




FROM CLIMATE LAGGARD TO CLIMATE LEADER



A Roadmap for the Tennessee Valley
Authority's Board Members to Drive the
Nation's Largest Public Power Provider to
100% Renewable Energy

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A Roadmap for the Tennessee Valley Authority's Board
Members to Drive the Nation's Largest Public Power
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TVA gas plant photo by John Blair

Solar array photo by Argonne National Laboratory

EXECUTIVE SUMMARY

President Biden has called for the U.S. electricity sector — the second largest carbon-emitting sector — to achieve zero carbon emissions by 2035. The Tennessee Valley Authority — the country's largest public power provider and a federal agency — is wildly off this track. TVA is one of the country's largest emitters, ranking in the top 10 amongst the 100 largest electric power producers and averaging 50 million tons of CO₂ emissions.¹ Rather than immediately retire its coal fleet within this decade, and replace its fossil fuel generation with renewable energy, TVA is planning to build out new fossil gas capacity. In fact, the agency has the **second largest planned gas capacity of all major utilities**.² At the same time, TVA is *suppressing* the region's transition to renewable energy — a mere 3% of TVA's overall generating mix.³ The direction TVA is taking has generated widespread outrage from local and national groups, spurring the creation of the Clean Up TVA coalition.⁴

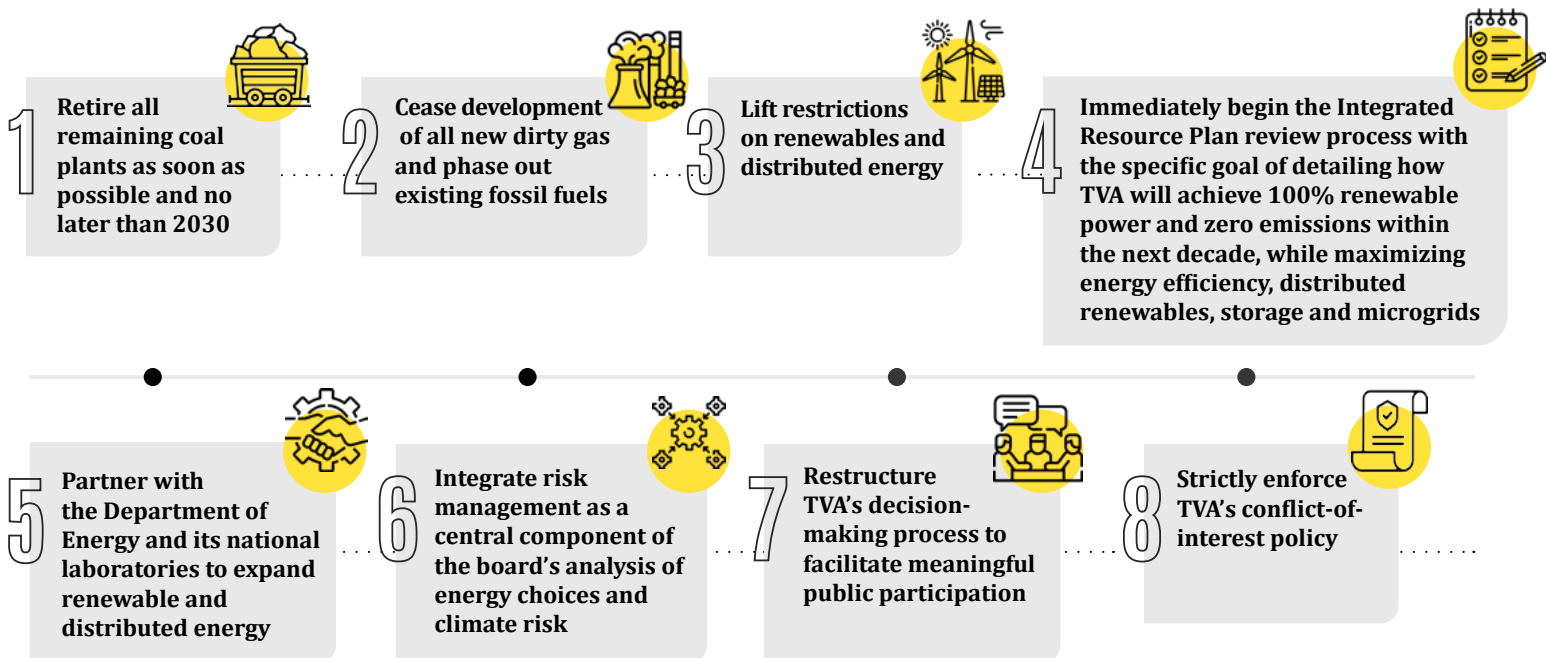
Recent global events serve as further proof that the United States must urgently transition off fossil fuels on a wartime footing. Russia's war in Ukraine has major implications for global energy supply, contributing to rising oil and gas prices that put customers — like those in the TVA region who already experience some of the highest energy burdens in the country — in an even more energy insecure position. As we witness the

downsides to persistent fossil fuel use, it is especially troubling that TVA is actively pursuing more dirty energy. TVA's movements in the wrong direction seriously undermine the agency's stated commitment to preserving low-cost energy and improving the quality of life of its 10 million customers. Russia's invasion of Ukraine demonstrates that genuine energy security and independence lie in resilient, clean energy sources, not on volatile fossil fuels that drive the climate emergency and fuel war and conflict.⁵

At the same time, TVA is fueling an energy affordability crisis that compounds the effects of the climate emergency. The TVA service territory is marked by significant racial and wealth inequality, with low-wealth communities, and especially Black and Brown households — which respectively make up 25 and 7 percent of the TVA territory⁶ — disproportionately burdened by rising electricity bills and fossil fuel pollution.⁷

It's not too late for TVA to lead the country in tackling the most pressing crisis of our time: the climate emergency. It is Biden's responsibility to appoint competent climate justice leaders to the TVA board. With such leaders TVA can set the stage for an energy future that is good for our climate and will ensure *all* households have access to affordable, reliable, renewable, and wildlife-friendly electricity.

