Recommendations for Reducing Costs and Improving Reliability for Tennessee Valley Authority Customers

ACORE
AMERICAN COUNCIL ON RENEWABLE ENERGY

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Lead author

Jonathan Geldof
Senior Manager, Government Affairs,
Macro Grid Initiative, ACORE

Contributing authors

Simon Mahan
Executive Director, SREA

Andy Kowalczyk
Transmission Director, SREA

Whit Cox
Regulatory Director, SREA

Kevin O'Rourke
SVP, Development and Public Affairs, ACORE

Elise Caplan
VP, Regulatory Affairs, ACORE

William D. DeGrandis
Paul Hastings, LLP

Gregory D. Jones
Paul Hastings, LLP

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Executive Summary

This report recommends actions Congress can take to improve the Tennessee Valley Authority's (TVA) transmission planning with a focus on making TVA's electricity service more affordable, reliable, and resilient. TVA is currently undergoing its legally mandated integrated resource plan (IRP) process. However, unlike IRPs from traditional utilities no entity is empowered to meaningfully oversee TVA's efforts and ensure they are working in the best interests of ratepayers. While TVA's board of directors is entrusted with this responsibility, they are woefully ill-equipped to provide the kind of feedback which would serve as a check on TVA. Indeed, TVA's current plan contains no less than 30 possible portfolios — an indication that, if approved, the IRP would simply serve to justify whatever action TVA chooses to take.

Perhaps more importantly, TVA's IRP also fails to evaluate transmission expansion options. While TVA intends to undergo a separate transmission planning process, multi-value planning must occur simultaneously with generation planning. Siloing these crucial processes will leave benefits on the table for TVA ratepayers and undermine the reliability of the region's grid. This report provides a menu of options for Congress to ensure that TVA is accountable, reliable, and ready for the rising challenges of load growth and changes in the fuel mix. These options are particularly timely, as TVA's IRP portfolio may well take the agency to the limit of its current borrowing authority. If Congress must act to raise TVA's credit limit it must ensure that the money is well-spent — which means significant reforms to how TVA is managed.

Menu of Congressional Options

Recommendation Category	Details
Reforms to TVA's Board	• Congress could ensure that the TVA board has the resources to hire and maintain an independent staff tasked with protecting ratepayers and ensuring TVA operates according to best practices. • The board should receive regular reports from an independent consultant empowered to examine TVA's modeling assumptions and actual operations. • Congress could ensure TVA's board contains experts on utility regulation.
Reforms to TVA's IRP Process	• All future TVA IRPs should include transmission planning, not just generation planning. • The IRP process could include mandatory opportunities for stakeholder feedback and allow for iterative improvements to the portfolio of generation and transmission projects.
Require Expanded Interregional Transmission Planning	• Congress could require TVA to carefully consider the value of interregional transmission in future IRP processes.
Take Down the Fence	• Congress could revise the TVA Act and the wheeling sections of the Federal Power Act to remove the restriction on TVA from selling outside its service territory.
Open a "Gate"	• Congress could revise or clarify Section 211A of the Federal Power Act to make clear that TVA is not exempt from orders under this section and could limit the Federal Energy Regulatory Commission's discretion to take a 211A case.
Permitting Reform	• TVA could examine whether the NEPA process for generation projects could run concurrently with the cluster study process in their new interconnection procedures.
Bring TVA Under FERC Jurisdiction	• Congress could amend the TVA Act to explicitly bring TVA under the jurisdiction of the Federal Energy Regulatory Commission.
Reevaluating Privatization of TVA's Transmission System	• Congress could evaluate the regulatory framework and financial incentives that will govern a privately owned TVA transmission system before making any decision to privatize.
Congressional Research Service Report	• Congress could direct the Congressional Research Service to publish a report investigating how TVA can adopt best practices in resource planning, transmission, and interconnection.

Introduction

The Tennessee Valley Authority (TVA) is perhaps the most enduring symbol of 20th century New Deal electrification efforts. But it is now confronted by two coexisting 21st century realities: (1) accelerating projections[1] of load growth, driven in part by AI 'hyperscalers,' and; (2) the increasing investment in low-cost, utility-scale wind, solar, and battery storage resources. As TVA CEO Jeff Lyash noted in a recent interview: it took 90 years to build TVA's 34,000-megawatt (MW) generation fleet, and "we're going to have to build it again in the next twenty years."[2]

TVA must address this load growth while also executing on a pledge to reduce greenhouse gas (GHG) emissions by 80 percent by 2035 and reach net zero by 2050.[3] But TVA's recently announced 2025 Integrated Resource Plan (IRP) equivocates on that commitment. Most of the 30 scenarios contained in the IRP are projected to fall short of emission reductions targets.[4] In addition to missing TVA's own benchmarks, the IRP fails to offer a full plan for the future of the Tennessee Valley. It punts consideration of transmission planning — a key variable in both addressing load growth and bringing the lowest-cost, zero-carbon emitting resources online — to a separate 'Integrated Transmission Plan.' Perhaps as a result, the IRP offers little clarity on what resources TVA might procure, or when. And it offers limited options for the local power companies (LPCs) in TVA's footprint with long-term power contracts, who are currently limited to meeting only five percent of their load with their own generation, which could include renewables, and no flexibility for LPCs that have already maxed out the current 5% cap.[5]

Congress and TVA's staff and board of directors must carefully navigate the Tennessee Valley's energy future. Load growth, generation cost trends, and extreme weather are driving some of the most significant changes in the U.S. power sector

1 Grid Strategies, LLC, National Load Growth Report (2023), https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf.

2 The POWER Podcast, The POWER Podcast 135: TVA Head Wants Nothing to Do with Building One Reactor Unless He Can Build 20 (YouTube, May 7, 2024), at 4:40, https://www.youtube.com/watch?v=zt0h9e2X24k. 4:40.

3 Federal Utility Seeks Proposals for Big Carbon-Free Push, AP News (July 12, 2022), https://apnews.com/article/technology-science-tennessee-utilities-climate-and-environment-ee6940c1c9050c90cd7469cef3dc2ac0.

4 Sierra Club, TVA's Long-Term Energy Plan Falls Short of Federal Commitments, Relies Heavily on Fossil Fuels (Sept. 23, 2024), https://www.sierraclub.org/press-releases/2024/09/tva-s-long-term-energy-plan-falls-short-federal-commitments-relies-heavily.

5 American Public Power Association, TVA's Flexibility Program Enables Local Utilities to Embrace Distributed Energy (Aug. 19, 2020), https://www.publicpower.org/periodical/article/tvas-flexibility-program-enables-local-utilities-embrace-distributed-energy.

since the original challenges of electrification that inspired the TVA Act. TVA's planning process must evolve with these changing conditions to reflect the best practices other grid planners are using across the nation. Implementing these practices will result in significant benefits for TVA's ten million residential customers.

The following report outlines the context surrounding TVA's current generation and transmission planning process and makes recommendations for how Congress, the executive branch, and TVA itself can better confront its coming challenges.

Load Growth in TVA

TVA, like nearly every other power provider in the country, is confronting the dual specters of load growth and a need to integrate low-cost, renewable generation. These developments offer tremendous opportunities for TVA's ten million customers, and TVA is keenly aware. Unlike an investor-owned utility, TVA has an explicit responsibility towards economic development.[6] The Tennessee Valley region is already starting to see major returns from the Biden administration's industrial agenda. TVA operates at the heart of the so-called "Battery-Belt" where automotive and battery manufacturers have strategically located new industrial facilities. In Tennessee alone over $10 billion has been invested in these manufacturing sites — including at Blue Oval City, a $5.6 billion partnership between Ford and South Korean battery leader SK-On. [7] The Blue Oval City site will employ 6,000 people in the Stanton area.[8] TVA recently approved a 3.4-mile 500kV transmission line to facilitate the project.[9]

The AI-driven data center boom also offers opportunities and challenges to TVA. The xAI computing supercluster — potentially the "the largest data center on the planet" — is located in Memphis, Tennessee.[10] This supercluster was recently approved to receive 150 MW from TVA's system — a massive increase over its current 8 MW consumption.[11] This project is a win for economic growth in the Tennessee Valley. But it also showcases the dangers of moving too slowly to plan and build the new transmission necessary to enable new zero-emitting generation capacity to support that growth. To quickly meet its energy demands, xAI elected to run at least eighteen

6 Congressional Research Service, Privatizing the Tennessee Valley Authority: Options and Issues (July 29, 2013), at 2, https://crsreports.congress.gov/product/pdf/R/R43172.

