net costs for an energy resource over its available life, including the cost of production, transportation, utilization, waste management, [and] environmental compliance." 16 U.S.C. § 831m-1(b)(3). More than just dollars and cents, "lowest system cost" also includes "harms that a decision might do to human health or the environment." *Kentucky Coal Ass'n, Inc. v. TVA*, 804 F.3d 799, 802 (6th Cir. 2015) (quoting *Michigan v. EPA*, 576 U.S. 743, 752 (2015)). Finally, in its planning process, TVA must "treat demand and supply resources on a consistent and integrated basis." 16 U.S.C. § 831m-1(b)(2)(C).

GLOBAL CLIMATE CRISIS AND FEDERAL RESPONSE

58. The climate is changing at an unprecedented rate.

59. The United States and the world are warming, global sea level is rising, the oceans are acidifying, and extreme weather events like heat waves, droughts, and heavy precipitation are becoming more frequent and more severe. The years 2015 through 2022 are the eight warmest

years ever recorded, and scientists predict that the planet is likely to exceed 1.5° Celsius of warming during the 2030s.

60. There is overwhelming scientific consensus that these changes are driven by fossil-fuel extraction, transportation, and combustion, which cause greenhouse gases like carbon dioxide and methane to accumulate in the atmosphere and increase global temperatures. Each source of fossil fuel combustion contributes to climate change, and fossil-based power plants are among the largest individual sources of greenhouse gas emissions in the world. In addition to their smokestack emissions of carbon dioxide, gas-fired power plants are part of a gas infrastructure system that leaks or intentionally vents significant quantities of methane directly into the atmosphere. Electric power generation using fossil fuels accounts for 25 percent of the United States' greenhouse gas emissions.

61. Natural gas is a fossil fuel primarily composed of methane. Burning methane releases carbon dioxide, the greenhouse gas driving the global climate crisis.

62. Methane itself, which leaks or is intentionally vented directly to the atmosphere as it moves through the gas infrastructure system, is an even more potent greenhouse gas contributing to climate change—more than 80 times as powerful as carbon dioxide in the first 20 years methane is in the atmosphere.

63. A 2018 study estimated a methane leak rate of about 2.4 percent from gas-transmission pipelines. Other peer-reviewed studies in the record found leakage rates as high as 9.4 percent. A rate around 3 percent across the supply chain would mean burning gas is worse for the planet than burning coal.

64. Greenhouse gas emissions from TVA's existing coal- and gas-fired power plants contribute to climate change.

65. Greenhouse gas emissions from TVA's proposed new gas-fired power plants, like the Cumberland Gas Plant, and the pipelines that will serve them will also contribute to climate change.

66. The effects of climate change are already manifest in Tennessee and are predicted to grow more severe as temperatures continue to rise. Extreme rainfall events have increased in frequency and severity in the Southeast and are expected to increase further. In the Tennessee Valley, the years 2018–2020 were the wettest years in 131 years of recordkeeping, and 2020 set the single-year record with rainfall 139 percent above normal. In 2021 in Humphreys County, 17 inches of rain fell in a single day, breaking state records. The catastrophic flooding killed 20 people and damaged or destroyed hundreds of homes and businesses.

67. Limiting the global increase in temperatures to 1.5° Celsius above preindustrial levels would reduce the risks and impacts from climate change.

68. Recent scientific studies show that global warming beyond 1.5° Celsius could trigger climate tipping points. Climate tipping points are thresholds that trigger self-perpetuating changes in the climate, which may lead to dangerous impacts that occur abruptly and irreversibly.

69. Any additional increase in greenhouse gas emissions from fossil fuels concomitantly increases the likelihood that an increase in global temperatures will exceed 1.5° Celsius above preindustrial levels. Scientists estimate that global emissions must fall by approximately 45 percent by 2030 and reach net-zero by 2050 to limit warming to 1.5° Celsius. Global emissions are not on a trajectory that will meet these goals.

70. The United States must reduce the unmitigated combustion of fossil fuels for global warming to stay below 1.5° Celsius.

71. By signing the Paris Agreement, the United States has committed to slowing global

warming to "well below 2ºC above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5ºC above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." Paris Agreement art. 2, § 1(a), Dec. 12, 2015, 3156 U.N.T.S. 54113.

72. Recent executive orders direct all federal agencies to take a government-wide approach to combating the climate crisis. This government-wide approach includes TVA.

73. Executive Order 13,990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, calls on federal agencies to "capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account." The Executive Order requires agencies to apply the Social Costs of Carbon and Methane—tools designed to account for the economic impacts of climate change—in accordance with guidance from the Interagency Working Group on the Social Cost of Greenhouse Gases. Exec. Order No. 13,990, 86 Fed. Reg. 7,037, 7,040 (Jan. 25, 2021).

74. Executive Order 14,008, *Tackling the Climate Crisis at Home and Abroad*, acknowledges that "we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth." The Executive Order directs that the federal government "must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy," and that the Administration will "organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy." The Executive Order also requires the federal government to develop "a comprehensive plan" to use "all available procurement authorities to achieve or facilitate . . . a carbon pollution-free electricity sector no later than 2035." Exec. Order 14,008, *Tackling the Climate Crisis at Home and Abroad*,

86 Fed. Reg. 7,619, 7,622, 7,624 (Feb. 1, 2021).

75. Executive Order 14,057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, declares a policy for the federal government "to lead by example in order to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050." To implement this policy, Executive Order 14,057 further directs that agencies—including government-owned corporations—"shall facilitate new carbon pollution-free electricity generation and energy storage capacity" on government-owned property. Exec. Order 14,057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, 86 Fed. Reg. 70,935–36 (Dec. 8, 2021).

76. In 2022, Congress enacted the Inflation Reduction Act of 2022, Pub. L. 117-169, 136 Stat. 1818 (2022), which President Biden heralded as "the single largest and most ambitious investment in the ability of the United States to advance clean energy, cut consumer energy costs, confront the climate crisis, promote environmental justice, and strengthen energy security." Exec. Order 14,082, *Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act of 2022*, 87 Fed. Reg. 56,861 (Sept. 12, 2022). Among its other provisions, the IRA creates billions of dollars of incentives for deploying carbon-free technology. TVA is eligible for many of these incentives. To implement the IRA, Executive Order 14,082 directs federal agencies—including government-owned corporations—to "driv[e] progress to . . . achieve a carbon pollution-free electricity sector by 2035," and "promot[e] construction of clean energy generation, storage, and transmission[.]" *Id.* at 56,862.

77. By selecting a new gas plant with a life expectancy—and therefore, greenhouse gas emissions—well beyond the dates outlined in President Biden's Executive Orders, TVA is failing to comply with Executive Orders 13,990, 14,008, 14,057, and 14,082.

78. The federal government has taken other significant actions consistent with these executive orders. On January 9, 2023, the Council on Environmental Quality ("CEQ") issued new guidance applying "longstanding NEPA principles" to assist agencies in analyzing greenhouse gas emissions and climate-change effects of their proposed actions under NEPA. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1,196, 1,198 (Jan. 9, 2023).

79. CEQ's guidance recommended that agencies quantify reasonably foreseeable greenhouse gas emissions, including upstream emissions; disclose and provide context for greenhouse gas emissions and climate impacts, including by "discuss[ing] whether and to what extent the proposal's reasonably foreseeable GHG emissions are consistent with GHG reduction goals, such as those reflected in the U.S. nationally determined contribution under the Paris Agreement[;]" identify alternatives and mitigation strategies to lower greenhouse gas emissions; and "mitigate GHG emissions to the greatest extent possible." *Id.* at 1,197, 1,203–04, 1,206.