TO PUT TVA ON A PATH TO CLIMATE LEADERSHIP, THE TVA BOARD SHOULD:



TVA'S RECORD OF FOSSIL FUELS AND ENVIRONMENTAL INJUSTICE

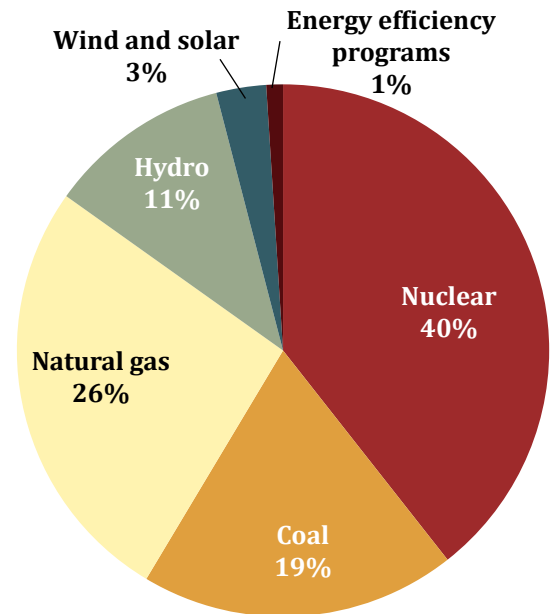
TVA is stuck in the dirty energy status quo, a perpetual cycle of fossil fuel dependence and environmental injustice.

Yet the board actively delays its necessary transition to renewable energy, evades climate action, and shirks its responsibility to serve the public interest rather than profits.⁸ Here are the greatest obstacles TVA is throwing up against a renewable, just energy transition.

1. ***TVA's dirty energy plan violates President Biden's clean energy mandate and defies climate science.*** According to its own projections TVA plans to generate **at least 34 million tons of carbon emissions by 2038⁹**, the equivalent of 7.4 million cars.¹⁰ TVA's carbon dioxide emissions reduction rate is at 3%, far too slow to accomplish Biden's decarbonization goal, which requires a rate more than twice as fast.¹¹ TVA consistently *ranks near last* among all major electric utilities' decarbonization commitments.¹² In 2019 TVA emitted more than *26 million tons* of carbon from its five coal plants.¹³ Despite these high emissions, TVA is leisurely phasing out its coal fleet with a plan to delay complete retirement until 2035.¹⁴ A recent study says coal production must be eliminated by 2030 to have any chance of limiting global warming to 1.5 degrees Celsius.¹⁵

TVA also plans to lock its customers into decades of dirty gas. Even though it may retire its coal plants by 2035, the agency *is actively pursuing climate-polluting gas as a replacement energy source*. TVA has the second-largest planned gas capacity of all major utilities, with 4 gigawatts of new dirty gas planned by 2030.¹⁶ TVA recently announced a \$1 billion project for 1,500 megawatts of new fossil gas.¹⁷ To meet global climate targets, the U.N.

Intergovernmental Panel on Climate Change warns against "lock[ing] in carbon-emitting infrastructure, stranded assets, and reduced flexibility in future response options."¹⁸



Today, TVA's generation portfolio is 39% nuclear, 19% coal, 26% natural gas, 11% hydro, 3% wind and solar, and 1% energy efficiency programs with a total capacity of 33,727 megawatts.

2. ***TVA is blocking local power companies (LPCs) from obtaining renewable energy, spurring a defection movement away from TVA.*** TVA is preventing LPCs and other customers from making their own renewable energy investments. TVA's continued dependence on fossil fuels has led several LPCs to seek permission from the Federal Energy Regulatory Commission to obtain power from *non-TVA sources*.¹⁹ In addition, TVA's new long-term contracts keep local utility customers

Kingston Fossil Plant,
photo by Gaby Sarri-Tobar



tethered to fossil fuels for decades to come. These contracts cap LPC's self-generation — such as from rooftop and community solar — at 5%, severely hampering their flexibility to obtain clean energy.²⁰

These restrictive policies have pushed TVA's largest customer, Memphis Light, Gas and Water, to consider defection. Memphis Light, Gas and Water is immersed in a bidding process with alternative power suppliers.²¹ There are many benefits to defection. The Memphis utility could produce cheaper renewable energy, save millions of dollars, and spur economic development. TVA's failure to heed the demands of its customers is a recipe for mass defection from TVA's centralized power supply.

3. ***TVA is quashing rooftop solar and energy efficiency, hurting its customers.*** TVA implemented a first-ever grid access charge to discourage businesses and homeowners from opting for cleaner, safer renewable energy sources like rooftop solar.²² A recent cut to TVA's Green Power Providers program, which compensated residential solar customers for solar generation, has further limited households' access to distributed energy.²³ Within the past few years TVA has also slashed funding for its energy efficiency programs,²⁴ which are key to reducing emissions and demand for fossil fuel energy, and lowering utility bills. All that remains are educational workshops and some minor investment in low-income efficiency programs that require matching funds from local power companies.²⁵

TVA's lack of investment in renewable energy has attracted the attention of the House Energy and Commerce Committee, which recently probed TVA on its business practices, including its plans to address high electricity bills with energy efficiency and distributed solar.²⁶ TVA responded with misleading information, such as asserting building codes and appliance standards have made energy efficiency programs unnecessary. As for its discriminatory solar charges, TVA claimed distributed solar shifts costs to customers without solar, even though this argument has been disproven.²⁷

4. ***TVA is fueling environmental and energy justice crises.*** TVA's continued reliance on coal and gas presents public health risks. TVA residents are still suffering the environmental and health impacts of the 2008 Kingston Coal Ash disaster.²⁸ The utility misled hundreds of workers by refusing to provide proper protective equipment and withholding information about the toxicity of the coal ash.²⁹ TVA dumped this toxic waste in the Black community of Uniontown, Alabama, leaving residents to suffer life-altering health problems. Even after a seven-year cleanup and the deaths of more than 50 workers, TVA has not taken

proper precautions in handling and disposing of waste from its coal plants. Since November 2021 activists have been battling TVA's coal ash disposal in a Memphis landfill.³⁰



TVA continues to dupe communities with the false promise of gas as a reliable fuel investment. Fossil gas is as environmentally racist and as dangerous to public health as coal. In the United States the proportion of Black residents living within three miles of a power plant is higher for gas than for coal (13.4% compared to 8.1%).³¹ These communities are also disproportionately exposed to harmful methane, particulate matter and other pollutants.