7 Cushman & Wakefield Research, Battery Belt: Powering Southeast Real Estate with EV Demand (Dec. 14, 2023), https://cw-gbl-gws-prod.azureedge.net/-/media/cw/americas/united-states/insights/articles/atlanta/2023/battery-belt.pdf?rev=bf8b280c4e2d4a1e8840a01fc9e217be&hash=32AD8753FF5B08FD587616A629E1D58C.

8 Ibid.

9 Tennessee Valley Authority, Integrated Resource Plan Environmental Impact Statement (EIS) (Sept. 2024), at 2-15, https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/environmental-stewardship/integrated-resource-plan/2025/draft-2025-environmental-impact-statement.pdf?sfvrsn=d923248c_1.

10 Charlotte Trueman, xAI to double Colossus compute capacity, reveals cluster uses Nvidia Spectrum-X ethernet, Data Center Dynamics, Oct. 29, 2024, https://www.datacenterdynamics.com/en/news/xai-to-double-colossus-compute-capacity-reveals-cluster-uses-nvidia-spectrum-x-ethernet/.

11 Tom's Hardware, Elon Musk's Massive AI Data Center Gets Unlocked — xAI Gets Approved for 150MW of Power, Enabling All 100,000 GPUs to Run Concurrently (Nov. 13, 2014), https://www.tomshardware.com/tech-industry/artificial-intelligence/elon-musks-massive-ai-data-center-gets-unlocked-xai-gets-approved-for-150mw-of-power-enabling-all-100-000-gpus-to-run-concurrently.

on-site natural gas generators.[12] These facilities are located in the low-income Boxtown community where cancer rates are already four times higher than the national average and the quick-fix gas generators are operating without air pollution permits.[13] By streamlining its interconnection process and proactively planning transmission TVA can rapidly connect new large loads like xAI to low-cost, clean power, saving their customers on their power bills.

12 Southern Environmental Law Center, Elon Musk's xAI Facility is Polluting South Memphis (Nov. 15, 2024), https://www.southernenvironment.org/news/elon-musks-xai-facility-is-polluting-south-memphis/.

13 Ibid.

Background on TVA's Transmission Planning Process

Historically, TVA's transmission planning process has lacked transparency, with no meaningful stakeholder participation. Against that backdrop, TVA's recent announcement that they will engage in an Integrated Transmission Planning (ITP) process is an encouraging first step.[14] But, as discussed herein, there are notable gaps that must be resolved to secure the full benefits of multi-value transmission planning.

TVA participates in the Southeast Regional Transmission Planning process (SERTP) as a part of their "voluntary" compliance with FERC Order No. 1000,[15] the FERC rule that set electric transmission planning and cost allocation requirements for public utility transmission providers.[16] But SERTP is dependent on inputs from its sponsors, which include TVA as well as the utilities and co-ops within its territory. SERTP's progress towards implementing FERC Order No. 1920 would be undermined if TVA only submits ad hoc, reactive transmission plans. TVA risks holding back the entire region if it interprets its non-FERC jurisdictional status as license to ignore the stresses on the grid which led to Order No. 1920. According to the U.S. Department of Energy's (DOE) National Transmission Needs Study, "The Delta, Southeast, and Florida regions installed the fewest circuit-miles, relative to regional load, throughout the decade."[17] TVA should embrace a leadership role in reversing this troubling trend.

The southeast's neighbors, PJM, MISO, and SPP, have not historically participated in SERTP's Regional Planning Stakeholder Groups (RPSG). Unsurprisingly, this lack of coordination has not resulted in any interregional links between SERTP and its neighboring entities.[18] Significant real-world impacts from this lack of coordinated

14 Southern Alliance for Clean Energy, Solar in the Southeast: Seventh Edition (July 2024), at 18, https://www.cleanenergy.org/wp-content/uploads/Solar-in-the-Southeast-Seventh-Edition-Report-July-2024.pdf.

15 Tennessee Valley Authority, Southeastern Regional Transmission Planning Group TVA Membership Background and History - Note to OASIS (Aug. 10, 2015), https://www.oasis.oati.com/TVA/TVAdocs/Note_for_OASIS_on_SERTP_Aug10-15.pdf.

16 *Transmission Plan. and Cost Allocation by Transmission Owning and Operating Pub. Utils.,* Order No. 1000, 136 FERC ¶ 61,051 (2011).

17 U.S. Department of Energy, National Transmission Needs Study (Oct. 2023), https://www.energy.gov/sites/default/files/2023-12/National%20Transmission%20Needs%20Study%20-%20Final_2023.12.1.pdf.

18 Southern Renewable Energy Association, Comments on DOE National Transmission Needs Study (Spring 2023), https://www.energy.gov/sites/default/files/2023-07/072723_Needs-Study_Public-Draft-Comments-Compiled_Spring-2023.pdf.

planning arose during Winter Storm Elliott when studies revealed that modest investment in interregional transmission would have yielded tens of millions in benefits and alleviated rolling power outages.[19] As a part of a broader reemphasis on transmission planning, TVA should support efforts within SERTP to expand interregional planning with neighboring RTOs.

TVA has largely implemented FERC Order No. 2023, FERC's final rule on "Improvements to Generator Interconnection Procedures and Agreements," despite a lack of statutory obligation to do so.[20] There are certainly elements of TVA's interconnection policy which can be improved. Developers are limited to cash and letters of credit for deposits and cannot use surety bonds.[21] In Order No. 2023, FERC explicitly recognized that allowing surety bonds was necessary to ensure generators did not face "unjust and unreasonable or unduly discriminatory hurdles."[22] TVA has not implemented FERC's accountability structure wherein a transmission operator is penalized when study timelines drift past mandatory deadlines. And it has adopted more onerous site control requirements than ordered by FERC. These problems are significant from a developer perspective and should be resolved — but TVA deserves credit for implementing the bulk of Order No. 2023 even though they had no obligation to do so. TVA is currently on track to complete its transition process in September 2025 — a notably faster pace than some of its RTO peers.[23] But TVA's own documentation suggests their reforms will simply reduce a 6-8 year interconnection process to a 6-7 year process.[24] TVA should go beyond the mandates of FERC Order No. 2023 and look for innovative solutions to quickly bring on new, clean generation — including adopting an interconnection entry fee approach and taking advantage of surplus interconnection possibilities in its existing generation fleet.[25] Ultimately, as in the rest of the country, the most important accelerant for interconnection will be the proactive expansion of transmission infrastructure.

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19 American Council on Renewable Energy, The Value of Transmission During Winter Storm Elliott (Feb. 2023), https://acore.org/wp-content/uploads/2023/02/The-Value-of-Transmission-During-Winter-Storm-Elliott-ACORE.pdf.

20 *Improvements to Generator Interconnection Procedures and Agreements*, Order No. 2023, 184 FERC ¶ 61,054 (2023).

21 Tennessee Valley Authority, Interconnection Customer Meeting (Oct. 2024), https://www.oasis.oati.com/woa/docs/TVA/TVAdocs/IC_meeting_102424_-_LGIP_Nov._2024_Edition_focus_-_final.pdf.

22 *Improvements to Generator Interconnection Procedures and Agreements*, Order No. 2023, 184 FERC ¶ 61,054 (2023).

23 TVA, supra note 22

24 Tennessee Valley Authority, Order No. 2023 Implementation Update (Mar. 26, 2024), https://www.oasis.oati.com/woa/docs/TVA/TVAdocs/IC_Meeting_-_Order_2023_Update_032624_-_final.pdf.