80. On May 23, 2023, the Environmental Protection Agency ("EPA") published a draft rule proposing new, more stringent greenhouse gas limits for fossil fuel-fired power plants. New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and a Repeal of the Affordable Clean Energy Rule, 88 Fed. Reg. 33,240 (May 23, 2023). For gas-fired power plants, EPA proposed emission standards based on hydrogen blending and carbon capture technology. *Id.* at 33,277 (new sources), 33,341 (existing sources).

TVA'S CURRENT AND PLANNED GENERATION FLEET

TVA's Resource Planning

81. TVA relies heavily on burning fossil fuels, primarily coal and gas, to generate

electricity.

82. Fossil fuels account for almost half of TVA's power supply. In addition to burning fossil fuels like coal and gas, TVA also produces electricity with nuclear power plants, hydroelectric dams, and a very limited amount of wind and solar. In 2022, coal and gas combined to account for approximately 48 percent of TVA's power supply, while wind and solar accounted for roughly four percent. To date, TVA has no battery storage online.

83. TVA's gas-fired fleet uses two basic types of technology: simple-cycle combustion turbines and combined-cycle units. A simple-cycle combustion turbine is essentially a jet engine that burns gas to produce electricity. A combined-cycle unit initially employs a gas-fired combustion turbine to produce electricity, and then recovers waste heat from the combustion-turbine exhaust to generate steam, which, in turn, powers a steam turbine that generates additional electricity.

84. As of September 2022, TVA operates 81 active simple-cycle combustion turbines at nine power plant sites, 14 active combined-cycle units at eight sites, and a single cogeneration unit that burns gas to produce electricity and also to generate steam for sale to an industrial customer.

85. Under the TVA Act's mandate to implement a least-cost planning program, 16 U.S.C. § 831m-1(b)(1), TVA prepares a comprehensive study every few years that provides the utility's view on how best to meet future electricity demand over the next two decades. This study is called an Integrated Resource Plan ("IRP"). TVA issued its most recent IRP in 2019.

86. The 2019 IRP contains notably few decisions about TVA's future operations. Instead, TVA largely decided not to decide. The 2019 IRP identified a wide range of future scenarios and recommended that TVA retain maximum flexibility by deferring most resource

decisions to a later date. For example, the 2019 IRP contemplates that TVA could add between 800 and 9,800 megawatts of new combined-cycle capacity by 2038.

87. TVA prepared a programmatic EIS for the 2019 IRP. In that EIS, TVA expressly recognized that "[t]he more site-specific effects of actions that are later proposed to implement the IRP will be addressed in subsequent tiered environmental reviews." Tenn. Valley Auth., 2019 Integrated Resource Plan Volume II – Final EIS 1-2 (2019). The EIS also expressly declined to consider the cumulative impacts of site-specific decisions to implement the 2019 IRP, instead deferring that analysis to future reviews of site-specific actions.

88. During its August 2019 meeting, the TVA Board adopted the 2019 IRP.

TVA's Planned Gas Build-Out

89. Despite the urgent climate crisis and sweeping federal policies to combat that crisis, TVA has proposed a massive build-out of gas-fired power plants.

90. Since February 2021, TVA has proposed 5,900 megawatts of new gas generation across its fleet to replace aging fossil units or add capacity.

91. 5,900 megawatts represents approximately 15 percent of TVA's total capacity, enough to power over three million homes.

92. Between February 1 and June 15, 2021, TVA proposed building five new gas-fired power plants, totaling 4,950 megawatts of new capacity. TVA proposed new combustion-turbine units at its facilities in Johnsonville, Tennessee; Paradise, Kentucky; and Colbert, Alabama. In the same period, TVA also proposed building new combined-cycle gas plants in Cumberland and Kingston, which are part of a simultaneous effort to retire and replace TVA's coal fleet.

93. In a single Board action on November 10, 2021, TVA's Board delegated authority to the CEO to "evaluate, decide upon, and complete, if necessary, the retirements of the Cumberland and Kingston plants and replacement generation projects." Tenn. Valley Auth.,

Annual Report Pursuant to Section 13, 15(D), or 37 of the Securities Exchange Act of 1934 (Form 10-K) 79 (2021).

94. On May 12, 2023, TVA announced its intent to build another 900-megawatt combustion-turbine gas plant in Cheatham County, Tennessee. The new Cheatham County gas plant would partly replace capacity from the Cumberland coal plant's second unit.

95. Since July 2021, TVA has made final decisions to build gas-fired power plants at Johnsonville, Paradise, Colbert, and Cumberland. For Kingston, TVA has issued a draft EIS identifying building two gas-fired power plants for 1,500 megawatts as its preferred alternative, an increase from the initial proposal of one 1,450-megawatt gas plant. In the Cheatham County proposal, the only action alternative TVA is evaluating includes a new gas plant.

96. Building a new gas-fired power plant like the Cumberland Gas Plant carries risks for the environment and for consumers. As the harmful impacts of the global climate crisis grow more apparent, the Cumberland Gas Plant would emit nearly three million tons of planet-warming climate pollution each year over its several decades of operation unless forced to retire early, install expensive technology to capture and store its greenhouse gas emissions, or both. Those costs and others are passed on to captive customers who get their electricity from local nonprofit distributors bound by perpetual, exclusive contracts with TVA.

97. The price of fuel for power plants like the Cumberland Gas Plant—primarily methane—is expensive and volatile. TVA reported in an August 2022 Board of Directors meeting that the volatility of gas prices becomes a greater risk as gas-fired generation becomes a larger portion of its portfolio. Since TVA passes its fuel costs directly to customers, it is TVA's customers who are forced to bear this economic risk, which is exacerbated by TVA's decision to invest in new gas plants like this one.

98. TVA claims publicly that it is not required to comply with the executive orders on decarbonizing the power sector by 2035. Instead, TVA has set its own, less ambitious target of achieving a 70-percent reduction in carbon emissions by 2030, with a plan to achieve an 80-percent reduction by 2035 and an aspirational goal to achieve net-zero emissions by 2050.

TVA'S NEPA REVIEW AND PRECOMMITMENT TO THE CUMBERLAND GAS PLANT

The Precedent Agreement

99. On August 11, 2021, TVA entered into a precedent agreement ("Precedent Agreement")—a long-term gas-supply contract—with pipeline developer Tennessee Gas Pipeline Company for all the transportation capacity on a new 30-inch pipeline that will connect the Cumberland Gas Plant to its gas supply.

100. While TVA has publicly disclosed only redacted copies, unredacted portions of the Precedent Agreement irrevocably commit TVA's resources to the Cumberland Gas Plant.

101. Section 7 sets a deadline for TVA to terminate the Precedent Agreement by December 1, 2022, based on the outcome of TVA's environmental review.

102. Section 9, "Reimbursement by [TVA] of Reimbursable Costs," appears to create a binding financial commitment for TVA to reimburse costs to Tennessee Gas Pipeline Company for its efforts and expenditures related to the pipeline, regardless of whether TVA were to timely terminate the Precedent Agreement.

103. Section 8 of the Precedent Agreement requires TVA, upon FERC approval of the pipeline, to execute service agreements "in a form substantially similar in all material respects" to the ones included in the Precedent Agreement.

