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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY

TVA POWER SUPPLY FLEXIBILITY PROPOSAL

The Tennessee Valley Authority (TVA) is proposing to provide enhanced power supply flexibility to local power companies (LPCs) within their respective power service areas that have entered into Long-Term Partnership (LTP) agreements with TVA. Under the terms of the Long-Term Agreement resolution approved by the TVA Board of Directors in August 2019, LPCs that enter into an LTP agreement ("Valley Partners") would be offered the option to generate a portion of their customers' power requirements.

Under the TVA Act of 1933, as amended (the TVA Act), Congress charged TVA with advancing the social and economic welfare of the residents of the Tennessee Valley region. One of the most important ways that TVA fulfills its congressional mandate is by providing reliable, affordable electric power to its 154 municipal and cooperative LPCs. LPCs take delivery of electricity generated and transmitted by TVA and perform the distribution function for their approximately 10 million retail consumers of electricity. TVA also sells power to 58 directly served retail customers with large or unusual power requirements. TVA is mandated to provide power at rates as low as feasible.

The LTP agreements strengthen the contractual relationships between LPCs and TVA to ensure continued success of the public power model. The proposed action ("Flexibility Proposal") would implement the power supply flexibility option identified in the August 2019 Board resolution. Under the power supply flexibility option, TVA committed to develop, by a specified date, an option for power supply flexibility for Valley Partners to generate a portion of their energy. If TVA does not provide an agreeable power supply flexibility option by the specified date, LPCs have the option to terminate their LTP agreement.

TVA would benefit from the Flexibility Proposal because it would enhance the Valley's energy resource diversity and would be responsive to customer demand for renewable energy resources. These are objectives identified by TVA in its 2019 Integrated Resource Plan (IRP). The TVA region benefits from a diverse power system. As the economics of renewables and distributed energy resources (DER) continue to improve, operational agility will be increasingly important to successful integration of these resources into the generation portfolio. The appropriate level of flexible generation would provide Valley Partners sufficient flexibility to meet their customers' needs while ensuring that the financial health impact to TVA is at a level that fits within the current strategic financial plan.

Current wholesale power contracts between TVA and LPCs require that LPCs obtain their entire power requirements from TVA. For many years, LPCs have requested the flexibility to generate

power. LPCs have indicated that some customers turn to third-party providers for generation services because the current wholesale power contract restricts the LPCs from providing those same services. Under the Flexibility Proposal, TVA would remain the full requirements provider, but Valley Partners would be allowed to provide generation services to their retail customers so as to remain their customers' trusted energy advisor and comprehensive power supplier. The proposal would potentially reduce costs for customers seeking generation solutions and would address customer demands for reductions of their carbon footprints. Additionally, the Flexibility Proposal would allow some LPCs to lower their wholesale power costs through the reduction of monthly demand and energy charges.

The environmental assessment (EA), incorporated herein by reference, tiers from the 2019 IRP Environmental Impact Statement (EIS) and relies in part on that EIS analysis. Because the Flexibility Proposal establishes a "program" applying to any LPC that has a long-term agreement with TVA, the EA's analysis is largely generic in nature as site-specific information about the location or type of power generation resource LPCs would utilize is unknown.

Tiering to the 2019 IRP EIS allows TVA to rely on the assessment in that EIS of the IRP Power Target Supply Mix and the types of generation considered during its development. It allows TVA to tier its analysis to address more localized impacts that may occur based on likely LPC deployment scenarios. The 2019 IRP EIS provides general, non-site specific information in Section 5.2 about the environmental impacts of solar generating facilities over the range of capacities likely to be constructed for LPC flexible generation. Diesel- and coal-fired generation would be inconsistent with the 2019 IRP and nuclear generation at that scale would not likely be feasible.

The Final IRP incorporated a Target Power Supply Mix as the preferred generation portfolio mix that included expansion of DER across the TVA region. While the IRP accounted for DER growth in the Valley by considering distributed generation and storage as resource options, it did not set specific capacity ranges for the expansion of DER or address specific programs that would implement distributed generation offerings by TVA and/or LPCs. Those programs were identified as implementation-level considerations and policy considerations that would be addressed later in time.