25 Grid Strategies & Brattle Group, Unlocking America's Energy: How to Efficiently Connect New Generation to the Grid (Aug. 2024), https://gridstrategiesllc.com/wp-content/uploads/Exec-Sum-and-Report-Unlocking-Americas-Energy-How-to-Efficiently-Connect-New-Generation-to-the-Grid.pdf.

Legal Background

TVA is the only utility in the continental United States not required to provide service across its transmission system to potential transmission service customers outside of its service territory. TVA serves approximately 150 wholesale customers, including electric cooperatives and public power utilities. Such service is provided pursuant to power purchase agreements (PPA), which allow customers to terminate such service after providing written notice some years prior to the end of the term. In practice, this means TVA does not provide access to transmission service separate from power supply; it only offers bundled power supply and transmission service. If a customer seeks to terminate its PPA, it does not have the ability to secure transmission service from TVA to purchase power from alternative suppliers, including renewable energy suppliers, from resources within and outside of TVA's service territory.

TVA is not a public utility under the Federal Power Act (FPA) because it is an instrumentality of the United States and is not subject to the open access transmission tariff requirements applicable to public utilities under sections 205 and 206 of the FPA.[26] However, TVA is expressly classified as an "electric utility" under the FPA, which includes "a person or Federal or State agency … that sells electric energy."[27] While electric utilities that are non-public utilities are not subject to the open access transmission tariff requirements of sections 205 and 206 of the FPA, they can be subject to the interconnection and transmission service requirements of sections 210, 211, 211A, and 212 of the FPA.[28] While electric utilities such as electric cooperatives and public power utilities have been required to provide open access transmission service — to the extent they own or operate facilities used for the transmission of electric energy in interstate commerce — TVA is immune from providing unbundled transmission services. Indeed, in reviewing a request for

26 *See* 16 U.S.C. §§ 824(f), 824d, 824e. The FPA grants authority to the Federal Energy Regulatory Commission (FERC) to regulate "public utilities," a broad term which generally includes those entities engaged in the "transmission of electric energy in interstate commerce" or "the sale of such energy at wholesale in interstate commerce." 16 U.S.C. § 824(a). When drafting the FPA, Congress excluded certain entities from federal regulation, including publicly-owned electric utilities, such as electric cooperatives, municipally owned utilities, and other instrumentalities of the state, which includes TVA.

27 *See* 16 U.S.C. § 796(22)(A) and (B) ("The term "electric utility" includes the Tennessee Valley Authority and each Federal power marketing administration").

28 *See* 16 U.S.C. §§ 824i, 824j, 824j-1, and 824k.

transmission services from TVA as part of a case before FERC several years ago, the Chairman of FERC stated that Congressional action would be needed and he urged Congress to enable utilities in the region to access suppliers other than TVA, while allowing TVA to sell outside its service territory.[29]

The TVA Act

Congress created TVA as a corporate agency and instrumentality of the United States when it enacted the Tennessee Valley Authority Act of 1933 ("TVA Act").[30] Congress invested TVA with broad authority regarding "agricultural and industrial development, and to improve navigation in the Tennessee River and to control the destructive flood waters in the Tennessee River and Mississippi River Basins . . . ."[31] Besides those activities, TVA is also authorized to produce, distribute, and sell electric power.[32] The TVA Act enables TVA to sell surplus power not used in its operations[33] and to construct, purchase, and operate transmission lines and to interconnect with other systems.[34]

Amendments to the TVA Act in 1959 authorized self-financing of TVA's projects through revenue bonds, and Congress included a geographic limitation upon its operations, precluding TVA from being a "source of power supply outside the area for which [TVA] or its distributors were the primary source of power supply on July 1, 1957."[35] This limitation is referred to as the "Fence." Effectively, the Fence, combined with the amendments to the FPA that are described below, bars third-party access to the TVA transmission system. Of note, nothing in the amended TVA Act prevented TVA from importing power to directly serve any of its cooperative or public power customers. Instead, the Fence prevented TVA from selling power outside its prescribed service territory, subject to certain exceptions.

FPA Amendments

Through the Energy Policy Act of 1992, Congress amended section 211 of the FPA to enable FERC to require non-public utilities that own or operate facilities used for

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29 *See Athens Utilit. Board*, 177 FERC ¶ 61,021 (2021) (Glick, concurring, at P 2) ("In my view, the Fence is a vestige of a bygone era and the region, and particularly its ratepayers, would be far better served by having access to alternative power supplies on a competitive and non-discriminatory basis. The benefits of competition and consumer choice far outweigh whatever benefits the region once derived from the current model. Accordingly, I urge Congress to consider enacting legislation to eliminate the Fence and enable utilities in the region to access alternative sources of supply and likewise to allow TVA to make wholesale sales to new customers.").

30 16 U.S.C. § 831 *et. seq.*

31 16 U.S.C. § 831.

32 16 U.S.C. § 831d(1).

33 16 U.S.C. § 831i.

34 16 U.S.C. § 831k.

35 16 U.S.C. § 831n-4(a).

the transmission of electric energy in interstate commerce to provide transmission service, after satisfying a few statutory requirements. Under section 212(f)[36] of the amended FPA, Congress prohibited FERC from ordering "wheeling" that would allow TVA power to be sold outside the Fence established by section 15d(a) of the TVA Act.[37] Under Section 212(j),[38] Congress also prohibited FERC from ordering TVA to wheel power if such power would be consumed within the Fence. Section 212(j) is also referred to as the Anti-Cherrypicking Amendment.

About 13 years later, as part of the Energy Policy Act of 2005, Congress enacted comprehensive energy legislation, including amending FPA section 211 to allow FERC to require electric utilities to provide transmission services, but under very different requirements than section 211. This addition, Section 211A, was free standing, and not included under section 211.

Of interest, while Congress had expressly exempted TVA from section 211 wheeling orders, it did not do so when it enacted section 211A thirteen years later. Specifically, Congress added section 824j to prevent TVA from being ordered to wheel, but it did not add a similar provision when it enacted section 211A. Congress could have easily revised section 212j to restrict Commission orders "issued under section 824j [i.e., FPA section 211] or section 824j-1 [i.e., FPA section 211A]." But Congress did not include such bolded language when it added section 211A. In construing the FPA, the D.C. Circuit has stated that "[w]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion."[39]

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36 16 U.S.C. § 824k(f).

37 "Wheeling" refers to the movement of electric energy across a transmission provider's system for use in its or another transmission system.

38 16 U.S.C. § 824k(j).

39 *See W. Minn. Mun. Power Agency v. FERC*, 806 F.3d 588, 594 (D.C. Cir. 2015) (quotations omitted).

As noted above, in *Athens Utilities Board v. Tennessee Valley Authority, supra*, FERC declined to exercise its authority to review the evidence that four TVA customers presented in a section 211A complaint action seeking an order requiring TVA to wheel power from non-TVA sources. At least two Commissioners — despite evidence above that Congress did not exempt TVA from section 211A orders — wrongly concluded that Congress did so. The then-Chairman of FERC urged Congress to take down the Fence completely, so that TVA could sell power outside its original service territory, which would also enable customers to secure transmission services from TVA to import power from non-TVA sources.[40] Commissioner Clements in a lengthy and reasoned dissent, agreed with the Petitioners that Congress did not exempt TVA from section 211A orders.[41]

The *Athens Utilities Board* case highlights that the legislative remedies noted herein are not new proposals requiring substantial legislative amendments to implement. Instead, they are clarifications to re-instate Congress' intent when it amended the FPA to include section 211A.

40 Ibid., 28

41 *See Athens Utils. Board, 177 FERC ¶ 61,021 (2021) (Clements, dissenting, at P 42)*

TVA Must Employ Multi-Value Transmission Planning

Transmission expansion is an issue of national urgency. With rising electricity demand, dozens of reports from government and non-government organizations highlighting the benefits of improved transmission planning, and over 2.6 terawatts of new generation languishing in interconnection queues, grid operators must rapidly act to expand the nation's electricity infrastructure.[42] Historically, transmission development in the TVA region has been based almost solely on reliability needs. That calculus is no longer sufficient to deliver the lowest cost resources to consumers.