104. With TVA locked into a contractual obligation to write supportive comments, to intervene in FERC's proceeding in favor of building the pipeline, and to make any other filings

the pipeline company may request, Tennessee Gas Pipeline Company began the process of obtaining FERC approval on October 29, 2021. The developer proposed a detailed route for its roughly 32-mile pipeline, citing as justification the "*binding* precedent agreement with TVA . . . for all the incremental firm transportation capacity that will be created by the proposed Project Facilities." Tenn. Gas Pipeline Co., LLC, Draft Resource Report 10, FERC Dkt. PF22-2-00, at 10-2 (April 2022) (emphasis added).

105. TVA has supported TGP's FERC application by, for example, filing with FERC on October 14, 2022 a motion seeking special permission to belatedly respond to Conservation Groups' comments on TGP's application, and arguing for an inaccurately narrow view of FERC's permitting authority in support of TGP's application.

TVA's Draft Environmental Impact Statement

106. On April 29, 2022, TVA published its Draft EIS purportedly evaluating the environmental impacts of and alternatives to replacing the Cumberland Fossil Plant with other generation resources.

107. To replace 1,450 megawatts of the retiring coal plant's capacity, TVA proposed three "Alternatives." Alternative A was a combined-cycle gas plant (defined here as the Cumberland Gas Plant), which would require a 32-mile gas-transmission pipeline. Alternative B was multiple combustion-turbine gas plants located on several TVA properties. Alternative C was a combination of solar facilities paired with battery-storage facilities.

108. Under each alternative, TVA would retire the Cumberland Fossil Plant, which consists of two coal-fired units, completely between 2028 and 2033. The new generation would replace generation from the Cumberland Fossil Plant's first unit, slated for retirement between 2026 and 2030. TVA would consider how to replace the coal plant's second unit in a subsequent proposal. Ultimately, in 2023, TVA proposed to replace most of the generation from the

Cumberland coal plant's second unit with a new 900-megawatt gas-fired power plant in Cheatham County, Tennessee.

109. Conservation Groups commented on the Draft EIS's extensive deficiencies.

110. So did the Environmental Protection Agency. U.S. EPA, Comments on the Draft EIS for the Cumberland Fossil Plant Retirement, Stewart County, Tennessee; CEQ No: 2022059 (June 30, 2022) (hereinafter "EPA Draft EIS Comments"); Final EIS, App'x P. EPA criticized TVA's consideration of alternatives, greenhouse gas emissions, and mitigation. The agency explained, "The EPA believes there are mitigation options and reasonable alternatives that were not analyzed in detail in the Draft EIS that would reduce GHG emissions." EPA requested that "TVA discuss how it maintains objectivity in the comparison of alternatives" when TVA had already "signed a precedent agreement to purchase gas supply from Tennessee Gas Pipeline prior to issuing its Draft EIS preference for Alternative A." EPA Draft EIS Comments at 11. Finally, EPA "recommend[ed] discussing why the closely related, interdependent natural gas pipeline whose need is triggered by Alternative A is undergoing a separate and distinct NEPA review, rather than a joint NEPA document with [FERC] as provided by 40 CFR § 1501.9(e)." *Id.* EPA requested to become a cooperating agency to help address the "substantial" concerns EPA raised in its comments. *Id.* at 3.

TVA's Final Environmental Impact Statement

111. On December 2, 2022, TVA published the Cumberland Final EIS.

112. The Final EIS failed to analyze and disclose what the Cumberland Gas Plant's greenhouse gas emissions mean for science-based climate-policy goals. The United States has committed to slowing global warming to well under 2° Celsius relative to preindustrial temperatures, requiring immediate, aggressive cuts in greenhouse gas emissions. President Biden has set a federal goal to decarbonize the electricity sector by 2035 and to reach net-zero greenhouse

gas emissions economy-wide by 2050. Local governments within TVA's service territory, including Nashville and Memphis, also have goals to reduce emissions community-wide. Despite requests from Conservation Groups and EPA, the Final EIS did not compare the Cumberland Gas Plant's projected emissions to the decarbonization pathways of local, federal, and international climate-policy goals.

113. The Final EIS also failed to analyze and disclose the Cumberland Gas Plant's climate impacts by substantially underestimating the volume and potency of methane emissions. Across the gas supply chain, from the wellfields to the turbines, gas infrastructure leaks significant amounts of methane. Scientists estimate that a leakage rate around three percent across the supply chain would mean burning gas is worse for the planet than burning coal.

114. TVA relied on a prior EPA estimate of methane leakage at 1.4 percent across the gas supply chain. Final EIS at 261. Yet, in its comments to TVA, EPA itself acknowledged, "Research also suggests that these methane emissions are larger than previously expected" and cited a 2018 study estimating a 2.4 percent leakage rate. EPA Draft EIS Comments at 11. Conservation Groups had submitted peer-reviewed studies finding leakage rates as high as 9.4 percent. TVA ignored contrary evidence in the record indicating leakage rates substantially higher than 1.4 percent.

115. TVA also underestimated the potency of methane emissions associated with the Cumberland Gas Plant. Conservation Groups had pointed out that, "[a]s a greenhouse gas, methane is more than eighty times as powerful as carbon dioxide in its first twenty years in the atmosphere." Sierra Club et al., Conservation Groups' Comments on TVA's Draft EIS for the Cumberland Fossil Plant Retirement 29 (June 13, 2022), (hereinafter "Conservation Groups' Comments"). To account for differences between different greenhouse gases, experts calculate global warming potential for

each gas compared to carbon dioxide to estimate the carbon dioxide equivalent ("CO_2e"). The International Panel on Climate Change estimates methane's 20-year global warming potential to be between 84 and 87—meaning methane is 84 to 87 times more potent than carbon dioxide over a 20-year period. Methane's 100-year global warming potential is between 28 and 36.

116. TVA exclusively applied the 100-year global warming potential for methane, estimating that methane emissions are 25 times as potent as carbon dioxide. Final EIS at 258. The Final EIS did not address methane's short-term potency, such as by applying and disclosing 20-year global warming potential to estimate CO_2e.

117. The Final EIS did not meaningfully evaluate the environmental impacts of the pipeline that would supply the Cumberland Gas Plant. TVA conceded that it was treating the 32-mile gas pipeline "as a related action under TVA's Alternative A." Final EIS at 19. In its Draft EIS, TVA declined to provide any discussion of the pipeline's site-specific impacts, deferring to the pipeline developer's subsequent FERC application. Thirteen times TVA wrote a nearly identical version of "TGP will provide a detailed analysis of [environmental] effects, which will be part of the Environmental Report to be submitted with their certificate application that will be filed with FERC for the proposed pipeline." Draft EIS at 139 (floodplains); 148 (groundwater); 167 (surface water); 174 (wetlands); 223 (vegetation); 237 (wildlife habitat); 244 (aquatic life effects); 279 (effects on protected species); 323 (transportation); 332 (utility effects); 361 (solid and hazardous waste effects); 402 (noise); 418 (visual).