Alternatives

The subject EA evaluates three alternatives: the No Action Alternative and two action alternatives. Under the No Action Alternative, Valley Partners would continue to rely on TVA for their entire power requirements. The Valley Partners would have the contractual option to terminate their LTP agreements after October 1, 2021. Based on feedback from Valley Partners, TVA estimates that fewer than 10 percent of the current 140 Valley Partners would terminate their LTP agreements if a flexible generation option is not adopted.

Under Alternative A (the "Proposed Action Alternative" in the draft of the EA), TVA would establish new agreements ("Flexibility Agreements") with LPCs that are Valley Partners to provide power supply flexibility, based on the following principles:

1. Valley Partners could have flexible generation of up to five percent of their average total hourly energy sales over the last five TVA fiscal years (FY 2015 to 2019), converted to capacity basis with a minimum availability of one megawatt (MW) per Valley Partner. TVA would calculate each LPC's average hourly wholesale load over the last five TVA fiscal years, multiplied by five percent. The calculated amount would never decrease for Valley Partners. A total of approximately 800 MW could be developed if all 154 LPCs across the Valley participate and develop their maximum allowable capacity. The largest LPCs have potential flexible generation of 70 to 80 MW, while 24 small LPCs have the 1-MW minimum potential flexible generation (Appendix A of the EA).
2. Flexible generation would be distribution scale and located within the LPC service territory, except when circumstances such as restrictive siting can be demonstrated. Valley Partners would not be required to own or operate flexible generation assets themselves. LPCs could use a combination of different types of generation.
3. Flexible generation would be documented, metered, operated, and connected in a manner consistent with TVA standards. The Valley Partner would provide the location, fuel source, operating characteristics, and the maximum net capability of the flexible generators to TVA. TVA and Valley Partners would ensure the flexible generation projects are interconnected in a safe and reliable manner.
4. Flexible generation would reduce monthly demand and energy billing determinants during the month of generation for the term of the Flexibility Agreement. Generation would reduce the amount of power that would have otherwise been supplied to the LPC by TVA. TVA will remain obligated to provide the full power requirements of the Valley Partner. In certain exceptional circumstances, flexible generation may be treated in accordance with an economically equivalent crediting mechanism. The pricing of flexible generation would be the prevailing wholesale rate.
5. Flexible generation would be consistent with TVA's IRP to ensure that TVA's carbon position is improved. Consistent with DER identified in the 2019 IRP, community solar, rooftop solar, co-located solar and battery installations, natural gas-fired generators, and high efficiency natural gas-fired combined heat and power (CHP) projects would be eligible. Diesel-fired or coal-fired generation technologies would not be eligible, due to their omission from the Target Power Supply Mix identified in the 2019 IRP. However, TVA would maintain discretion to eliminate natural gas-fired generation as a generation option if its system carbon position is not improved.

Provided that Valley Partners adhere to the above principles and the contract, which is built around these principles, TVA would not oversee or have approval authority over the generation resources acquired or constructed by Valley Partners. TVA would not conduct additional site-specific review of new facilities.

Based on continued internal deliberation, discussions with Valley Partners, and input obtained from the various stakeholders during the comment period on the draft EA, TVA developed an additional alternative. Under Alternative B, TVA would establish new Flexibility Agreements with LPCs that are Valley Partners to provide power supply flexibility that would incorporate

principles 2 through 5 of Alternative A. Principle 1 of Alternative A would be replaced with the following:

1. Valley Partners could have flexible generation of up to five percent of their average total hourly energy sales over the last five TVA fiscal years (FY 2015 to 2019), converted to capacity basis with a minimum availability of one MW per Valley Partner. The calculated amount would never decrease for Valley Partners. TVA would apply a 0.4 technology factor to the nameplate capacity for solar installations, which would discount the flexible generation capacity allocation for solar generation by 60 percent. This factor would enable Valley Partners to self-generate approximately three percent of their total energy from solar generating facilities, consistent with the LTP agreement. It would also make the achievable level of generation from solar comparable to that of other sources. A total of approximately 800 MW could be developed if all 154 LPCs across the Valley participate and develop their maximum allowable capacity with resources other than solar. Approximately 2,000 MW could be developed if all 154 LPCs across the Valley participate and deploy only solar to develop their maximum allowable capacity. The potential flexible generation for the largest LPCs would range from 70 to 80 MW if other than solar, to 175 to 200 MW if only solar is deployed. For 24 small LPCs, the potential flexible generation would range from 1 MW if other than solar, to 2.5 MW if only solar is deployed.