FERC acknowledged this need in issuing Order No. 1920 in May of 2024. Commissioners Clements and Phillips, in a joint concurrence, wrote "We have a choice: We can take consequential action to build the infrastructure needed to ensure reliability and affordability. Or we can pursue half-measures, which may help on the margins, but will ultimately leave us lacking the infrastructure we need to keep the lights on at a price that customers can afford."[43] While TVA is not subject to FERC's transmission planning requirements, they can follow their own recent precedent of executing on FERC-led reforms, as they did with Order No. 2023, by implementing well-established best practices in regional transmission planning. Perhaps equally important — considering the increasing frequency and severity of extreme weather events — TVA should also adopt reforms which will enable effective interregional planning.

TVA's current bifurcated planning process, with generation considered in the IRP process and transmission in the ITP, will undoubtedly lead to suboptimal results for consumers. Formulating transmission plans first would allow TVA to offer transparency to generation developers around current utilization and congestion allowing them

42 Lawrence Berkeley National Laboratory, *Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection*, https://eta.lbl.gov (last visited Nov. 20, 2024); DOE Transmission Needs study, supra note 17.

43 Chairman Phillips & Commissioner Clements, Joint Concurrence on FERC Order No. 1920, Docket No. RM21-17-000 (May 14, 2024), https://www.ferc.gov/news-events/news/chairman-phillips-and-commissioner-clements-joint-concurrence-ferc-order-no-1920.

to offer better-informed proposals which can lower overall system cost.[44] Proactive transmission planning offers particular benefits for TVA. TVA intends to retire its remaining four coal-fired power plants by 2035.[45] These generation resources currently provide for nearly 7,000 MW of capacity — roughly 20% of TVA's recent 2024 winter peak.[46] Making the most cost-effective replacement decisions requires planning transmission investments now to enable the combination of lowest cost replacement generators.[47]

As outlined in a recent report on TVA's current planning processes, multi-value planning can unlock clear benefits for reliability and for ratepayers.[48] By proactively building high-capacity upgrades to the existing grid, TVA can make it easier to execute any of the generation portfolio options contained in the IRP. TVA's IRP reads, "The integrated transmission plan will consider the strategic direction from the IRP, along with the locational aspects of connecting load and generation, to enable the timely and reliable evolution of the power system."[49] However, the TVA's Board cannot make informed decisions about the efficacy of the various scenarios in the IRP without the benefit of the ITP. Transmission modeling informs which generation resources are most cost-effective. Utilities across the country have used this form of truly integrated planning to reduce costs in markets ranging from MISO and CAISO to the non-RTO west.[50]

Multi-Value Planning for TVA

Under TVA's current process, a separate ITP will be developed after their IRP. As commenters have noted, bifurcating these efforts undermines the concept of "integrated" planning.[51] TVA has made laudable steps in transmission planning — including recently approving an $18 billion suite of generation and transmission projects and working with the DOE's Grid Deployment Office to secure $250 million in funding for transmission hardening following Hurricane Helene.[52] But as TVA's inspector general noted, this tranche of projects is intended only to meet short-term needs through 2028. Four years is little time in the context of these large

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44 Grid Strategies for the Sierra Club, Incorporating Transmission into TVA's IRP for Truly "Integrated" Resource Planning (Oct. 2024), https://www.sierraclub.org/sites/default/files/2024-10/10-28-24-grid-strategies-tva-report.pdf.

45 Tennessee Valley Authority, *Coal,* https://www.tva.com/energy/our-power-system/coal (last visited Dec. 5, 2024).

46 Tennessee Valley Authority, TVA System Breaks Records During Bitter Cold (Jan. 22, 2024), https://www.tva.com/newsroom/press-releases/tva-system-breaks-records-during-bitter-cold.

47 Grid Strategies, supra note 45, at 6.

48 Id., at 4.

49 TVA Integrated Resource Plan, supra note 22, at 1-7.

50 Grid Strategies, supra note 45, at 6.

51 Southern Alliance for Clean Energy, TVA Draft IRP – Exceedingly Broad Planning is Meaningless (Sept. 23, 2024), https://www.cleanenergy.org/blog/tva-draft-irp-exceedingly-broad-planning-is-meaningless/.

52 U.S. Department of Energy, TVA GRIP 2 Fact Sheet (Oct. 2024), https://www.energy.gov/sites/default/files/2024-10/TVA_GRIP2_Fact_Sheet.pdf.; Office of the Inspector General, Tennessee Valley Authority, Semi-Annual Report: October 1, 2023 – March 31, 2024 (May 2024), https://www.oversight.gov/sites/default/files/documents/reports/2024-05/semi76.pdf.

infrastructure projects. TVA must modify its ongoing ITP process to include true multi-value planning.

TVA's 2025 IRP, for example, offers scenarios of growth in solar from anywhere between 3,000 MW and 21,000 MW by 2035.[53] As of 2023, TVA had only 1,098 MW of solar on its system.[54] Under FERC's Order No. 1920 framework, this projected growth of between 3x and 21x in solar development would drive transmission planning. The lowest-cost solar resources are likely geographically concentrated in certain parts of TVA's territory in areas. And there is no certainty those resources are near existing transmission infrastructure. A multi-value plan would model the lowest cost areas for all generation development and begin transmission planning now, anticipating that new lines can take seven years or longer to construct whereas commercial solar projects can be developed in as little as eighteen months.[55]

As previously noted, TVA has the option to voluntarily incorporate planning methodologies from FERC Order No. 1920. At a minimum, TVA's integrated transmission plan should adopt the 20-year outlook and the development of scenarios that incorporate a list of specific factors, as mandated by FERC. Not only is this a best-practice consistent with the goals of proactive planning but it will make it easier for TVA to coordinate with its FERC-regulated neighbors who must adopt Order No. 1920 planning procedures. TVA should also look to use the seven benefits outlined in Order No. 1920 in its ITP when evaluating transmission facilities. And it should maximize the use of grid-enhancing technologies (GETs) in its planning process, such as utilizing advanced power flow controls and dynamic line ratings. Lastly, TVA has taken a leadership role in implementing high-performance conductors (HPCs) and should continue to look for opportunities to further deploy that technology.[56]

To ensure transparency and restore public trust, TVA should also embrace FERC Order No. 1920's stakeholder process. Under Order No. 1920, RTOs must allow stakeholders to review their modeling assumptions, contribute to the identification of needs, and review potential transmission solutions.[57] In a recent panel, TVA staff represented that they would adopt Order No. 1920. Executing on that commitment will require rapidly instituting this stakeholder process.

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53 TVA Integrated Resource Plan, supra note 22, at Appendix D.3.

54 Southern Alliance for Clean Energy, Solar in the Southeast: Seventh Edition (July 2024), https://www.cleanenergy.org/wp-content/uploads/Solar-in-the-Southeast-Seventh-Edition-Report-July-2024.pdf.

55 Solar Energy Industries Association, Solar Market Insight Report Q2 2024, https://seia.org/research-resources/solar-market-insight-report-q2-2024 (June 2024).

56 Tennessee Valley Authority, New Life for Transmission Lines, https://www.tva.com/newsroom/articles/new-life-for-transmission-lines (last visited Dec. 5, 2024).

57 Federal Energy Regulatory Commission, Fact Sheet: Building for the Future Through Electric Regional Transmission Planning and Cost Allocation (May 13, 2024), https://www.ferc.gov/news-events/news/fact-sheet-building-future-through-electric-regional-transmission-planning-and.