118. Conservation Groups objected to TVA's attempt to segment analysis of the Plant and the pipeline, two literally connected projects. In the Final EIS, without comment or analysis, TVA cut-and-pasted multiple pages from of the pipeline company's FERC application. Final EIS at 209–12 (groundwater); 231–37 (surface water); 245–48 (wetlands); 309–11 (vegetation); 324–

27 (wildlife habitat); 334–37 (aquatic life effects); 374–76 (effects on protected species); 441–43 (traffic); 453 (utility effects); 486 (solid and hazardous waste effects); 533–37 (noise); and 553–54 (visual). For example, in its section on the pipeline's surface water impacts, TVA simply reprinted more than six consecutive pages of Tennessee Gas Pipeline Company's FERC application materials. Final EIS at 231–37.

119. In the Final EIS, TVA did not fairly evaluate carbon-free alternatives. Without breaking down the figures, TVA attributed a significant portion of its cost estimate to "substantial transmission upgrades." Final EIS at 80. TVA did not identify where on its system the solar and battery-storage investments would be located. Consequently, the Final EIS did not detail why the investments could not be, as an expert report submitted by Conservation Groups had recommended, "strategically sized and located to avoid exceeding interconnection capacity limits and triggering large-scale transmission upgrades." Conservation Groups' Comments, Att. 2 at 34. Further, the Final EIS apparently attributed 100 percent of the cost of the "significant transmission network upgrades" to Alternative C. In so doing, the Final EIS did not acknowledge that any investments in transmission would benefit TVA's power system more broadly, including by lowering the costs of subsequent solar-and-storage projects.

120. In the Final EIS, TVA's consideration of carbon-free alternatives was arbitrarily narrow. TVA excluded reasonable carbon-free resources like energy efficiency, demand response, and wind. The Final EIS ruled out these resources with the straw-man argument that each one, in isolation, could not replace 1,450 megawatts of capacity. But commenters, including Conservation Groups and the EPA, had urged TVA to consider a carbon-free energy "portfolio," featuring a combination of solar, storage, energy efficiency, demand response, and wind. While each resource (including a gas plant) has limitations, a diverse clean-energy portfolio could provide reliable

energy to TVA's customers at the lowest system cost.

121. Conservation Groups had submitted a report by Synapse Energy Economics demonstrating that replacing TVA's coal plants with a similar carbon-free energy portfolio, rather than gas plants, would result in customer savings of approximately $9.4 billion over 20 years. Conservation Groups' Comments, Att. 1 at 2. Conservation Groups had submitted an additional expert report demonstrating the cost-effectiveness and reliability of a carbon-free energy portfolio to specifically replace the Cumberland coal plant. Conservation Groups' Comments, Att. 2.

122. In its cost-benefit analysis across alternatives, TVA kept its thumb on the scale to favor Alternative A, the Cumberland Gas Plant, skewing the numbers to make gas look cheaper and carbon-free energy more expensive.

123. The Final EIS dramatically underestimated the costs of Alternative A, the Cumberland Gas Plant.

124. TVA excluded the costs of mitigating the Cumberland Gas Plant's greenhouse gas emissions. In the Final EIS, TVA identified two ways to mitigate the Cumberland Gas Plant's emissions: (a) installing a carbon-capture-and-sequestration system or (b) burning a hydrogen blend, rejecting both based on "current cost and maturity challenges[.]" Final EIS at 63.

125. In comments on the Draft EIS, EPA expressly requested that the Final "EIS discuss in detail options for significantly mitigating the environmental impacts of the proposed action, such as co-firing with and eventually moving to 100 percent clean hydrogen or installation of carbon capture equipment at the proposed power plant." EPA Draft EIS Comments at 2. For TVA's consideration, EPA provided a list of carbon-capture and hydrogen projects in various stages of development. As the agency with authority to regulate greenhouse gas emissions from power plants, EPA wrote: "A variety of State and Federal regulations are likely to affect the power sector

in the coming decades. In general, these regulatory efforts aim to reduce fossil fuel emissions." In May 2023, as the agency either predicted or foreshadowed, EPA published a draft rule proposing emissions limits for gas plants based on carbon capture and hydrogen blending.

126. Despite EPA's urging, TVA did not disclose the costs or feasibility of using either technology at the Cumberland Gas Plant in the Final EIS. Nonetheless, the Final EIS contains multiple suggestions that TVA will likely deploy carbon-capture or alternative-fuels technology for this facility. For example, TVA reports that it is "evaluating CCS and combustion of hydrogen as potential future mitigation for Alternative A and plans to ensure that plant design would enable future modifications for carbon capture and the combustion of hydrogen as a replacement or supplemental fuel for natural gas as the technologies mature." Final EIS at 63.

127. In its alternatives comparison in Appendix B, TVA also identifies carbon-capture and alternative-fuels technology as a benefit of the Cumberland Gas Plant, stating that "[combined-cycle] plants are positioned to further contribute to a net-zero future using alternative fuels, such as hydrogen, and/or carbon capture and sequestration (CCS) technology." Final EIS, App'x B – TVA Alternatives Evaluation, at 22.

128. TVA's system cost estimates in Appendix B also excluded the Social Cost of Greenhouse Gases as a cost of the Cumberland Gas Plant despite TVA's own statutory mandate to consider environmental costs, *id.* at 18, 21, and an executive order instructing agencies to account for climate costs when conducting cost-benefit analysis, Exec. Order 13,990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, 86 Fed. Reg. 7,037, 7,040 (Jan. 25, 2021). Executive Order 13,990 declared it "essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. . . . An accurate social cost is essential for agencies to accurately

determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions." *Id.*

129. The Final EIS overestimated the costs of Alternative C. Without disclosing critical assumptions, TVA estimated that the solar-plus-storage option would cost $1.8 billion more than the Cumberland Gas Plant.

130. TVA assumed that replacing 1,450 megawatts from the Cumberland Fossil Plant would require 3,000 megawatts of solar and 1,700 megawatts of battery storage. Using publicly available data and widely accepted methodology, expert Michael Goggin concluded that replacing that generation would require 2,638 megawatts of solar and only 234 megawatts of battery storage. In other words, Mr. Goggin estimated that TVA had overshot the capacity requirements by 14 percent for solar and by more than 700 percent for battery storage, dramatically driving up projected costs.

131. TVA's analysis excluded other system-wide financial benefits from Alternative C. For example, battery storage provides "ancillary services"—grid benefits like flexibility, deferred generation, and production-cost savings. Other utilities, including neighboring Georgia Power, have monetized this benefit. Conservation Groups' Comments at 23. Another benefit of Alternative C is that solar and storage insulate customers from volatile fuel costs. Again, other utilities have accounted for the value of "fuel price hedging." *Id.* at 24. The Final EIS failed to quantify or even discuss the ancillary services batteries provide and the value of reducing customers' exposure to fuel costs.

132. Between the Draft EIS and the Final EIS, Congress passed the Inflation Reduction Act, also known as the IRA, making billions of dollars available for carbon-free energy projects. Inflation Reduction Act of 2022, Pub. L. 117-169, 136 Stat. 1818 (2022). The IRA expressly

identifies TVA as eligible for many of the financial benefits. Inflation Reduction Act pt. 4, § 50141(d)(3)(D), pt. 8, § 6417(c)(1)(A). Commenters, including Conservation Groups and the EPA, demanded that TVA account for the billions in federal funding now available, but TVA refused. Nowhere in the Final EIS did TVA calculate how the IRA would affect the costs of its alternatives.

