



**Memorandum from the Office of the Inspector General**

April 10, 2025

Tracy D. McCrory

**FINAL REPORT – EVALUATION 2024-17510 – TVA TRANSMISSION CAPACITY**

The Tennessee Valley Authority's (TVA) transmission planning process includes assessing the capacity of the transmission system to reliably deliver power from generation resources to customer loads. Due to the importance of ensuring TVA's transmission system can accommodate its generation strategy and ensure adequate system margins to allow for reliable customer supply, we performed an evaluation to determine if TVA's plans for transmission capacity support (1) planned generation additions and (2) demand growth.

We determined TVA's plans for transmission capacity account for generation additions and demand growth; however, we identified an increased risk to Transmission Planning and Projects' (TP&P) ability to execute these plans. These included (1) gaps between budgeted funding levels and forecasted spending needed to support TVA's planned generation and demand growth through fiscal year (FY) 2029 and (2) some transmission projects that were forecast to exceed approved cost and/or time frames, which could impact the ability of TP&P to support generation additions or demand growth.

We made recommendations to the Vice President, TP&P, to (1) work to develop a strategy to align their forecasted spend and funding and (2) continue to identify opportunities to improve project estimation and execution. In response to our draft report, TVA management agreed with our recommendations and provided actions taken to address the recommendations. See the Appendix for TVA's complete response.

**BACKGROUND**

The transmission planning process includes assessing the ability of the transmission system to reliably deliver power from generation resources to customer loads. TP&P performs an annual Resource and Capacity Assessment (RCA) to analyze the current long-term resource and capacity goals for the TVA system that look 15 to 20 years ahead at the probable future including economic development (ED) studies. Inputs to the RCA include an assessment of the ability of the TVA bulk transmission system to reliably deliver power from TVA's designated network resources to TVA's customers and identify potential transmission issues, TVA's Budget Capacity Expansion Plan (commonly referred to as the "Lego Chart"), interconnection queue,<sup>1</sup> and firm/probable ED loads. The

---

<sup>1</sup> The interconnection queue is a collection of power generation and transmission projects requesting to connect to the power grid.

2024 RCA included 145 projects with \$11.2 billion in transmission related costs through 2035.<sup>2</sup>

Financial Operations and Performance (FO&P) works with strategic business units to develop individual business plans that align to strategic priorities and elements. FO&P is responsible for providing strategic business unit financial targets. TP&P provides a 5-year portfolio, including a risk scenario, that shows an optimized portfolio tied to targets and the updated needs of the business unit. According to the TP&P senior program manager, the process begins with targets from the previous business plan and new information is added. If this results in exceeding the financial target, they look for ways to trim or defer projects to meet the target by running optimization models and considering risks.

Due to the importance of ensuring TVA's transmission system can accommodate its generation strategy and ensure adequate system margins to allow for reliable customer supply, we performed an evaluation of TVA's transmission capacity.

### **OBJECTIVE, SCOPE, AND METHODOLOGY**

The objective of our evaluation was to determine if TVA's plans for transmission capacity support (1) planned generation additions and (2) demand growth. The scope of our review included the status of transmission capacity plans as of FY 2024 to meet generation and demand growth needs by the end of FY 2029. To achieve our objective, we:

- Reviewed transmission planning documentation to determine if the transmission system was assessed for capability to meet:
  - Approved generation additions
  - New industrial customers
  - Purchased power agreements<sup>3</sup>
  - Load growth
- Reviewed transmission project data for projects with a target, forecasted, or actual in-service date between FY 2024 and FY 2029 to determine if transmission project time lines and funding support system needs. Of the 341 projects active or in service, we reviewed the 193 active projects past the scoping and estimating phase of planning and the 35 projects in service as of October 23, 2024.

This evaluation was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*.

### **FINDINGS**

We determined TVA's plans for transmission capacity account for generation additions and demand growth; however, we identified an increased risk to TP&P's ability to execute

---

<sup>2</sup> The transmission related costs include some work performed by transmission but funded by the interconnection customer.

<sup>3</sup> Purchased power agreements are bilateral wholesale or retail power contracts.

these plans. These included (1) gaps between budgeted funding levels and forecasted spending needed to support TVA's planned generation and demand growth through FY 2029 and (2) some transmission projects were forecasted to exceed approved cost and/or time frame, which could impact the ability of TP&P to support generation additions or demand growth.