The Need for Interregional Transmission

The experience of Winter Storm Elliott concisely demonstrates the crucial role of interregional transmission in a crisis scenario. In the early morning of December 23, TVA had lost over 5,000 MW of generation and had declared EEA3 meaning load-shed was imminent. Grid operators were briefly able to secure emergency power from neighbors before PJM was forced to reduce exports due to transmission operating limits.[58] TVA was forced to implement rolling blackouts for the first time in its 90-year history.[59] Greater interregional transmission capability would have alleviated a significant portion of the damage. One additional gigawatt of transmission from ERCOT to TVA alone would have saved $95 million. [60] A gigawatt of transfer capacity between TVA and MISO-North or MISO-South would have saved $79 million and $75 million.[61]

TVA should proactively explore where additional interregional transmission, both along its seams and across regions, can benefit its system. Last year, the SERTP Economic Planning Study suggested that additional transmission between western Tennessee and Arkansas (MISO-South) could carry an additional 2.9 GW of power for as little as $21 million.[62] It is encouraging that TVA and MISO are seeking greater coordination and planning in crisis situations – including recently reaching an agreement to allow TVA to sell Emergency Energy to Ameren and Entergy.[63]

TVA's 2025 IRP includes the possibility of PPAs with MISO-based wind resources as early as 2029.[64] In particular, the IRP's suggestion of building an HVDC line to bring in wind energy should be explored. As noted in the IRP, such a system would offer a higher capacity factor than other options (TVA assumes 55% capacity for HVDC, versus 40% for importing from MISO on the existing system).[65]

TVA is a winter-peaking system, yet the IRP assumes a maximum of 4 GW of new wind generation across all scenarios. It should expand the role of wind in its resource mix as wind, with a weatherization package, unlike solar and gas, is more reliable in the cold

58 FERC, NERC & Regional Entity Staff, Report: Inquiry into Bulk-Power System Operations During December 2022 Winter Storm Elliott (Nov. 7, 2023), https://www.ferc.gov/media/winter-storm-elliott-report-inquiry-bulk-power-system-operations-during-december-2022.

59 Tennessee Valley Authority, TVA Accepts Responsibility, Starts Full Review (Dec. 28, 2022), https://www.tva.com/newsroom/press-releases/tva-accepts-responsibility-starts-full-review.

60 ACORE, supra note 20 at 2.

61 Ibid.

62 Southeastern Regional Transmission Planning, *2023 Economic Planning Studies Final Results* (Nov. 27, 2023), https://www.southeasternrtp.com/docs/general/2023/2023_SERTP_Final_Economic_Study_Results.pdf.

63 Utility Dive, MISO, TVA to Sell 'Emergency Energy' Under Proposed Agreement (Oct. 25, 2024), https://www.utilitydive.com/news/miso-tva-ferc-emergency-energy-elliott-uri/731016/.

64 TVA IRP, supra note 9, at 3-16.

65 Ibid. at E-16.

months when TVA has its greatest need.[66] The recent experience during Winter Storm Elliott demonstrates the value of wind power during cold snaps. In December 2022, at the same moment Tennessee Valley homes were experiencing rolling blackouts, 3 GW of wind in SPP were being curtailed.[67] An HVDC system to bring these resources to TVA ratepayers makes good sense. But planning must start now. There are a limited number of HVDC manufacturers, and their order books are filled through the early 2030s due to large, coordinated procurements by European governments.[68]

TVA should nonetheless proactively examine options for new HVDC lines across its neighbors. The benefits of interregional transmission are well-documented. DOE's National Transmission Needs Study conclusively demonstrated that all regions of the US – but particularly the Southeast, where transmission buildout has lagged — will need far more interregional transfer capability to ensure system stability and accommodate growth in clean energy.[69] NERC has similarly concluded that "[a] s a result of the changing resource mix and extreme weather, interregional energy transfers play an increasingly pivotal role."[70] HVDC is a crucial technology for unlocking interregional transmission. TVA should use its unique insulation from the quarterly pressure of investors to make innovative investments in the technology — much as it has with the Clinch River SMR project.[71]

66 Ibid.

67 RMI, Wasted Wind and Tenable Transmission During Winter Storm Elliott (Feb. 26, 2023), https://rmi.org/wasted-wind-and-tenable-transmission-during-winter-storm-elliott/.

68 Brattle Group, The Operational and Market Benefits of HVDC to System Operators (Sept. 2023), at 166, https://www.brattle.com/wp-content/uploads/2023/09/The-Operational-and-Market-Benefits-of-HVDC-to-System-Operators-Full-Report.pdf.

69 DOE Needs Study, supra note 17, at 22.

70 North American Electric Reliability Corporation, Interregional Transfer Capability Study (ITCS) (Nov. 2024), https://www.nerc.com/pa/RAPA/Documents/ITCS_Part2_Part3.pdf.

71 Nuclear Newswire, Granholm Visits Clinch River Site to Show Support for SMRs (Dec. 7, 2023), https://www.ans.org/news/article-5596/granholm-visits-clinch-river-site-to-show-support-for-smrs/.

Recommendations for Congress

Reforms to TVA's Board

The conditions for membership on TVA's board of directors, as laid out in the TVA Act, are minimal.[72] Board members must be citizens, must not be TVA employees, and must have management expertise "relative to a large for-profit or nonprofit corporate, government, or academic structure." These guidelines were last updated in 2004 to include requirements that at least seven of the nine board members live in TVA's territory.[73] TVA's board has no independent staff — they look to TVA itself for context on the many important governance decisions they make.

Ironically, even though TVA is a federal entity these conditions make it less accountable to ratepayers than many traditional investor-owned utilities (IOUs). IOUs must justify their decisions to state regulators who often have decades of experience in the industry. Even when utility commissioners lack expertise, they have the guidance of career staff who are well-versed in the issues. TVA board members, by contrast, are part-time and have little to no ability to independently assess the decisions of TVA staff. It is not surprising that the board too-often operates as a rubber stamp. TVA's current IRP process neatly demonstrates why this is a problem. Their "plan" includes 30 potential paths forward based on six scenarios and five strategies.[74] If approved, the IRP will serve less as a roadmap to be followed than as a justification for whatever steps TVA deems necessary going forward. This approach offers no certainty to investors, clarity to policymakers, or accountability to ratepayers.

Congress should ensure TVA's board has the resources necessary to hire and maintain an independent staff tasked with protecting ratepayers and ensuring TVA operates

72 Tennessee Valley Authority, Bylaws of the Tennessee Valley Authority, https://www.tva.com/about-tva/our-leadership/board-of-directors/bylaws-of-the-tennessee-valley-authority (last visited Dec. 5, 2024).

73 Chattanoogan.com, TVA Board Expanded to 9 Members (Nov. 20, 2004), https://www.chattanoogan.com/2004/11/20/58934/TVA-Board-Expanded-To-9-Members.aspx.

74 SACE, supra at 52.

according to best practices. At a minimum, the board should receive regular reports from an independent consultant empowered to examine TVA's modeling assumptions and actual operations. TVA's governance would clearly benefit from having a more empowered, engaged board of directors. TVA has an admirable record of reliability and low prices for ratepayers. But those successes should not distract from the governance issues that prevent informed oversight consistent with, and required by, any typical corporate board of directors.

Reform TVA's IRP Process to Include the Evaluation of Transmission and Multiple Benefits

While TVA is required by Congress to "conduct a least-cost planning program" in its IRP process,[75] all parties would benefit from more clarity into what that means. The TVA Act states that "In conducting a least-cost planning program…, the [TVA] shall employ and implement 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 [TVA] at the lowest system cost."[76]

All future TVA IRPs must include transmission, not just generation. The TVA Act should be revised to make this explicit. And the IRP process should include formal opportunities for stakeholder feedback and allow for iterative improvements to the portfolio of generation and transmission projects on offer. The IRP should also be required to weigh the benefits of expanded ties to other grid operators.[77] There is already momentum in Congress for this kind of change. The bipartisan TVA Increase Rate of Participation Act (TVA IRP Act), introduced by Tennessee Reps. Steve Cohen (D-Memphis) and Tim Burchett (R-Knoxville) would require TVA to include planned transmission investments in its IRP, disclosure around planning and modeling assumptions, and it would create a formal stakeholder process for the IRP.[78] Following the March 2024 introduction of the TVA IRP Act, TVA responded by delaying its IRP process to expand on its non-binding stakeholder process.[79] The next Congress should consider this legislation or an expanded version, with some of the other reforms enumerated in this report.