133. Finally, TVA's Final EIS did not resolve the many "substantial" concerns that EPA had raised about the Cumberland Gas Plant. EPA had requested to become a cooperating agency. EPA Draft EIS Comments at 3. TVA agreed to that request on the conditions that EPA "adhere to TVA's existing schedule" and limit its cooperation to three topics: "(1) estimates of greenhouse gases (GHG) and other pollutant emissions; (2) practical mitigation measures to reduce GHG and other pollutant emissions for alternatives involving natural gas; and (3) climate analysis." Final EIS, App'x P. But TVA refused to allow EPA to become a cooperating agency for purposes of alternatives development or analysis.

134. Between publication of the Final EIS and issuance of a Record of Decision, EPA notified TVA that the Final EIS "did not accept many of EPA's recommendations related to climate change or GHG emissions reductions[,]" including: "Completing a more robust evaluation of renewable power sources, including more attention on improved resiliency to all types of foreseeable grid emergencies; [i]ncorporating practical mitigation options to reduce greenhouse gas (GHG) emissions; [q]uantifying upstream GHG emissions; [f]ully integrating the 2021 interim estimates from the Interagency Working Group on Social Cost of GHG; [r]econciling TVA's position with national science-driven GHG reduction policy goals; and, [a]ddressing the potential to lock in large-scale fossil fuel use and production." U.S. EPA, Comments on the Final EIS for the Cumberland Fossil Plant Retirement, Stewart County, Tennessee; CEQ No: 20220181 (Jan. 6, 2023).

TVA's Response to December 2022 Blackouts

135. After the Final EIS, but before the Record of Decision, widespread failure across TVA's gas fleet forced TVA to implement rolling blackouts. On December 23 and 24, 2022, Winter Storm Elliott swept across the TVA service territory. Demand for electricity skyrocketed as people tried to stay warm in the extreme cold, but TVA could not generate or purchase enough electricity to meet demand. Not only did the Cumberland Fossil Plant fail completely, but roughly 30 percent of TVA's gas-fired units experienced correlated outages. As a result, TVA lost approximately 20 percent of its available energy production. Tenn. Valley Auth., After Action Report: Winter Storm Elliott (2023).

136. Partly due to constrained gas supply, neighboring utilities had no excess power to sell TVA. Without enough supply to meet demand, TVA initiated rolling blackouts, leaving millions without power during the historic cold snap over the Christmas holidays.

137. On January 6, 2023, Conservation Groups requested that TVA supplement its Final EIS, partly because of new circumstances and information revealed by TVA's rolling blackouts during Winter Storm Elliott. Sierra Club et al., Comments on TVA's Final EIS (Jan. 6, 2023).

138. The blackouts underscored the need to retire the Cumberland Fossil Plant, which failed completely and, with 30 percent of TVA's gas units offline, undermined the Final EIS's assumption that gas plants would provide firm, reliable power in a way that carbon-free alternatives could not.

139. The few solar facilities on TVA's system experienced no systematic failures during the storm. Solar experienced no outages, contributing power as expected during TVA's rolling blackouts on both December 23 and 24.

140. Across the region, wind turbines also performed well during the storm. Less than one percent of TVA's energy comes from wind, but its neighbors have considerably more. On

December 23 and 24, neighboring energy markets—like the Midcontinent Independent System Operator and Southwestern Power Pool—had more wind than they could sell. While TVA was implementing blackouts on December 23, Southwestern Power Pool curtailed approximately 3,000 megawatts of wind.

141. At the next TVA Board meeting, TVA's Chief Executive Officer, Jeff Lyash, touted the importance of energy storage and demand response in improving resiliency during the storm. In fact, Mr. Lyash announced that TVA had already made plans to add 1,000 megawatts of additional demand response within a year.

The Record of Decision

142. To be eligible to serve on the Board, individuals must "affirm support for the objectives and missions of the Corporation, including being a national leader in technological innovation, low-cost power, and environmental stewardship." 16 U.S.C. § 831a(b)(5). The TVA Act requires the Board of Directors to "establish [TVA's] broad goals, objectives, and policies," 16 U.S.C. § 831a(g)(1)(A), and "ensure that those goals, objectives, and policies are achieved," 16 U.S.C. § 831a(g)(1)(C).

143. Yet in November 2021, TVA's Board delegated authority to Mr. Lyash, to "evaluate, decide upon, and complete, if necessary, the retirements of the Cumberland and Kingston plants and replacement generation projects."

144. On January 20, 2023, Mr. Lyash issued a Record of Decision, choosing to build a new combined-cycle gas plant located in Cumberland City, Tennessee, i.e., the Cumberland Gas Plant. The Record of Decision did not address the widespread gas failures and rolling blackouts of Winter Storm Elliott.

145. Following the Record of Decision, counsel for Conservation Groups submitted a Freedom of Information Act (FOIA) request for "[a]ll records related to TVA's [NEPA]

determination of whether information related to Winter Storm Elliott and/or the 12/23/22 and 12/24/22 power outages required supplementation of the Cumberland Fossil Plant Retirement Final Environmental Impact Statement." Freedom of Information Act Request from S. Env't L. Ctr. to Tenn. Valley Auth. (Mar. 15, 2023).

146. In response, TVA's FOIA officer wrote, "We did not locate any records responsive to your request." Freedom of Information Act Response from Tenn. Valley Auth. to S. Env't L. Ctr. (Apr. 11, 2023).

CLAIMS FOR RELIEF

Claim One – Failure to Issue a Record of Decision Before Committing to Alternative A, the Cumberland Gas Plant

147. All allegations stated above are incorporated herein by reference.

148. Under NEPA, an EIS "shall be prepared early enough so that it can serve as an important practical contribution to the decision-making process and will not be used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5.

149. NEPA regulations prohibit an agency from taking actions that would "[l]imit the choice of reasonable alternatives" until it issues a record of decision following publication of a final EIS. 40 C.F.R. §§ 1506.1(a), 1505.2, 1502.2(f).

150. On August 11, 2021, TVA entered into the Precedent Agreement—a long-term contract subscribing to new pipeline capacity—with gas-pipeline developer Tennessee Gas Pipeline Company.

151. Under the Precedent Agreement, Tennessee Gas Pipeline Company agreed to build a new gas pipeline to supply gas to the Cumberland Gas Plant.

152. The Precedent Agreement provided that the new pipeline will be the exclusive means of transporting gas to the Cumberland Gas Plant, and TVA agreed to purchase all available

shipping capacity on the pipeline for an initial term of 20 years.

153. Section 7 of the Precedent Agreement allows TVA to terminate the contract "by no later than December 1, 2022" based on the outcome of its completed environmental review under NEPA.

154. Despite the termination provision, Section 9 of the Precedent Agreement, "Reimbursement by [TVA] of Reimbursable Costs," appears to create binding financial commitments for TVA, requiring the agency to reimburse Tennessee Gas Pipeline Company for certain expenses.

155. Execution of the Precedent Agreement launched significant contractually required efforts and expenditures by Tennessee Gas Pipeline Company to obtain approval to build and operate the new pipeline from state and federal regulators. The company applied for stream-crossing permits from the State of Tennessee and the Army Corps of Engineers, initiated a pre-filing process at FERC, and eventually submitted a formal application to FERC in July 2022.

156. In its application to FERC, Tennessee Gas Pipeline Company acknowledged the termination provision but still described the Precedent Agreement as "binding" and a "long-term firm transportation commitment" demonstrating "strong market demand" for the pipeline.

157. TVA did not terminate the Precedent Agreement.

158. TVA published its Record of Decision approving construction of the Cumberland Gas Plant on January 20, 2023.

159. TVA's execution of the Precedent Agreement in August 2021, which appears to have created binding financial obligations for TVA well before the completion of its NEPA process, is evidence that the agency's review was slanted to endorse the Cumberland Gas Plant.