At the same time, TVA is fueling an energy affordability crisis that compounds the effects of the climate emergency. The TVA service territory is marked by significant racial and wealth inequality, with low-wealth communities, and especially Black households, disproportionately burdened by rising electricity bills and fossil fuel pollution.³² TVA customers experience overwhelmingly high energy burdens — defined as the percentage of income spent on electricity bills, with 6% being considered high. Some households have energy bills as high as 40% of their income.³³

Households in this region — a quarter of which are Black³⁴ — have some of the highest electricity bills in the country, as high as \$200/month in some states where TVA supplies electricity.³⁵ Alabama households pay more monthly for electricity than any other state, with Tennessee, Mississippi and Georgia not far behind.³⁶ Rooftop and community solar have been shown to lower energy bills and help alleviate this energy burden.³⁷ However, TVA has implemented policies that discourage residents from more affordable renewable energy, such as regressive rate hikes targeting solar energy users. Shortly after the pandemic hit, organizations in the Tennessee Valley called on TVA to address utility shutoffs, disproportionate energy burdens and lack of access to renewable energy by Black, Brown and low-wealth communities.³⁸ The board has failed to address these concerns.

5. ***TVA is thwarting a transparent and public input process.*** Despite being a public utility, TVA has ignored calls for bolder energy planning and public hearings about the impact of its policies on the communities it serves.³⁹ The agency has a statutory mandate for public hearings, yet TVA has *never* held such hearings.⁴⁰ Although the agency has resumed public listening sessions in connection with Board meetings, combined with standard practice of accepting written comments, it does not provide for meaningful public participation from organizations, ratepayers, and other community members. TVA has prevented the public from participating in committee meetings where most decision-making happens.
6. ***TVA's future is muddled by fossil fuel and corporate interests.*** Like other federal agencies, TVA has a conflict-of-interest policy to help ensure transparency and hold employees accountable for relationships that may personally benefit them at the expense of the agency. However, the agency does not publicly disclose this information.⁴¹ This is especially concerning given that TVA's current leadership, including CEO Jeff Lyash, boasts strong ties to the fossil fuel industry⁴² and corporations that have been significant drivers of the climate emergency, environmental destruction, public health crisis⁴³ and energy injustice.

TVA Can Become the Climate Leader for Power Utilities

Decades ago TVA was pioneering clean energy technology to bring affordable electricity to rural communities throughout Tennessee and beyond.⁴⁴ Former TVA Chair Dave Freeman spearheaded this work and set a model for the leadership future board members must embrace. From 1977 to 1984, Freeman helped actualize TVA's mission of environmental stewardship by accelerating the agency's transition from polluting, centralized power to renewable and distributed energy.⁴⁵

Today TVA and the world face a new reality. Russia's war of aggression in Ukraine and rising oil and gas prices have given us a hard look at our energy future. Plagued by violence, pollution, and energy insecurity, our continued reliance on fossil fuels will worsen energy injustice and severely limit our chances at preserving a livable planet by limiting global warming to 1.5 degrees Celsius.

Fossil fuels are the most significant driver of the climate emergency — a crisis we cannot afford to put on the back burner. The climate emergency is ravaging the country and globe, with the United States experiencing unprecedented hurricanes, floods, wildfires, and heat domes. Particularly in TVA's territory, this crisis is manifesting in more pronounced storms, like the tragic Kentucky tornado and Memphis ice storm that left many without power and extensive flooding over the summer that decimated homes.⁴⁶ The president even declared a disaster under the Stafford Act for the state of Tennessee as a result of the winter ice storm.⁴⁷ The damage we're

seeing today is a sign of what's to come. Climate science demands rapid emissions reduction and complete divestment from coal, oil, and gas.

The Biden administration has called on the entire federal government, which includes TVA, to address the climate emergency in full force. In January 2021 the president called all agencies to reach carbon-free electricity by 2035,⁴⁸ and in a December 2021 executive order he instructed the entire federal government to meet a series of ambitious climate goals. These include powering TVA and all federal agencies with carbon pollution-free resources by 2030 and orienting procurement and operations toward climate resiliency, sustainability and environmental justice and equity.⁴⁹

New TVA board members should seize this opportunity to align the agency with Biden's climate and energy vision and return TVA to its pioneering renewable energy roots.

TVA can be a national laboratory for developing the just energy system necessary to addressing the legacy of social, economic and environmental injustice exacerbated by our current energy system. This requires distributed renewable technologies like rooftop solar, microgrids and energy efficiency, which can complement responsibly sited utility-scale renewable energy.⁵⁰

TVA should foster the kind of innovation that can make the agency carbon-free, grow union jobs, and reduce energy burdens.

TVA would also set the example for all private and public utilities across the country as they pursue decarbonization plans.

Eight Steps the TVA Board Can Take to Transform From Climate Laggard to Climate Leader

Tennessee Valley communities are living with the climate emergency and the dangers of reliance on fossil fuels, with devastating tornadoes, flooding, persistent power shutoffs, and skyrocketing electricity costs.⁵¹

Climate change in the Southeast has led to higher temperatures and greater demand for water that will strain the region's water resources; extreme weather, increased temperatures and flooding that will likely affect human health, infrastructure and agriculture; and sea-level rise that is expected to contribute to increased hurricane activity and storm surge.⁵² Just within the past year, more pronounced storms like the tragic Kentucky tornado, Memphis ice storm, and summer flooding ravaged the region, leaving many without power and homes.⁵³

Black, Brown, Indigenous and other communities of color and low-wealth communities have borne the brunt of TVA's fossil fuel dependence and climate disasters.



TVA gas plant, photo by John Blair

⁵⁴ As a mega-polluter and federal agency, TVA has a significant role to play in tackling this crisis by urgently lowering emissions and improving the quality of life for Tennessee Valley residents by prioritizing energy and environmental justice.