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75 16 U.S. Code § 831m–1.

76 *Id.* § 831m–1(b)(1).

77 Brattle Group, supra at 4.

78 Knoxville News Sentinel, Tim Burchett, Steve Cohen Introduce TVA Transparency Bill (Mar. 8, 2024), https://www.knoxnews.com/story/news/local/2024/03/08/tim-burchett-steve-cohen-introduce-tva-transparency-bill/72884224007/.

79 Knoxville News Sentinel, TVA Delays Comprehensive Report; Burchett Takes a Victory Lap (Mar. 29, 2024), https://www.knoxnews.com/story/news/politics/2024/03/29/tva-delays-comprehensive-report-burchett-takes-a-victory-lap/73133217007/.

Second, Congress should take steps to clarify the definition of "system cost" in the TVA Act and thus clarify what costs should be considered in "conducting a least-cost planning program…at the lowest system cost." The TVA Act defines "system cost" to include "all direct and quantifiable net costs for an energy resource over its available life, including the cost of production, transportation, utilization, waste management, environmental compliance, and, in the case of imported energy resources, maintaining access to foreign sources of supply."[80] Congress should consider revising this definition to expressly include the cost of transmission.

Third, Congress should consider revising the statute to enable and require TVA to take a more comprehensive approach to resource planning that considers a broader array of benefit metrics, using FERC Order No. 1920 and regional multi-value transmission planning as a model. The goal of resource planning should not merely be to achieve "adequate and reliable service" at the lowest "direct and quantifiable" system costs. Instead, the goal should be to achieve the most benefits to society at the lowest costs and risks to society (i.e., to achieve the highest benefit-to-cost ratio). However, under the current statutory framework, TVA is directed to select a 100% fossil fuel portfolio over a portfolio that includes more clean and renewable energy resources so long as the direct and quantifiable costs of the 100% fossil fuel portfolio are one cent less, without consideration of the economic benefits offered by new technologies. The current statutory framework does not empower TVA to plan in a way that fully considers the true costs and true benefits of resource planning, but only in a way that considers the "direct" costs and a very limited list of two benefits: "adequate and reliable service." For instance, the statute would direct TVA to select a planning program with a 1.1 to 1.0 benefit-cost ratio over a plan with a 10 to 1.1 benefit-cost ratio, because it only values cost minimization rather than net-benefit maximization. Therefore, Congress should consider revising the statute more broadly to prioritize cost-effective benefit maximization rather than just minimization of direct costs. For instance, instead of merely planning to provide "adequate and reliable service", TVA should be directed to plan to provide "adequate, reliable, sustainable, affordable, and resilient service," and thus consider a broader spectrum of benefits. Likewise, instead of being directed to conduct merely a "least-cost planning program", TVA should be directed to conduct a planning program process that comprehensively evaluates benefits, costs, and risks for society over the long run.[81]

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80 16 U.S. Code § 831m–1(b)(3).

81 *See e.g.*, Arkansas Public Service Commission Resource Planning Guidelines For Electric Utilities, Section 2, Resource Planning Defined, resource_plan_guid_for_elec_06-028-R_1-7-07.pdf. ("The process results in the selection of a portfolio of resources which best meets the identified objectives while balancing the outcome of expected impacts and risks for society over the long.").

Require Expanded Interregional Transmission Planning

Congress should require TVA to carefully consider the value of interregional transmission in future IRP processes. Multiple members of Congress have made proposals to expand interregional transmission in recent years — most notably the Manchin-Barrasso permitting reform bill released in the summer of 2024 contains provisions to improve both the planning for and permitting of interregional transmission.[82] While these proposals have stalled, there is bipartisan agreement around the reliability and national security benefits of interregional transmission. Congress could look to TVA, as a federal instrumentality, to 'walk the walk' and demonstrate the benefits of proactive buildout of regional ties. TVA is literally and figuratively well-positioned to do so. It borders both PJM-West and MISO-North and South as well as the large utilities which serve the rest of the Southeast.

TVA has no shortage of options in expanding interregional connections both along its seams and in further flung locales. The DOE's National Transmission Planning Study recommended new 500-kV ties between TVA and both PJM and MISO to enhance grid reliability in extreme weather events.[83] To do so, TVA might look to take advantage of MISO's LRTP Tranche 2 plans which include expansion into Kentucky near the TVA-MISO border.[84] TVA should continue to engage with MISO as their LRTP Tranche 4 process, already begun, is considering expanded ties between MISO-North and MISO-South which would run across TVA's territory.

In addition to expanded ties on the seams, TVA should examine buying power from new merchant transmission projects. One option is for TVA to consider signing a power purchase agreement with the Southern Spirit project currently under development.[85] Southern Spirit is an HVDC line which will provide 3,000 MW of transfer capacity between ERCOT and Louisiana. The project recently received a an agreement by DOE's Grid Deployment Office to use its revolving loan fund to purchase capacity worth up to $360 million .[86] TVA could also look to the Grain Belt Express project (recently offered a conditional $4.9 billion loan guarantee by DOE's Loan Programs Office)[87] which will move up to 5,000 MW of solar and wind energy

82 American Council on Renewable Energy, ACORE Applauds Bipartisan Energy Permitting Reform Legislation (July 22, 2024), https://acore.org/news/acore-applauds-bipartisan-energy-permitting-reform-legislation/.

83 DOE Needs Study, supra note 17, at 80.

84 Brattle Group, supra note 4, at 25.

85 Ibid.

86 U.S. Department of Energy, Biden-Harris Administration Invests $1.5 Billion to Bolster the Nation's Electricity Grid and Deliver Affordable Electricity to Meet New Demands (Oct. 3, 2024), https://www.energy.gov/articles/biden-harris-administration-invests-15-billion-bolster-nations-electricity-grid-and-0.

87 U.S. Department of Energy, LPO Announces Conditional Commitment to Grain Belt Express to Construct High-Voltage Direct Current Transmission Project (Nov. 25, 2024), https://www.energy.gov/lpo/articles/lpo-announces-conditional-commitment-grain-belt-express-construct-high-voltage-direct.

from western SPP to PJM and MISO.[88] TVA could take advantage of either project – providing benefits to its own ratepayers and showing federal leadership to the rest of the electricity sector. Therefore, Congress should require TVA to carefully consider the value of interregional transmission in future IRP processes.

Take Down the Fence

Under this option, TVA would no longer be prevented from making sales outside of its original service territory, and its customers would be able to terminate their PPAs with TVA with a reasonable notification period, and secure transmission service from TVA so they could access power from non-TVA sources, whether located within or outside the TVA service territory.

To implement this option, Congress would need to revise the TVA Act and the wheeling sections of 211 and 211A of the FPA to remove the restriction on TVA from selling outside its service territory and to permit FERC to order TVA to wheel, at its customer's request, power from non-TVA resources.

This option may engender opposition from neighboring utilities, who might fear having to compete with power generated from TVA facilities that have preferable bond financing, and hence, potentially lower costs than the neighboring investor-owned utilities, such as Duke, Southern, LGE-KU, and Entergy. Yet, the Fence appears rather porous already, as TVA has nine exchange agreements for purchase and sale transactions with large neighboring utilities.[89] Also, TVA is a sponsoring member of the Southeast Energy Exchange Market (SEEM), an energy market established by its participants for the purchase and sale of energy in real time. SEEM allows TVA to sell and purchase energy across the Fence.