160. By the time TVA issued its Record of Decision, the Precedent Agreement's

termination provision had expired, and the agency had fully bound itself to the Cumberland Gas Plant.

161. By entering into a long-term contract with Tennessee Gas Pipeline Company more than 16 months before issuing its Record of Decision, TVA irreversibly and irretrievably committed itself to the Cumberland Gas Plant, slanting its NEPA review towards a predetermined outcome and limiting its choice of alternatives in the Final EIS.

162. TVA's failure to complete its NEPA review for the Cumberland Gas Plant before the agency entered the binding Precedent Agreement with Tennessee Gas Pipeline Company violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

163. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Two – Failure to Take a Hard Look at the Climate Consequences of the Cumberland Gas Plant

164. All allegations stated above are incorporated herein by reference.

165. NEPA requires federal agencies to take a "hard look" at the environmental consequences of their proposed actions.

166. NEPA requires agencies to analyze and disclose the direct, indirect, and cumulative effects of their proposed actions and alternatives to those proposed actions. 40 C.F.R. §§ 1508.1(g), 1501.5(c), 1502.16(a)(1).

167. Relative to direct effects, indirect effects "are later in time or farther removed" but still reasonably foreseeable. 40 C.F.R. § 1508.1(g)(2).

168. Cumulative effects are "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable

actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.1(g)(3).

169. NEPA requires agencies to "make use of reliable existing data and resources" and ensure the scientific integrity of their discussions and analysis. 40 C.F.R. § 1502.23.

170. TVA estimated that the Cumberland Gas Plant would emit 2.79 million tons of greenhouse gases annually for a projected useful life of 30 years. Emitting 2.79 million tons per year would make the Cumberland Gas Plant the fourth largest source of greenhouse gas emissions in Tennessee.

171. In its interim guidance on climate change, the Council on Environmental Quality instructed agencies to "discuss whether and to what extent the proposal's reasonably foreseeable GHG emissions are consistent with GHG reduction goals, such as those reflected in the U.S. nationally determined contribution under the Paris Agreement." National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. at 1,203.

172. In comments on the Draft EIS, Conservation Groups and the EPA made the same request of TVA.

173. The Final EIS did not discuss whether and to what extent the Cumberland Gas Plant would be consistent with any local, federal, or international climate goals, including those outlined in the Paris Agreement and in Executive Orders 14,008, 14,057, and 14,082.

174. The Final EIS ignored reasonably foreseeable climate impacts from methane emissions related to the Cumberland Gas Plant. The Final EIS substantially underestimated the volume of upstream methane emissions, relying on a 1.4 percent methane leakage rate EPA had

identified as inaccurately low and ignoring peer-reviewed studies that demonstrate a substantially higher leakage rate.

175. The Final EIS failed to account for the short-term potency of methane emissions related to the Cumberland Gas Plant. The Final EIS applied only the 100-year global warming potential for methane, ignoring comments that TVA should account for methane's substantially higher 20-year global warming potential. TVA failed to analyze both the short- and long-term effects of the Cumberland Gas Plant's methane emissions. Consequently, TVA significantly underestimated the Plant's climate-change impacts.

176. The Final EIS failed to take a hard look at the climate change impacts of the Cumberland Gas Plant because it refused to consider the cumulative effects of the Plant in conjunction with TVA's broader gas build-out. The Final EIS arbitrarily cabined its cumulative impacts analysis to the immediate vicinity of the Cumberland Gas Plant, even though TVA has taken or proposed related actions outside the vicinity of the Cumberland Gas Plant that will have cumulative climate impacts.

177. TVA proposed 4,950 megawatts of the gas build-out within a six-month period in 2021. In May 2023, four months after finalizing the Cumberland Gas Plant to replace capacity from the Cumberland Fossil Plant's first unit, TVA proposed another 900-megawatt gas plant to partially replace the Cumberland Fossil Plant's second unit. The same day, TVA revised its proposal for the Kingston replacement project, increasing its preferred alternative from one 1,450-megawatt gas plant to two gas plants totaling 1,500 megawatts. TVA unreasonably failed to evaluate the cumulative climate impacts of the Cumberland Gas Plant in combination with the remainder of TVA's 5,900-megawatt gas build-out.

178. TVA's failure to take a hard look at the climate-change impacts of the Cumberland

Gas Plant in the Final EIS violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

179. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Three – Failure to Take a Hard Look at the Impacts of a Connected Action

180. All allegations stated above are incorporated herein by reference.

181. NEPA requires federal agencies to take a "hard look" at the environmental consequences of their proposed actions.

182. NEPA requires agencies to consider the environmental consequences of "connected actions" in the same EIS as a proposed action. 40 C.F.R. § 1501.9(e)(1).

183. Under NEPA's implementing regulations, "[a]ctions are connected if they: (i) Automatically trigger other actions that may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; or (iii) Are interdependent parts of a larger action and depend on the larger action for their justification." 40 C.F.R. § 1501.9(e)(1).

184. While an "applicant" may submit environmental information for possible use by the agency in preparing an EIS, "[t]he agency shall independently evaluate the information submitted or the environmental document and shall be responsible for its accuracy, scope, and contents." 40 C.F.R. § 1506.5(b)(2).

185. Alternative A, the Cumberland Gas Plant, requires construction of a new gas pipeline to supply fuel, without which the Plant cannot operate.

186. TVA conceded that the Tennessee Gas Pipeline Company lateral pipeline is a connected action of Alternative A, the Cumberland Gas Plant, in the Final EIS.

187. Despite recognizing the pipeline as a connected action, TVA failed to

independently evaluate the impacts of pipeline construction in the Final EIS.

188. TVA attempted to supplement the minimal discussion of pipeline impacts in the Draft EIS by cutting and pasting large, multipage sections of text from "resource reports" prepared by Tennessee Gas Pipeline Company into the Final EIS.

189. The "resource reports" are preliminary assessments of pipeline impacts that Tennessee Gas Pipeline Company prepared and submitted to FERC with its application for a certificate of public convenience and necessity. FERC uses these reports to prepare its own NEPA review documents, frequently after multiple requests for additional information about topics covered by the reports.

190. Because the quoted language from the "resource reports" appears for the first time in the Final EIS, the public did not have an opportunity to comment on its adequacy during the comment period on the Draft EIS.

191. TVA did not explain whether it independently reviewed the quoted language from the "resource reports" to determine the adequacy of Tennessee Gas Pipeline Company's explanations of impacts or whether the agency simply copied it without independent review and analysis.

192. Evidence of TVA's failure to independently evaluate the adequacy of the "resource reports" occurs in multiple places in the Final EIS.

193. For example, TVA concluded, in its response to comments, that "the dry open cut approach is the most practical, least impactful, and least risky stream crossing method." But TVA reached this conclusion without acknowledging or grappling with expert engineering evidence in the record demonstrating that trenchless crossing methods, not the dry-open-cut method, are the least destructive approaches.

194. TVA also concluded that the impacts to surface water from pipeline construction would be "moderate" and "short-term." Again, TVA reached this conclusion without acknowledging or grappling with scientific evidence in the record demonstrating that impacts to surface waters can, in fact, be long-term.