Congress charged TVA with the obligation to “reduc[e] environmental impacts on the Valley’s natural resources . . . [by] reducing carbon intensity and air emissions, minimizing waste, and protecting water resources.”⁵⁵ The TVA board is responsible for establishing the agency’s goals and developing long-range plans to guide TVA toward these statutory objectives.⁵⁶ This includes “integrat[ing] environmental considerations and science-based decision making into strategy, design, construction, and operational impacts to mitigate environmental impacts.”⁵⁷

Given these legal duties, TVA board members should take the following actions:

1. Retire all remaining coal plants by 2030.

TVA has announced plans to retire its remaining coal plants by 2035,⁵⁸ but this timeline is insufficient to meet Biden’s clean energy mandate and climate science demands.⁵⁹ These coal plants have been the source of tremendous coal ash pollution that have contaminated the surrounding environment, particularly waterways. TVA should retire all coal plants by 2030, with the most protective standards for coal ash disposal in place.

2. Cease development of new dirty gas and phase out existing fossil fuel plants.

Fossil fuels make up nearly *half* of TVA’s generating mix and are responsible for a legacy of pollution and environmental destruction.⁶⁰ Though TVA is beginning to retire coal plants, the agency plans to build out new fossil gas facilities and costly gas pipelines⁶¹ that will lock the region into fossil fuel use for decades. TVA has not expressed plans to phase out its

gas plants, and instead envisions unproven and expensive carbon capture and storage as key to the agency’s future energy development.⁶²

The agency should not resort to dangerous and costly techno-fixes but instead employ the proven and affordable solar, wind and storage already on the market.⁶³

The board should immediately cease all new gas development and shift existing gas facilities to proven renewable technologies, including distributed energy.

3. Lift restrictions on renewables and distributed energy.

TVA’s local power companies, businesses and residential customers want to take advantage of renewable energy, like rooftop solar, and make homes and buildings more energy efficient, lowering costs and reducing carbon emissions. Yet TVA has pursued policies designed to *discourage* these initiatives to preserve its stranglehold on power generation.

The TVA board can advance energy justice, create a level playing field for competing energy technologies and allow customers to benefit from technologies that are changing the energy landscape across the country.



- a. *Make substantial investments in energy efficiency.* TVA once envisioned leading the Southeast in energy efficiency and in 2011 invested \$135 million in these programs to achieve 3.5% of sales in efficiency savings by 2015.⁶⁴ It has since slashed many of these programs, including rebates⁶⁵ and low-interest loans, dropping overall efficiency savings to 0.02% of retail sales.⁶⁶ Low-wealth households that already experience high energy burdens have been disproportionately affected.⁶⁷ Meanwhile other Southeast utilities have seen their efficiency savings rise. Duke Energy's savings have risen to 40 times higher than that of TVA.⁶⁸ TVA should reinvest in its energy efficiency programs and build out low-income weatherization programs,⁶⁹ which are central to reducing energy burdens and ensuring real energy savings.
- b. *Revise LPC power supply contracts to allow unlimited renewable energy.* TVA's new LPC power supply contracts severely limit LPC's ability to self-generate renewable energy to an arbitrary 5%.⁷⁰ TVA should lift all constraints on the ability of LPCs to obtain cheaper, renewable energy sources and work with LPCs to bolster distributed energy resources in the region.

- c. *Eliminate grid access charge designed to discourage rooftop solar.* In 2018 TVA imposed its first grid access charge for rooftop solar, substituting a portion of volumetric rates with fixed charges on the grounds that the prior rate structure was unfair to other customers.⁷¹ TVA should reverse its 2018 rate changes, which unfairly discourage businesses and homeowners from rooftop solar projects.
 - d. *Reinstate full retail net metering for solar systems.* Net energy metering allows solar customers to receive credits for the surplus energy they generate off their rooftops, and is a key driver for equitable solar development.⁷² TVA recently eliminated its Green Power Providers program⁷³ and has authorized LPCs to put solar customers in a different rate class to further discourage these projects.⁷⁴ TVA should reinstate a solar program that fairly recognizes the myriad benefits of rooftop solar projects and stops discouraging their development.
4. **Update Integrated Resource Plan to map out 100% renewable power and zero emissions within the next decade.**

Through its Integrated Resource Plan, TVA evaluates how it will meet future electricity demand over the next two decades. TVA's current plan review process is not expected to begin for another year, with finalization expected in 2023. Given the climate emergency and the harm to Tennessee Valley residents from TVA's high-carbon emissions, the utility must begin a comprehensive review of its energy generation *now* to align with Biden's goal of zero-carbon emission electricity by 2035.
 5. **Work with the Department of Energy to expand renewable and distributed energy.**

The Department of Energy and its national laboratories are investing in groundbreaking renewable and distributed energy systems, including microgrids and community-based energy, that would accelerate TVA's transition to renewable energy. The TVA board should leverage this opportunity to partner with DOE and its national laboratories to engineer a 100% renewable and distributed energy system that propels TVA toward bolder carbon emissions reduction targets.
 6. **Integrate risk management as central components of energy choice and climate risk analyses.**

Continued investments in fossil fuel infrastructure expose TVA and its customers to financial climate risk, including: financial losses from stranded carbon-emitting assets and cost-of-capital implications;⁷⁵ climate disaster-induced damages to centralized fossil generation plants, grids and transmission lines;⁷⁶ lost profit from lucrative opportunities for renewable energy development; and reputational damage that may drive

costly political reactions⁷⁷ and limit access to insurance.⁷⁸ The Securities Exchange Commission is proposing amendments to its rules that would require utilities to disclose such climate risk to utility investors.⁷⁹ The TVA board does not publicly employ a climate risk matrix to evaluate the agency's decisions and how it aligns with the agency's environmental mandates. The board should immediately adopt a legal risk matrix that factors associated climate risk into all decisions, especially the agency's energy planning.