Existing TVA/customer power contracts will impact the viability of this option. Under the PPAs in effect for many years, customers can terminate their agreements with TVA by providing five years' written notice. But given TVA's refusal to wheel power from alternative suppliers for its customers, there really was no alternative. To enhance its monopoly position, TVA approached its customers with a new PPA that required twenty years notice to terminate. At the time of drafting this Report, all but four of 153 wholesale that TVA supplies have signed the new PPA, so even if the Fence were taken down completely, almost all would not have access to alternative suppliers for at least twenty years. Customers who signed on to these PPAs because they did not believe they had any other option would need some type of accommodation if this option were pursued.

88 Brattle Group, supra note 4, at 25.

89 *Athens Utils. Board*, 177 FERC ¶ 61,021 at P 5, n.15.

Open a "Gate"

Rather than taking the Fence down completely, Congress could simply revise or clarify section 211A of the FPA to make clear that TVA is not exempt from orders under section 211A of the FPA and limit FERC's discretion to take a 211A case. More specifically, if a petitioner satisfies the financial criteria (cost savings etc.), then FERC should be required to order TVA to wheel the customer's purchased power across its system. This approach would open a "gate" into the TVA system to import power for a customer who has prevailed after filing a section 211A case. The "gate" would be available to such customer, but unlike the tear-down-the Fence option, only customers who prevail in a section 211A case would be able to compel TVA to wheel power into and across the TVA system. The 211A applicant would have to satisfy the standard for such access under section 211A and FERC's implementing regulations.

Similar to the take-down-the-Fence option, customers who have signed the new PPAs with a twenty-year termination period should be permitted an accommodation to take advantage of the new ability to secure wheeling orders from TVA to import power from non-TVA resources. For instance, one option could be to permit customers to buy their growth capacity from non-TVA resources, while remaining customers for TVA power to supply their existing loads until a date certain (such as when the new legislation is enacted). Also, customers who entered into the newer contracts with the twenty-year termination period currently have limited rights to purchase power from renewable resources. Therefore, Congress should open a "gate" to allow customers to purchase power from renewable resources across located outside the TVA system.

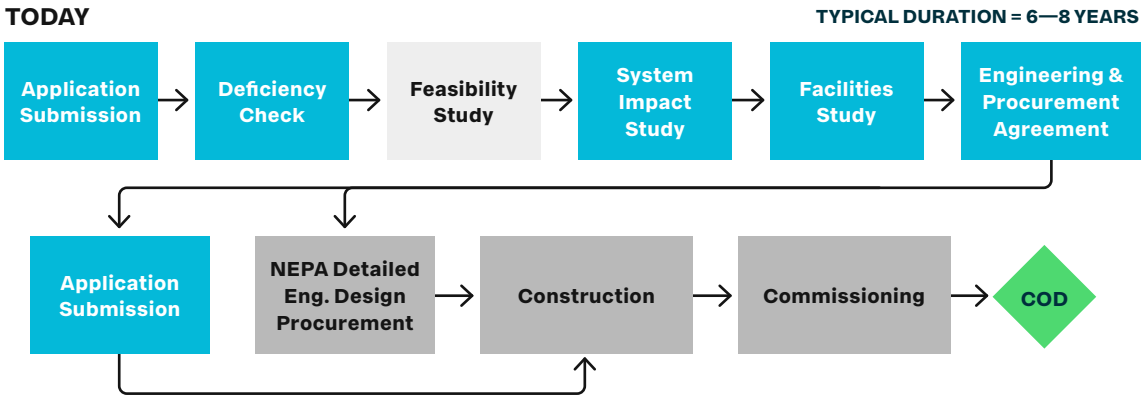
Permitting Reform

As a federal instrumentality, all TVA generation projects are subject to National Environmental Protection Act (NEPA) review. This creates significant delays for developers. As shown here, in both the pre- and post-Order No. 2023 processes NEPA review begins only once an interconnection agreement is reached – as much as five years after a project has requested interconnection.[90] TVA should examine whether the NEPA process could run concurrently to the cluster study process in their new post-FERC Order No. 2023 interconnection procedures. There are risks in this approach: projects without signed interconnection agreements are more likely to leave the queue, wasting time and resources. And studies may identify upgrades that were not included in the initial scope of NEPA review. But the shift to a cluster study process should reduce both of these risks. Applications now carry greater

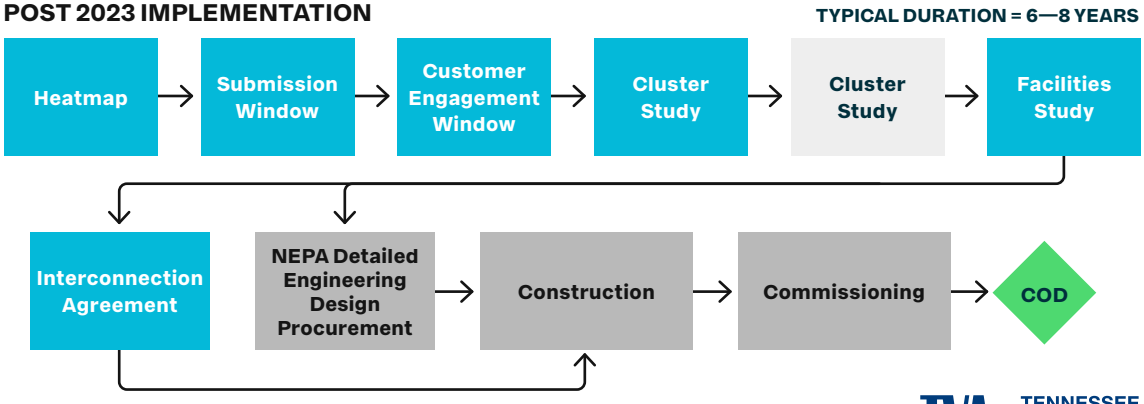
90 TVA, supra note 25

deposits and penalties for withdrawal in an explicit bid to make project submissions less speculative. The NEPA process will also need to change to accommodate other changes in the cluster study process. Developers currently lack clarity as to who will be responsible for environmental studies of system upgrades identified in the cluster process. As TVA works to modernize its interconnection system, it should search for tools that allow it to expedite NEPA review.

TVA Interconnection Process Comparison



Order NO. 2023 makes the study process (Level 1) more efficient, but it does not directly change anything in environment, design, procurement, construction, or commissioning (Level 2)



Preliminary – Subject to change

TENNESSEE VALLEY AUTHORITY

Congress could help TVA accelerate NEPA review for new generators. One possible reform, taken from the transportation space, is planning and environmental linkages (PEL). The Federal Highway Administration (FHWA) has used PEL since the early 2000s.[91] The PEL process is based on strong stakeholder engagement designed to identify potential environmental and community impacts early in the planning process and identify possible alternatives. Congress has repeatedly intervened to broaden the use of PEL approaches by federal transportation agencies and their state counterparts — notably in the 2015 Fixing America's Surface Transportation Act.[92] PEL's use in highway planning has obvious applicability to transmission planning — both of which are multi-year initiatives involving complex stakeholder environments to build linear infrastructure. It may also offer insights for TVA's cluster study process which more closely replicates a planning process than individual interconnection studies.

Bring TVA Under FERC Jurisdiction

Despite a lack of statutory obligation to do so, TVA largely implemented FERC Order No. 2023 and has stated an intent to adopt portions of Order No. 1920. Renewable developers are cautiously optimistic about TVA's cluster study process. But it's important to note that in the absence of strong external enforcement, TVA's promise to implement Order No. 2023 (or any other order) is of limited value. As previously noted, TVA has limited use of surety bonds and refused to apply FERC's penalty structure to itself. Renewable developers and clean energy advocates are contesting these same issues (among others) in PJM's compliance filing process.[93] There is no formal means for developers to argue for the same changes in TVA.

TVA's stakeholder process is much less extensive than that of the ISOs and RTOs. It does not undergo a formal compliance process with even the orders it does implement. Bringing TVA under FERC's umbrella would do little to hinder the agency given that they already have an informal compliance process for FERC orders. But it would provide accountability mechanisms for developers and greater overall transparency in the region. A FERC-compliant stakeholder process would provide much needed clarity to developers looking to build in the TVA service territory. The FERC Order No. 2023 process again provides a ripe example. While renewable developers are optimistic about the cluster study process, they have lingering questions about how TVA will approach key elements of interconnection reform.