195. Because it uncritically accepted Tennessee Gas Pipeline Company's "resource reports" as definitive and by ignoring evidence in the record about the full scope of the pipeline's impacts, TVA failed to take a hard look at the impacts of pipeline construction.

196. TVA's failure to independently evaluate the impacts of pipeline construction in the Final EIS violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

197. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2)

Claim Four – Failure to Objectively Consider Reasonable Carbon-Free Energy Alternatives

198. All allegations stated above are incorporated herein by reference.

199. NEPA requires federal agencies to consider a reasonable range of alternatives to their proposed actions in an EIS. 40 C.F.R. §§ 1501.5(c)(2); 1502.14.

200. NEPA requires that agencies take a "hard look" at the environmental consequences of their proposed action and alternatives. Agencies must adequately study the issues and provide an explanation that rationally connects the data with the choice made.

201. NEPA requires agencies to objectively compare alternatives using accurate and reliable information. 40 C.F.R. §§ 1502.14, 1502.23.

202. While agencies may identify a preferred alternative, an EIS "must be objectively prepared and not slanted to support the choice of the agency's preferred alternative over the other reasonable and feasible alternatives." Forty Most Asked Questions Concerning CEQ's National

Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,027 (Mar. 23, 1981).

203. NEPA imposes requirements on federal agencies with regard to "incomplete or unavailable information" in an EIS. 40 C.F.R. § 1502.21. For example, an agency must obtain available information and include it in an EIS if the information is "essential to a reasoned choice among alternatives" and the "overall costs of obtaining it are not unreasonable[.]" *Id*. §1502.21(b). If the "overall costs of obtaining [the information] are unreasonable or the means to obtain it are not known," an agency shall identify it as "incomplete or unavailable[,]" explain its relevance, summarize relevant "credible scientific evidence[,]" and employ "theoretical approaches or research methods generally accepted in the scientific community." *Id*. § 1502.21(c).

204. Federal agencies are not free to skip examining viable alternatives and cannot ignore contrary or conflicting information in the administrative record for an EIS.

205. In dismissing Alternative C, the solar and battery-storage option, TVA explained that "these alternatives would require substantial transmission upgrades and lengthy timeframes for the transmission work such that they would not meet the need to provide replacement generation by the time the first [Cumberland Fossil Plant] unit is retired in 2026."

206. TVA cited the same transmission issues as a reason to dismiss a carbon-free energy portfolio, which would include solar and storage and other carbon-free energy resources like energy efficiency and demand-response programs, without detailed analysis as an alternative in the Final EIS.

207. TVA estimated that transmission upgrades for Alternative C, the solar and battery-storage option, would take nine to eleven years to complete and add approximately $500 million in project costs.

208. The location of new solar and storage projects directly correlates to the time and

money required for transmission upgrades, but TVA did not identify the locations of new solar and storage projects.

209. TVA acknowledged via a report from its own expert consultant that it did not study the transmission issue in detail for Alternative C: "In addition to the complexity and scale of project development for Alternative C, the accompanying transmission and distribution upgrades have not been fully studied, primarily because the location of the new solar and storage projects are not fully known."

210. TVA dismissed both Alternative C and a carbon-free energy portfolio in large part because it concluded that the required transmission upgrades would take too much time and be too costly. But TVA knows how to study the cost and timing of connected infrastructure necessary to support its alternatives analysis because it undertook that analysis for the new gas pipeline that will connect to Alternative A, the Cumberland Gas Plant.

211. The Final EIS was the only NEPA document in which TVA purported to analyze Alternative C to this project.

212. Because TVA could have but chose not to study Alternative C in the level of detail that would allow it to achieve a better understanding of transmission needs, TVA failed to objectively examine a viable alternative to its preferred outcome.

213. TVA also did not explain its decision to ignore expert analysis by Michael Goggin submitted into the record by the Conservation Groups further demonstrating that Alternative C is viable and contradicting TVA's unexplained assumptions about the timing and cost of transmission upgrades.

214. Mr. Goggin's report explained that Alternative C facilities could be strategically sited and that solar and battery-storage projects could be installed in less than three years and more

cost-effectively than TVA predicts, largely because they can be "strategically sized and located to avoid exceeding interconnection capacity limits and triggering large-scale transmission upgrades."

215. Because TVA did not study whether strategically locating solar and storage facilities could obviate the need for substantial transmission upgrades reducing the time and cost to install Alternative C and a clean-energy portfolio, TVA failed to objectively compare alternatives, failed to obtain essential information relevant to a reasoned choice among alternatives, and failed to meaningfully grapple with conflicting evidence in the record.

216. TVA's incomplete analysis of Alternative C and its dismissal of a carbon-free energy portfolio without detailed analysis in the Final EIS violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

217. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Five – Failure to Rely on Accurate Economic Assumptions to Compare Alternatives

218. All allegations stated above are incorporated herein by reference.

219. NEPA requires federal agencies to consider a reasonable range of alternatives to their proposed actions in an EIS. 40 C.F.R. § 1502.14.

220. NEPA requires agencies to objectively compare alternatives using accurate and reliable information. 40 C.F.R. §§ 1502.14, 1502.23.

221. While agencies may identify a preferred alternative, an EIS "must be objectively prepared and not slanted to support the choice of the agency's preferred alternative over the other reasonable and feasible alternatives." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. at 18,027.

222. An agency violates NEPA when it relies on inaccurate economic assumptions that impair or skew its comparison of alternatives in an EIS.

223. An agency violates NEPA when it relies on anticipated benefits of its preferred alternative but fails to consider the costs of that alternative.

224. The TVA Act requires TVA to engage in "a planning and selection process for new energy resources . . . 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(b)(1). "[S]ystem cost" means "all direct and quantifiable net costs for an energy resource over its available life, including the cost of production, transportation, utilization, waste management, [and] environmental compliance." 16 U.S.C. § 831m-1(b)(3). "[L]owest system cost" includes "harms that a decision might do to human health or the environment." *Kentucky Coal Ass'n, Inc. v. TVA*, 804 F.3d at 802 (quoting *Michigan v. EPA*, 576 U.S. at 752).

225. Executive Order 13,990 declares it "essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account." Executive Order 13,990 provides that "agencies shall use [interim guidance from the Interagency Working Group on the Social Cost of Greenhouse Gases] when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published[.]"

226. TVA compared the three alternatives it evaluated in the Final EIS in Appendix B, which is called "Cumberland Retirement EIS: Final Alternatives Evaluation."

227. As part of its comparison of alternatives, TVA calculated the "total system costs" for each of the three alternatives.

228. TVA concluded that Alternative A, the Cumberland Gas Plant, was the lowest-cost alternative, coming in $1.83 billion less than Alternative C, the solar and battery-storage option.

229. TVA included the costs of the following elements to calculate the total system cost

for the Cumberland Gas Plant: "[combined-cycle] plant construction and operation, limited transmission upgrades, and pipeline lateral construction."

230. TVA did not include the cost of installing a carbon-capture-and-sequestration system for Cumberland Gas Plant or the cost of converting the Plant to an alternative fuel like hydrogen in its calculation of total system costs.

231. The Final EIS relied on the benefits of deploying carbon-capture technology or an alternative fuel like hydrogen for the Cumberland Gas Plant to justify its selection as the preferred alternative and suggested throughout that implementation of one, or both, of these technologies is likely.

232. In its comparison of alternatives in Appendix B, TVA touted the "potential use of alternative fuels" or carbon-capture technology as a positive attribute of the Cumberland Gas Plant relative to other alternatives.