### **GAPS EXIST BETWEEN FORECASTED SPEND AND FUNDING NEEDS**

There is an increased risk that TP&P may not be able to support generation additions and demand growth without an increase in funding for FYs 2026-2029. The 2024 RCA identified funding as a concern and concluded that, "Significant increases in Transmission funding are required to realize our resource and capacity goals."<sup>4</sup> As a result, TP&P met with FO&P to obtain additional funding to support strategic projects and received an increase to their target budget for FY 2025. While TP&P has obtained the additional funding needed to support its strategic project spending for FY 2025, significant increases to the business plan funding levels will be needed to support planned generation additions and demand growth going forward.

The current target budget for FY 2026 through FY 2029 does not cover \$1.7 billion of the anticipated costs, as shown in Figure 1 below. According to TP&P personnel, the strategic spend forecast includes forecasted dollars for gas plant builds that have not yet been allocated to the spend target, which will lessen the gap by around \$700 million. This leaves a total gap of around \$1 billion for FY 2026 through FY 2029.

<b>Strategic Spend Forecast versus Targets (in millions)</b>					
<b>FY</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Strategic Spend Forecast	\$1,016	\$1,254	\$1,037	\$725	\$4,032
Spend Target	<u>713</u>	<u>717</u>	<u>427</u>	<u>431</u>	<u>2,288</u>
<b>Gap</b>	<b>\$ 303</b>	<b>\$ 537</b>	<b>\$ 610</b>	<b>\$294</b>	<b>\$1,744</b>

**Figure 1**

### **SOME TRANSMISSION PROJECTS WERE FORECASTED TO EXCEED APPROVED COST AND/OR TIME FRAME**

We found some transmission projects were forecasted to exceed approved cost and/or time frames, which could impact the ability of TP&P to support generation additions or demand growth. As of October 23, 2024, there were 193 transmission projects that were active and past the scoping and estimating phase of planning and 35 transmission projects that were put in service between October 1, 2023, and October 23, 2024. Of the 193 active projects, 29 (15 percent) were forecasted to be completed more than 3-months past the approved in-service date. Of the 35 projects that were in service, 3 (9 percent) were placed in service more than 3-months past the approved in-service date. Additionally, there were 16 (8 percent) active projects that were forecasted to cost at least 25 percent more than the approved cost.

<sup>4</sup> These increases are for solar-network upgrades, Transmission-funded storage, gas network upgrades, generation retirements, multi-value projects, dynamics-driven projects, and ED funding.

According to the Vice President, TP&P, factors impacting project schedules and budgets are increased lead times and costs of equipment. For example, since 2020, the lead time for 500 kilovolt transformers has increased from approximately 1 year to 5 1/2 years and the cost has increased over 80 percent. Transmission Planning has taken actions to reduce the impact of these increases, including (1) obtaining funding to order materials before the project is fully scoped to accommodate longer lead times and (2) updating the tool used for estimating projects to more accurately reflect the increases in costs. In addition, TP&P has implemented a performance metric to track the accuracy of their initial cost estimates compared to the cost after detailed scoping.

### **RECOMMENDATIONS**

We recommend the Vice President, TP&P:

- Work with FO&P to develop a strategy to align their forecasted spend and funding.

**TVA Management's Comments** – TVA management agreed with the recommendation and has launched an Integrated Transmission Plan to better inform FO&P of transmission specific needs for business planning. TVA has also created an Integrated System Planning business unit to facilitate holistic planning and financial strategies across multiple planning groups. See the Appendix for TVA management's complete response.

**Auditor's Response** – We concur with TVA management's actions and will verify completion prior to closing the recommendation.

- Continue to identify opportunities to improve project estimation and execution.

**TVA Management's Comments** – TVA management agreed with the recommendation. Transmission Planning has (1) established reoccurring meetings with Supply Chain to identify and discuss equipment costs and schedule impacts, (2) begun an analysis of actual expenses through a project's life cycle, and (3) scheduled training and education on forecasting accuracy. See the Appendix for TVA management's complete response.

**Auditor's Response** – We concur with TVA management's actions and will verify completion prior to closing the recommendation.

- - - - -

This report is for your review. Your written comments, which addressed your management decision and actions taken, have been included in the report. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding evaluations that remain unresolved after 6 months from the date of report issuance.