7. Restructure TVA's decision-making process to facilitate meaningful public participation.

TVA is required to "encourage meaningful public participation in and awareness of its proposed actions and decisions,"⁸⁰ but it fails to do so. The agency has a statutory mandate for public hearings to address "the economic, environmental, social, or physical well-being of the people" it serves, but it has *never* held such hearings.⁸¹ It recently resumed public "listening sessions" during board meetings, but the public is excluded from committee meetings where most of the board's decisions are actually formulated. Another barrier to public participation and transparency is the board's delegation of authority to the CEO to retire the Kingston and Cumberland Fossil Plants,⁸² preventing public input and oversight of one of the most consequential decisions in TVA's energy future.

The Federal Energy Regulatory Commission's new Office of Public Participation should serve as a model for how TVA can facilitate public participation from a wide swath of affected customers.⁸³ To advance transparency the board should hold public evidentiary hearings on key issues and make itself directly accessible to the public through regular stakeholder meetings, such as open assemblies for citizen participation. To ensure the board hears directly from the public on key decisions, the board must make committee meetings public and rescind

delegation of the Kingston and Cumberland coal plant retirements to the CEO.

8. Strictly enforce TVA's conflict-of-interest policy.

The agency's conflict-of-interest policy prohibits all TVA employees, including the CEO, from holding any financial interest in "any entity engaged primarily in the wholesale or retail generation, transmission, or sale of electricity." The policy also applies to entities that "may reasonably be perceived as likely to be adversely affected by the success of TVA as a producer or transmitter of electric power."⁸⁴ It is the board's responsibility to take the CEO's financial relationships seriously, especially if they infringe on TVA's ability to provide reliable, clean, affordable electricity to all ratepayers and lower emissions to tackle the climate emergency. If the board finds that the CEO's actions violate the conflict-of-interest policy,⁸⁵ it must replace the CEO with an individual who will lead on TVA's mission rather than obstruct it.

CONCLUSION

Years ago former TVA Board Chair Dave Freeman understood that TVA could accelerate the country's clean and renewable energy buildout, but the agency now bears no resemblance to the leadership force he envisioned.⁸⁶

The climate emergency and the health and futures of communities in the Tennessee Valley demand that TVA revolutionize our broken, racist energy system.

Under the board's leadership, TVA can be the climate leader the country and Valley residents need for a renewable, equitable, democratic and accountable public power future.



Take Back TVA Rally,
photo by John Todd Waterman

ENDNOTES

- ¹ Christopher Van Atten, Amlan Saha, Luke Hellgren, and Ted Langlois, Benchmarking Air Emissions Of the 100 Largest Electric Power Producers in the United States, CERES, (July 2021), https://www.ceres.org/sites/default/files/reports/2020-07/Presentation_of_Results_2020.pdf.
- ² See The Dirty Truth About Utility Climate Pledges, SIERRA CLUB, (Jan. 2021), <https://coal.sierraclub.org/the-problem/dirty-truth-greenwashing-utilities>.
- ³ Tennessee Valley Authority, TVA at a Glance, <https://www.tva.com/about-tva/tva-at-a-glance>.
- ⁴ See About Us, Clean Up TVA, available at <https://cleantuptva.org/about-us/>.
- ⁵ Energy Security and Independence Act of 2022, H.R. 7439, 117th Cong. (2022).
- ⁶ U.S. Census Bureau, QuickFacts: Kentucky; Virginia; Alabama; Mississippi; Tennessee; Georgia, (accessed on April 11, 2022), available at <https://www.census.gov/quickfacts/fact/table/KY,VA,AL,MS,TN,GA/PST045221>.
- ⁷ Chandra Farley, John Howat, Jenifer Bosco, Nidhi Thakar, Jake Wise, and Jean Su, Advancing Equity in Utility Regulation, LAWRENCE BERKELEY NATIONAL LABORATORY, (November 2021), <https://escholarship.org/content/qt1mr715sx/qt1mr715sx.pdf>.
- ⁸ TVA profits since 2017 have steadily increased, from \$685 million (2017) to a record high of \$1.5 billion (2021). See Tennessee Valley Authority SEC Filings, Annual Report (10-K), available at <https://tva.q4ir.com/financial-information/sec-filings/default.aspx>. See also Dave Flessner, TVA profits jump to record high last year, CHATTANOOGA TIMES FREE PRESS, (November 15, 2019), <https://www.timesfreepress.com/news/business/aroundregion/story/2019/nov/15/tva-profits-jump-record-high-last-year/508313/>.
- ⁹ TVA 2019 Environmental Impact Statement, Final EIS at 5-27. https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/default-document-library/site-content/environment/environmental-stewardship/irp/2019-documents/tva-2019-integrated-resource-plan-volume-ii-final-eis.pdf?sfvrsn=99a30a7d_4.
- ¹⁰ See Greenhouse Gas Emissions from a Typical Passenger Vehicle, Environmental Protection Agency, <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#typical-passenger>.
- ¹¹ David Pomerantz and Matt Kasper, Many U.S. Electric Utilities Plan Slow Decarbonization Over Next Decade, Out of Sync with Biden Plan, ENERGY AND POLICY INSTITUTE, (Dec. 1, 2020), <https://www.energyandpolicy.org/utilities-carbon-goal-biden-climate-plan/>.
- ¹² See The Dirty Truth About Utility Climate Pledges, SIERRA CLUB, (Jan. 2021), <https://coal.sierraclub.org/the-problem/dirty-truth-greenwashing-utilities>.
- ¹³ Maggie Shober, TVA is Planning to Retire Coal Plants, What's Next?, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (July 14, 2021), <https://cleanenergy.org/blog/tva-is-planning-to-retire-coal-plants-whats-next/>.
- ¹⁴ Jean Haggerty, TVA to retire coal fleet by 2035, CEO says, with renewables, gas and nuclear on the table as replacements, UTILITY DIVE, (April 30, 2021), <https://www.utilitydive.com/news/tva-to-retire-coal-fleet-by-2035-ceo-says-with-renewables-gas-and-nuclear/599370/>.
- ¹⁵ Dan Calverley and Kevin Anderson, Phaseout Pathways for Fossil Fuel Production within Paris-compliant carbon budgets, International Institute for Sustainable Development, (March 11, 2022), https://www.research.manchester.ac.uk/portal/files/213256008/Tyndall_Production_Phaseout_Report_final_text_3_.pdf.
- ¹⁶ See The Dirty Truth About Utility Climate Pledges, SIERRA CLUB, (Jan. 2021), <https://coal.sierraclub.org/the-problem/dirty-truth-greenwashing-utilities>.