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91 California Department of Transportation, Planning and Environmental Linkages Study Guidebook (2024), https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/ct-pel-guidebook-a11y.pdf.

92 Federal Highway Administration, Planning & Environment Linkages Handbook (Jan. 2, 2024), https://www.environment.fhwa.dot.gov/env_initiatives/PEL/publications/FHWA_PEL_Handbook_508_2024-01-02.pdf.

93 PJM Interconnection, LLC, Protest of the Clean Energy Ass'ns, Docket No. ER24-2045 (June 20, 2024).

TVA's new interconnection procedure introduces several new variables which, while familiar to FERC-compliant regions, are novel to the region. Generators will now have the option to pursue Network Resource Interconnection Service or Energy Resource Interconnection Service.[94] TVA has introduced surplus interconnection service and provisional interconnection service. These tools will expand the options available to TVA as they look to bring on new, clean generation. But because they were implemented without a full stakeholder process, including an opportunity for comment and, if necessary, protest specifics, developers have less clarity around investment decisions than they would in a FERC-compliant region.

Reevaluating Privatization of TVA's Transmission System

Attempts to privatize TVA's system have occurred for nearly as long as it has existed.[95] These efforts culminated in the passage of the 1959 TVA amendments which created the "fence" structure that persists today. President Eisenhower, who signed the 1959 amendments, privately told confidants he would "like to sell the whole thing."[96] But such efforts have proven politically fraught — as TVA has been mostly successful in providing low-cost, reliable service for ratepayers.

Presidents of both parties have considered selling off the TVA. In 2014, President Obama initiated a strategic review of the agency which included a privatization option.[97] President Trump included privatization of TVA in several budget proposals.[98] This most recent push was quickly denounced by a bipartisan coalition — including Tennessee Senators Marsha Blackburn and Lamar Alexander, Washington Senator (and ranking member on the Senate Energy and Natural Resources Committee) Maria Cantwell, and most of the Tennessee Congressional delegation.[99] Whether President Trump revives the effort in his second term, and whether such a push could survive such resistance, remains to be seen.

In a privatization scenario, clean energy's position would be fraught. The when, how and who of the sale would matter at least as much as the fact of it. The status

94 Tennessee Valley Authority, Order No. 2023 Implementation FAQ (Oct. 10, 2024), http://www.oasis.oati.com/woa/docs/TVA/TVAdocs/TVA%20FAQ.pdf.

95 Rachel Neuburger, Power and Politics in the Tennessee Valley, 45 Energy L.J. 1 (2024), https://www.eba-net.org/wp-content/uploads/2024/11/452_8-Neuburger251-305.pdf.

96 Tennessee Valley Authority, The Great Compromise, https://www.tva.com/about-tva/our-history/tva-heritage/the-great-compromise (last visited Dec. 10, 2024).

97 Congressional Research Service, Privatizing the Tennessee Valley Authority: Options and Issues (July 29, 2013), https://crsreports.congress.gov/product/pdf/R/R43172 At 16.

98 Chattanooga Times Free Press, Trump Revives Plan to Sell TVA Transmission Assets (Feb. 13, 2020), https://www.timesfreepress.com/news/2020/feb/13/republican-lawmakers-tennessee-split-trump-tva-bud/.

99 Daily Energy Insider, Bipartisan Senators Rebuke Trump Administration Proposal to Privatize Federal Tennessee Valley Authority Assets, (June 26, 2018), https://dailyenergyinsider.com/news/13274-bipartisan-senators-rebuke-trump-administration-proposal-to-privatize-federal-tennessee-valley-authority-assets/.

quo is an unregulated TVA. There is minimal oversight. Ratepayers, advocates and policymakers have few avenues of intervention. Privatization does not necessarily disrupt that status quo. If TVA were simply purchased by a large utility in a neighboring southern region and brought under one or more state commissions there is no guarantee that outcomes for renewable developers would improve.[100] If, however, TVA's sale were conditional on the creation of a real market instrument for clean energy — not the Southeastern Energy Exchange Markets, which has manifestly failed in its goals, but an actual RTO — there could upside for the renewable energy industry.[101]

Before making any decision to privatize TVA's system, Congress should consider the applicable regulatory framework that will govern a privately owned TVA system (e.g., traditional cost-of service-based ratemaking, performance-based regulation, or deregulated), and the applicable financial incentives that will result from each regulatory framework. Privatization of generation ownership would not necessarily allow solar, storage, and wind to compete on their own merits as cheaper resources, if the applicable regulatory framework rewards privately held "public" utilities for pursuing more costly generation. For instance, in states that follow cost-of-service ratemaking, the private profit motive may guide privately owned vertically integrated utilities that own generation to pursue more costly new generation projects, such as new gas plants, in lieu of more beneficial transmission projects or less costly renewable energy.[102] Therefore, to the extent that Congress considers privatizing TVA, such privatization should be limited to the TVA transmission system, which would be subject to FERC regulation if privatized.

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100 "Did Alabama Lie to FERC?" Did the Alabama PSC Lie to FERC? - Southern Renewable Energy Association.

101 Southern Renewable Energy Association, SEEMs First Year: Broken Promises and Disappointing Results (Nov. 9, 2023), https://www.southernrenewable.org/blog/seems-first-year-broken-promises-disappointing-results.

102 See e.g., Performance-Based Regulation: Harmonizing Electric Utility Priorities and State Policy ("Under traditional regulatory approaches, which originated more than a century ago, utilities may lack strong financial incentives to contain costs and pursue initiatives that better align with current consumer demands and state policy goals.").

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Congress should look closely at ways to make TVA's service cheaper, cleaner, more reliable, more resilient, including but not limited to evaluating the numerous recommendations proposed herein. While Congress does not directly fund TVA, in the absence of governance by FERC or state utility commissions they are the first line of defense for TVA's ten million ratepayers. Despite this responsibility, no significant change has been made to TVA's governance structure since 2004. Congress should embrace its oversight role of TVA. The Congressional Research Service should publish a report investigating how TVA can adopt industry best practices in resource planning, transmission, and interconnection, and laying out recommendations for possible legislative action.

Conclusion

Congress should explore the recommendations outlined herein for exercising its oversight authority over TVA before increasing the balance on its credit. It is important to note that TVA has a $30 billion debt limit and about $10 billion of remaining borrowing authority.[103] An evaluation of the appropriateness of raising TVA's debt limit or exploring other financing options is beyond the scope of this report. However, as TVA races to confront growing demand for electricity these conversations will emerge. As the TVA inspector general noted, "While TVA's planned $18 billion of investment for new generation and transmission upgrades should meet the short-term needs through 2028, demand projections suggest there will be significantly more investment needed beyond 2028. TVA will need some combination of an acceptable debt limit by Congress, rate changes, and/or alternative ways to finance future builds."[104] TVA certainly will need these financing options if they intend to pursue many of the scenarios outlined in the IRP, notably the construction of up to 10 GW of Vogtle-style AP1000 reactors as contemplated in the Scenario 5 portfolio.[105] But these tools should be coupled with assurances that TVA's transmission and interconnection systems will mirror best practices and provide for competition to lower prices for consumers. Congress should explore the recommendations outlined herein before increasing the balance on TVA's credit card.

103 U.S. Government Accountability Office, Actions Needed to Better Communicate Debt Reduction Plans and Address Billions in Unfunded Pension Liabilities (Mar. 2017), https://www.gao.gov/assets/gao-17-343.pdf.

104 Office of the Inspector General, Tennessee Valley Authority, Semiannual Report (Mar. 31, 2024), https://www.oversight.gov/sites/default/files/documents/reports/2024-05/semi76.pdf.

105 TVA IRP, supra note 9, at 4-15.

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1150 Connecticut Ave NW #401
Washington, DC 20036