Tracy D. McCrory  
Page 5  
April 10, 2025

If you have any questions or need additional information, please contact Heather R. Kulisek, Manager, Evaluations - Operations, at (423) 785-4815 or Lindsay J. Denny, Director, Evaluations - Operations at (865) 633-7349. We appreciate the courtesy and cooperation received from your staff during the evaluation.

A handwritten signature in black ink that reads "David P. Wheeler". The signature is written in a cursive style with a long, sweeping underline.

David P. Wheeler  
Assistant Inspector General  
(Audits and Evaluations)

HRK:FAJ

cc: TVA Board of Directors  
Jessica Dufner  
James Patrick Hall  
Gregory James Henrich  
Jill M. Matthews  
Aaron P. Melda  
Donald A. Moul  
Thomas C. Rice  
Ronald R. Sanders II  
Rebecca C. Tolene  
Ben R. Wagner  
Kay W. Whittenburg  
OIG File No. 2024-17510



1101 Market Street, Chattanooga, Tennessee 37402

David P. Wheeler  
Assistant Inspector General – Audits & Evaluations  
Office of the Inspector General

April 7, 2025

RE: REQUEST FOR COMMENTS – EVALUATION 2024-17510 – TVA TRANSMISSION CAPACITY

Dear Mr. Wheeler,

The Transmission team would like to thank the Office of the Inspector General (OIG) for their diligence and support in assessing TVA's transmission capacity.

The Transmission Planning & Project (TPP) leadership team has reviewed your draft memorandum dated February 6, 2025 and would like to provide the following responses and follow-up actions.

**Recommendations**

1. **Financial Strategy** – *We recommend the Vice President, TPP, work with FO&P to develop a strategy to align their forecasted spend and funding.*

**RESPONSE**

TPP agrees with this recommendation.

As a not-for-profit agency of the federal government, TVA strives to be good stewards of the valley's resources. In order to maintain low customer rates and stay below the debt-limit as established within the Tennessee Valley Authority Act, TVA uses a variety of cost/benefit and risk analyses to balance its budgets.

To better inform Financial Operations & Performance (FO&P) of business planning process for transmission specific needs, we launched the first-ever Integrated Transmission Plan (ITP) in late 2024. The ITP utilizes outputs from the enterprise-level Integrated Resource Plan (IRP) and identifies transmission system needs that will be required to support IRP portfolios. This plan will help us better communicate the financial implications of transmission needs and risks which is required in order to conduct enterprise-level funding discussions.

TVA has also created an Integrated System Planning (ISP) business unit as part of its current Enterprise Transformation and Optimization Initiative. This new group will align planning efforts across resource, transmission and distribution planning groups to facilitate holistic planning and financial strategies. A Generation Siting group has been formed and tasked with streamlining the identification process of future generation sites. With this earlier and targeted insight, Transmission can make more timely decisions and recommendations on projects required to support future generation.

2. **Improve Project Estimation & Execution** – *We recommend the Vice President, TPP, continue to identify opportunities to improve project estimation and execution.*

**RESPONSE**

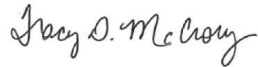
TPP agrees with this recommendation.

After the COVID pandemic, TVA saw the impact of inflation on material and labor in addition to supply chain delays in securing materials. As these factors compounded, TPP's project estimation and execution accuracy began to decline.

Transmission Planning has historically used previous project expenses, detailed estimates and schedules to inform future project requests. Recognizing this method is no longer feasible, we have implemented strategies to improve project cost and schedule estimates. In late 2024, we improved our communication with Supply Chain by establishing reoccurring meetings to identify and discuss equipment costs and schedule impacts. We also continue to communicate impacts to customers, both internal and external, to ensure schedules are consistently aligned. In early 2025, TPP began the staged analysis of actual expenses through a project's life cycle and has scheduled training and education on forecasting accuracy.

As with our financial strategy, TVA's creation of new teams to facilitate enterprise-wide planning and budgeting will allow us to plan and execute projects more accurately.

On behalf of TPP, Transmission and TVA, I thank you for allowing us to review your findings and provide feedback on the evaluation.



Tracy McCrory  
Vice President  
Transmission Planning and Projects

HRK:FAH

cc:

Samuel P. Delk  
David B. Fountain  
James Patrick Hall  
Gregory James Henrich  
Aaron P. Melda  
Donald A. Moul  
Thomas C. Rice  
Ronald R. Sanders II  
Kay W. Whittenburg  
OIG File No. 2024-17510