¹⁷ See TVA Replacing Natural Gas Units, Supports Solar Growth, TENNESSEE VALLEY AUTHORITY, (July 6, 2021), <https://www.tva.com/newsroom/press-releases/tva-replacing-natural-gas-units-supports-solar-growth>.

¹⁸ IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skeea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

¹⁹ Dave Flessner, Power struggle: TVA distributors want access to transmission lines to bring in outside electricity, CHATTANOOGA TIMES FREE PRESS, (Feb. 8, 2021), <https://www.timesfreepress.com/news/local/story/2021/feb/08/power-struggle-tvadistributors-want-access-tra/541236/>.

²⁰ Daniel Tait, TVA cuts “flexibility” promises to local power companies by 80%, enters into questionable contracts, ENERGY AND POLICY INSTITUTE, (May 29, 2020), <https://www.energyandpolicy.org/tva-cuts-flexibility-promises-to-local-power-companies-by-80-enters-into-questionable-contracts/>.

²¹ Samuel Hardiman, The bidding for Memphis’ electricity just ended, Here’s when we’ll know if MLGW will leave TVA, MEMPHIS COMMERCIAL APPEAL, (December 12, 2021), <https://www.commercialappeal.com/story/news/2021/12/13/will-mlgw-leave-tva-memphis-electricity-bidding-ends/6462848001/>.

²² Robert Walton, New TVA rate plan includes lower energy prices, grid access charge, UTILITY DIVE, (March 12, 2018), <https://www.utilitydive.com/news/new-tva-rate-plan-includes-lower-energy-prices-grid-access-charge/518932/>.

²³ Maggie Shober and Bryan Jacob, TVA Proposes to Axe Customer Solar Program, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (November 12, 2019), <https://cleanenergy.org/blog/tva-proposes-to-axe-customer-solar-program/>.

²⁴ Southern Alliance for Clean Energy, Energy Efficiency in the Southeast, Third Annual Report, Jan. 26, 2021, at 10, <https://cleanenergy.org/wp-content/uploads/22Energy-Efficiency-in-the-Southeast22-third-annual-report-2021.pdf>.

²⁵ Forest Bradley-Wright, TVA Lost Its Way on Energy Efficiency, Now It’s Dragging Southeast Down and Pushing Customer Bills Up, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (March 5, 2021), <https://cleanenergy.org/blog/tva-lost-its-way-on-energy-efficiency-now-its-dragging-region-down-and-pushing-customer-bills-up/>.

²⁶ See House Committee On Energy & Commerce Letter to Tennessee Valley Authority President and Chief Executive Officer, (January 13, 2022), available at <https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/TVA%20Letter%20re%20business%20practices%20and%20adherence%20to%20TVA%20Act.pdf>.

²⁷ Maggie Shober, TVA’s Response to Congressional Oversight Inquiry is Inadequate and Misleading, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (February 10, 2022), <https://cleanenergy.org/blog/tvas-response-to-congressional-oversight-inquiry-is-inadequate-and-misleading/>.

²⁸ Austyn Gaffney, ‘They Deserve to Be Heard’: Sick and Dying Coal Ash Cleanup Workers Fight For Their Lives, THE GUARDIAN, (Aug. 17, 2020), <https://www.theguardian.com/us-news/2020/aug/17/coal-spill-workers-sick-dying-tva>.

²⁹ Id.

³⁰ Toby Sells, Groups Criticize TVA for Lack of Transparency, Engagement, MEMPHIS FLYER, (November 12, 2021), <https://www.memphisflyer.com/groups-criticize-tva-for-lack-of-transparency-engagement>. See also Congressman Steve Cohen (TN-09), Congressman Cohen Questions TVA Commitment to Transparency in its Memphis Coal Ash Mitigation Plan, (November 22, 2021), <https://cohen.house.gov/media-center/press-releases/congressman-cohen-questions-tva-commitment-transparency-its-memphis-coal>.

³¹ Chandra Farley, John Howat, Jenifer Bosco, Nidhi Thakar, Jake Wise, and Jean Su, Advancing Equity in Utility Regulation, LAWRENCE BERKELEY NATIONAL LABORATORY, (November 2021), <https://escholarship.org/content/qt1mr715sx/qt1mr715sx.pdf>.

³² Id.

³³ Climate Change: Preparing for the Energy Transition, Hearing Before the Subcomm. on Energy and Mineral Resources, 116th Cong. (2019) (statement of Chandra Farley, Just Energy Director, Partnership for Southern Equity).

³⁴ U.S. Census Bureau, QuickFacts: Kentucky; Virginia; Alabama; Mississippi; Tennessee; Georgia, (accessed on April 11, 2022), available at <https://www.census.gov/quickfacts/fact/table/KY,VA,AL,MS,TN,GA/PST045221>.

³⁵ Highest Electricity Bills in the US: 15 Cities Where the Heat is On, COMMODITY.COM, (Oct. 27, 2021), <https://commodity.com/blog/cities-electric-bills/>.

³⁶ Id.

³⁷ See Department of Energy, “Benefits of Residential Solar Electricity”, <https://www.energy.gov/energysaver/benefits-residential-solar-electricity>; see also Vibrant Clean Energy, Why Local Solar for All Costs Less: A New Roadmap for the Lowest Cost Grid, (December 1, 2020), https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/Why-DEs_ES_Final.pdf.

³⁸ See S. David Freeman Memorial Petition for TVA to Immediately Address Electric Utility Shut-Offs and Convene Public Hearings on the COVID-19, Climate, and Socioeconomic and Racial Inequality Crises Facing the Communities TVA Serves, (Aug. 25, 2020), <https://www.biologicaldiversity.org/programs/energy-justice/pdfs/Aug-25-2020-TVA-Petition-For-Utility-Shut-Off-Moratorium-And-Other-Actions.pdf>.