233. TVA committed that "[i]f Alternative A is selected, TVA will ensure that proposed plant design enables and accommodates future modifications necessary for incorporating carbon capture and storage (CCS) and will obtain combustion equipment that can utilize hydrogen fuel blending as these technologies mature."

234. TVA also reported that it is evaluating geologic storage at or near the Cumberland site, including drilling a test well; on-site use of carbon dioxide as a feedstock for industrial processes; and off-site storage potentially in the Coastal Plain.

235. TVA expects the Cumberland Gas Plant to operate for 30 years, from 2026 to 2056.

236. Federal climate policy will require mitigation of the Cumberland Gas Plant's carbon emissions well before 2056. Executive Order 14,082 set the goal of "a carbon-free electricity sector by 2035[.]"

237. TVA's greenhouse-gas-reduction goals may also require mitigation of the Cumberland Gas Plant's carbon emissions well before 2056. TVA reported that it "has a plan for 70 percent TVA system-wide carbon reductions by 2030 (referenced to a 2030 baseline), a path to ~80 percent carbon reduction by 2035, and aspires to net-zero carbon emissions by 2050."

238. TVA's May 2021 "Strategic Intent and Guiding Principles," a document referenced in the Final EIS, identifies carbon capture as a technology TVA intends to deploy to mitigate the carbon emissions of its gas-fired power plants.

239. The EPA, the agency with authority to regulate greenhouse gas emissions from gas plants, commented to TVA: "A variety of State and Federal regulations are likely to affect the power sector in the coming decades. In general, these regulatory efforts aim to reduce fossil fuel emissions." EPA requested that TVA "discuss in detail options for significantly mitigating the environmental impacts" of the Cumberland Gas Plant, including by applying carbon capture or hydrogen technology. EPA wrote that "TVA should also provide the total costs for these mitigation measures so that risks of financial impact are fully understood."

240. By excluding the cost of carbon-capture technology for Alternative A, the Cumberland Gas Plant, and the cost of converting the Plant to hydrogen, TVA has misleadingly assumed that these costs are zero.

241. TVA excluded the direct and quantifiable Social Costs of Greenhouse Gases from its calculation of total system costs for Alternative A, the Cumberland Gas Plant.

242. At EPA's insistence, TVA nevertheless quantified the Social Cost of Greenhouse Gases for each alternative, estimating that Alternative A, the Cumberland Gas Plant, would generate approximately $10.5 billion more in climate-related harm than Alternative C.

243. By excluding consideration of the Social Cost of Greenhouse Gases in its

calculation of total system costs, TVA has misleadingly assumed that this value is zero instead of $10.5 billion.

244. TVA failed to account for renewable-energy incentives contained in the Inflation Reduction Act in its calculation of total system costs for Alternative C, inaccurately representing that those incentives would be unavailable.

245. The IRA created billions of dollars of incentives for deploying carbon-free energy technology, and TVA is eligible for many of those incentives.

246. Nonetheless, TVA said that the Internal Revenue Service will take "up to a year, if not longer" to issue guidance on IRA incentives which does not meet its timeframe for replacement of the Cumberland Fossil Plant.

247. The Internal Revenue Service issued guidance on the major provisions of the IRA's carbon-free energy tax credits in November 2022 that confirmed that the rules for tax-credit qualification remain unchanged.

248. Solar and battery-storage resources installed as part of Alternative C would qualify for a 30-percent tax incentive. That incentive could be increased by ten percent for projects meeting certain domestic content requirements and another ten percent for projects located in "energy communities," which could include communities like Cumberland City, Tennessee.

249. Tax incentives in the IRA significantly reduced the cost of solar and battery-storage resources in Alternative C.

250. By excluding consideration of the tax incentives for Alternative C in its calculation of total system costs, TVA has misleadingly assumed that the value of these incentives is zero.

251. By excluding the costs of greenhouse gas mitigation, the Social Cost of Greenhouse Gases, and economic incentives available under the IRA, TVA's total system cost analysis was

based on inaccurate and misleading economic assumptions that impaired and skewed its comparison of alternatives in favor of Alternative A, the Cumberland Gas Plant.

252. TVA's reliance on inaccurate and misleading assumptions in its comparison of alternatives in the Final EIS violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

253. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Six – Failure to Supplement the Final Environmental Impact Statement

254. All allegations stated above are incorporated herein by reference.

255. NEPA requires agencies to "prepare [a] supplement[]" to an EIS if, before the proposed project's completion, there are "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. §1502.9(d)(ii).

256. In determining whether to prepare a supplemental EIS, an agency must make "a reasoned decision based on its evaluation of the significance—or lack of significance—of the new information." *Marsh v. Or. Nat. Resources Council*, 490 U.S. 360, 378 (1989).

257. Conservation Groups proffered information indicating that the failures of the Cumberland Fossil Plant and TVA's gas fleet during Winter Storm Elliott required TVA to supplement the Final EIS. The rolling blackouts had significant health and socioeconomic effects, leaving millions without power over the Christmas holidays. The failures of the Cumberland Fossil Plant and 30 percent of TVA's gas fleet undermined core assumptions in TVA's Final EIS and altered the range of reasonable alternatives, demonstrating the risk of over-reliance on gas and the value of a carbon-free-energy portfolio.

258. According to TVA's FOIA officer, TVA did not take *any* look at whether the rolling

blackouts during Winter Storm Elliott required supplementation of the Final EIS.

259. In deciding not to supplement the Final EIS, TVA unreasonably failed to consider significant new circumstances and information, including: (a) the unreliability of the Cumberland Fossil Plant from December 22, 2023 until its retirement; (b) the risk of extreme winter weather on gas supply; (c) the risk of extreme winter weather on gas-fired power plants; and (d) the resiliency and value demonstrated by demand response, energy storage, solar, and wind during Winter Storm Elliott.

260. TVA's failure to evaluate significant new information and circumstances in a supplemental EIS violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

261. Accordingly, the Cumberland Final EIS and the Cumberland Record of Decision must be held unlawful and set aside. 5 U.S.C. § 706(2).

PRAYER FOR RELIEF

WHEREFORE, based upon all the allegations contained in the foregoing paragraphs, Plaintiffs Appalachian Voices, the Center for Biological Diversity, and Sierra Club respectfully request that the Court:

a) Enter a declaratory judgment that the Cumberland Final EIS violated NEPA and TVA's decision to issue the Cumberland Record of Decision was arbitrary, capricious, and/or not in accordance with law;

b) Enter a declaratory judgment that TVA's failure to supplement the Cumberland Final EIS violated NEPA and was arbitrary, capricious, and/or not in accordance with law;

c) Vacate the Cumberland Final EIS and the Cumberland Record of Decision;

d) Order TVA to prepare a revised Draft EIS or supplemental EIS subject to public

comment that corrects the NEPA violations identified in this Complaint;

e) Enjoin further construction and operation of the Cumberland Gas Plant until TVA has complied with NEPA;

f) Award Plaintiffs the costs of this action, including attorney fees, pursuant to 28 U.S.C. § 2412; and

g) Grant such other relief as this Court deems just and equitable.

DATE: June 13, 2023

Respectfully submitted,

/s O.W. "Trey" Bussey

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[1] As required by Local Rule 83.01(d)(3), Mr. Buppert is a member of the Tennessee bar and has provided his Tennessee Board of Professional Responsibility number.