³⁹ Id.

⁴⁰ 16 USC 831a(g)(1)(K)

⁴¹ Dorothy Slater, “This Federally Owned Public Utility Company is Run by a Former Fossil Fuel Executive Who Makes \$10 Million”, The New Republic, (March 16, 2022), https://newrepublic.com/article/165744/tennessee-valley-authority-lyash?utm_medium=Social&utm_campaign=EB_TNR&utm_source=Twitter#Echobox=1647400339-1.

⁴² Dorothy Slater, One Unexpected Way for Biden to Help the Climate and Rural America at the Same Time, THE NEW REPUBLIC, (December 29, 2021), <https://newrepublic.com/article/164722/biden-climate-tennessee-valley-authority>.

⁴³ Oliver Milman, Oil firms knew decades ago fossil fuels posed grave health risks, files reveal, The Guardian, (March 18, 2021), <https://www.theguardian.com/environment/2021/mar/18/oil-industry-fossil-fuels-air-pollution-documents>.

⁴⁴ Joanne Omang, TVA’s Electrifying Change, WASHINGTON POST, (June 1, 1980), <https://www.washingtonpost.com/archive/politics/1980/06/01/tvas-electrifying-change/10ce7dd7-6350-4015-be8a-01d44daaa53d/>.

⁴⁵ S. David Freeman, 94, Tireless Advocate for Clean Energy, Dies, NEW YORK TIMES, (May 19, 2020), <https://www.nytimes.com/2020/05/17/climate/s-david-freeman-dead.html>.

⁴⁶ Rachel Wagner, Brinley Hineman and Chris Gadd, Flooding in Middle Tennessee: What we know about where flooding occurred, rescue missions, KNOXVILLE NEWS SENTINEL, (August 21, 2021), <https://www.tennessean.com/story/weather/2021/08/21/middle-tennessee-flash-floods-deaths-triggered-by-heavy-rain/8227696002/>.

⁴⁷ Tennessee; Major Disaster and Related Determinations, Notice, 87 Fed. Reg. 12,447 (Mar. 4, 2022).

⁴⁸ See President Biden Executive Order on Tackling the Climate Crisis at Home and Abroad, Sections 201 and 205(b)(i) (“Biden Order”) (Jan. 27, 2021), <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>.

⁴⁹ See Federal Sustainability Plan – Catalyzing America’s Clean Energy Industries and Jobs (Dec. 2021), <https://www.sustainability.gov/pdfs/federal-sustainability-plan.pdf>.

- ⁵⁰ Chandra Farley, John Howat, Jenifer Bosco, Nidhi Thakar, Jake Wise, and Jean Su, Advancing Equity in Utility Regulation, LAWRENCE BERKELEY NATIONAL LABORATORY, (November 2021), <https://escholarship.org/content/qt1mr715sx/qt1mr715sx.pdf>.
- ⁵¹ Kelsey Tamborrino, Tennessee Valley Authority: Midwest storms worst in a decade, POLITICOPro, (December 13, 2021), <https://subscriber.politicopro.com/article/2021/12/tennesse-valley-authority-midwest-storms-worst-in-a-decade-3992919?source=email>.
- ⁵² See U.S. EPA, “Climate Impacts in the Southeast,” (available at: https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-southeast_.html.)
- ⁵³ Rachel Wagner, Brinley Hineman and Chris Gadd, Flooding in Middle Tennessee: What we know about where flooding occurred, rescue missions, KNOXVILLE NEWS SENTINEL, (August 21, 2021), <https://www.tennessean.com/story/weather/2021/08/21/middle-tennessee-flash-floods-deaths-triggered-by-heavy-rain/8227696002/>.
- ⁵⁴ Climate Justice in Rural Southeastern United States: A Review of Climate Change Impacts and Effects on Human Health. Gutierrez, K.S. and C.E. LePrevost, Climate Justice in Rural Southeastern United States: A Review of Climate Change Impacts and Effects on Human Health, Int J Environ Res Public Health, 13(2): 189, (Feb. 2016).
- ⁵⁵ See Environmental Policy, TENNESSEE VALLEY AUTHORITY, (available at <https://www.tva.com/environment/environmental-stewardship/environmental-policy/>.)
- ⁵⁶ 16 UCS Section 831a(g)(A) and (B)
- ⁵⁷ 16 UCS Sec 831(g)(1)(B)
- ⁵⁸ Kristi E. Swartz, TVA Shifts, Weighs Closing All Coal Plants, ENERGYWIRE, (April 29, 2021), <https://subscriber.politicopro.com/article/eenews/1063731279>.
- ⁵⁹ IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA.
- ⁶⁰ See Tennessee Valley Authority, “Our Power System”, <https://www.tva.com/energy/our-power-system>.
- ⁶¹ Estimated capital costs for proposed Cumberland pipeline about \$135 million, and for Kingston pipeline about \$520 million. This is based on reported mileage, pipeline diameter, and region for the pipeline build. See Cumberland Project – Project Overview, Kinder Morgan, at <https://www.kindermorgan.com/Operations/Projects/cumberland-project>. See also Ridgeline Expansion Opportunity, Enbridge, at <https://www.enbridge.com/projects-and-infrastructure/projects/ridgeline-expansion-project>.
- ⁶² Travis Loller, TVA CEO: US Needs Tech Advances to Reach Carbon Goals, AP NEWS, (April 29, 2021), <https://apnews.com/article/technology-environment-and-nature-business-359b81ae94b8411fe550f0c43f17e714>.
- ⁶³ See Dana Drugmadn and Carroll Muffett, Why Carbon Capture is Not a Climate Solution: Confronting the Myth of Carbon-Free Fossil Fuels, CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW, <https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>. See also Mark Jacobson et al., Zero air pollution and zero carbon from all energy at low cost and without blackouts in variable weather throughout the U.S. with 100% wind-water-solar and storage, 184 Renewable Energy 430-442 (2022), <https://web.stanford.edu/group/efmh/jacobson/Articles/I/21-USStates-PDFs/21-USStatesPaper.pdf>.
- ⁶⁴ See Tennessee Valley Authority 2011 Integrated Resource Plan, (March 2011), <https://www.nrc.gov/docs/ML1217/ML12171A189.pdf>.

- ⁶⁵ Brittany Crocker, TVA phases out rebates for home energy upgrades that do not build their electric load, KNOXVILLE NEWS SENTINEL, (June 8, 2018), <https://www.knoxnews.com/story/news/2018/06/08/tva-phases-out-rebates-home-energy-upgrades-do-not-build-their-electric-load/677359002/>.
- ⁶⁶ Forest Bradley-Wright, TVA Lost Its Way on Energy Efficiency, Now It's Dragging Southeast Down and Pushing Customer Bills Up, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (March 5, 2021), <https://cleanenergy.org/blog/tva-lost-its-way-on-energy-efficiency-now-its-dragging-region-down-and-pushing-customer-bills-up/>.
- ⁶⁷ Dave Flessner, TVA trails most utilities in promoting energy efficiency, CHATTANOOGA TIMES FREE PRESS, (Jan. 27, 2021), available at <https://www.timesfreepress.com/news/business/aroundregion/story/2021/jan/27/tva-energy-efficiency/540521/>.
- ⁶⁸ Bradley-Wright, TVA Lost Its Way, SOUTHERN ALLIANCE FOR CLEAN ENERGY, (March 5, 2021), <https://cleanenergy.org/blog/tva-lost-its-way-on-energy-efficiency-now-its-dragging-region-down-and-pushing-customer-bills-up/>.
- ⁶⁹ Dave Flessner, TVA trails most utilities in promoting energy efficiency, CHATTANOOGA TIMES FREE PRESS, (Jan. 27, 2021), available at <https://www.timesfreepress.com/news/business/aroundregion/story/2021/jan/27/tva-energy-efficiency/540521/>.
- ⁷⁰ William Driscoll, Lawsuit challenges TVA's anti-solar "never-ending contracts" with its utility customers, PV MAGAZINE, (Aug. 21, 2020), available at <https://pv-magazine-usa.com/2020/08/21/lawsuit-challenges-tvas-anti-solar-never-ending-contracts-with-its-utility-customers/> (explaining that the contracts severely constrain the amount of power the LPCS "can procure from non-TVA sources such as solar").
- ⁷¹ TVA 2018 Rate Change Final Env't Assessment at 6, available at https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/environmental-stewardship/nepa-environmental-reviews/tva-2018-rate-change-final-ea-may-4-2018.pdf?sfvrsn=e35817b_3
- ⁷² M. Muro & D. Saha, Rooftop Solar: Net Metering is a Net Benefit, BROOKINGS INSTITUTION (May 23, 2016), <https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/>.
- ⁷³ See Green Power Providers, <https://www.tva.com/energy/valley-renewable-energy/green-power-providers>.
- ⁷⁴ Tim Sylvia, TVA allows power companies to charge anti-solar fixed fees, PV MAGAZINE, (Feb. 3, 2021), available at <https://pv-magazine-usa.com/2021/02/03/tva-allows-power-companies-to-charge-anti-solar-fixed-fees/>.
- ⁷⁵ See, e.g., Direct Testimony from Tyler Fitch on behalf of Vote Solar: In the Matter of South Carolina Energy Freedom Act (House Bill 3659) Proceeding Related to S.C. Code Ann. Section 58-37-40 and Integrated Resources Plans for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, Docket Nos. 2019-224-E and 2019-225-E (S.C.P.S.C. Feb 5, 2021).
- ⁷⁶ See Ctr. for Biological Diversity, Comment Letter on Proposed SEC Climate Disclosure Requirements (June 11, 2021), <https://www.sec.gov/comments/climate-disclosure/cll12-8911759-244398.pdf>; Howard Crystal & Ilana Cohen, As climate risk disclosures loom, U.S. utilities must not evade accountability, Utility Dive (Aug. 2, 2021), <https://www.utility-dive.com/news/as-climate-risk-disclosures-loom-us-utilities-must-not-evade-accountabilit/603887/>.
- ⁷⁷ Matt Philips, Exxon's Board Defeat Signals the Rise of Social-Good Activists, N.Y. TIMES (June 9, 2021), <https://www.nytimes.com/2021/06/09/business/exxon-mobil-engine-no1-activist.html>.
- ⁷⁸ See, e.g., First Major U.S. Insurance Company to Stop Insuring and Investing in Coal, Insure our Future (July 1, 2019), <https://www.insureourfuture.us/updates/2019/7/1/first-major-us-insurance-company-to-stop-insuring-and-investing-in-coal>; Insure Our Future, Insuring Coal No More: An Insurance Scorecard on Coal and Climate Change (2017), <https://insureourfuture.co/wp-content/uploads/2017/11/UnfriendCoal-Insurance-Scorecard.pdf>.
- ⁷⁹ The Enhancement and Standardization of Climate-Related Disclosures for Investors, Proposed Rule, 87 Fed. Reg. 21,334 (Apr. 11, 2022).
- ⁸⁰ 18 CFR Sect 1318.500(a)

⁸¹ 16 USC 831a(g)(1)(K)

⁸² Abbie Bennett, TVA delegates authority to CEO to decide future of key coal plants, S&P GLOBAL, (November 11, 2021), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/tva-delegates-authority-to-ceo-to-decide-future-of-key-coal-plants-67593773>.

⁸³ Office of Public Participation, FEDERAL ENERGY REGULATORY COMMISSION, <https://www.ferc.gov/OPP>.

⁸⁴ See Tennessee Valley Authority Conflict of Interest Policy, https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/default-document-library/site-content/about-tva/our-leadership/board-of-directors/pdf/5b--board-conflict-of-interest-policy-11-6-14.pdf?sfvrsn=d5b76a32_2.

⁸⁵ 16 USCS Sec 831a(h)

⁸⁶ Joanne Omang, TVA's Electrifying Change, WASHINGTON POST, (June 1, 1980), <https://www.washingtonpost.com/archive/politics/1980/06/01/tvas-electrifying-change/10ce7dd7-6350-4015-be8a-01d44daaa53d/>.