To illustrate how this technology factor would be applied, consider a Valley Partner with a flexibility capacity allocation of 10 MW. If the partner wanted to fully deploy that available capacity using solar, it would be able to install 25 MW of solar generating capacity under Alternative B. Under Alternative A, this partner would have been limited to 10 MW of solar generating capacity. If this partner wanted to develop all of its available capacity with CHP or natural gas-fired generation, it would be limited to 10 MW as no technology factor is applied to these types of generation.

As with Alternative A, provided that Valley Partners adhere to the five principles and the contract, which is built around these principles, TVA would not oversee or have approval authority over the generation resources acquired or constructed by Valley Partners. Nor is it foreseeable where such facilities may be located.

TVA's preferred alternative for fulfilling its purpose and need is Alternative B. This alternative provides a level of flexible generation to Valley Partners that is sufficient to meet their customers' needs while also ensuring that the financial health impact to TVA is at a level that fits within the current strategic financial plan. The alternative also provides an allocation methodology to partially mitigate relatively low solar capacity factors, which was an issue of concern to Valley Partners and other stakeholders. Most of the impacts of Alternatives A and B are indirect impacts that would result from the actions of participating LPCs through their construction and operation of flexible generation. The proposed action would also result in some beneficial effects.

Impacts Assessment

The potential impacts of each alternative are described in detail in the subject EA. In order to develop a more robust impact analysis, TVA has made reasonable assumptions concerning the types and scale of flexible generation that LPCs are likely to deploy. These assumptions support TVA's analysis and are based on discussions with LPCs and end-use customers, industry trends, and input TVA received during the development of the IRP. While it is uncertain at this time whether all 154 LPCs will choose to become Valley Partners, most have, to date, done so and the analysis in the EA is based on the assumption that all LPCs would do so. The analysis considers the maximum potential impacts of flexible generation. The analysis assumes a total of approximately 800 MW of flexible generation under Alternative A, with the potential for up to 2,000 MW of installed solar generation under Alternative B. The types of flexible generation are likely to vary among LPCs due to their different system requirements, customer preferences, and other factors. In order to encompass the potential range of variability, the EA analyzes three deployment scenarios for both Alternative A and Alternative B:

Deployment Scenario 1: 100 percent solar;

Deployment Scenario 2: 90 percent solar and 10 percent natural gas-fired generation; and

Deployment Scenario 3: 50 percent solar and 50 percent natural gas-fired generation.

The three deployment scenarios bound the range of the proportions of solar generation and natural gas-fired generation (including natural gas-fired CHP) that is likely and that would ensure that TVA's carbon position is improved. Based on discussions with participating LPCs, TVA considers Deployment Scenario 2 to be the most likely deployment scenario.

Potential solar installations are expected to utilize various configurations of photovoltaic (PV) panels, including ground-mounted multi-MW and smaller 1-MW installations on fixed-tilt and single-axis tracking mounting racks; rooftop-mounted, sub-1-MW installations on commercial and industrial buildings; and dispersed small residential installations. Some of the solar generation is likely to be community solar. Potential natural gas-fired generation systems are expected to be stand-alone systems operated primarily during times of peak demand, or CHP systems. Stand-alone systems would likely be reciprocating internal combustion engine generator sets, which utilize a multiple-cylinder spark-ignition engine to drive a generator and are available in a range of sizes up to about 20 MW capacity. The potential generating systems are described in more detail in Section 3.1 of the EA.

TVA would not have approval authority over LPC generation resources that may be adopted under the Flexibility Proposal. Therefore, the EA addresses the potential impacts of the construction and operation of the flexible generation resources under the control of the LPCs in a generic, non-site specific context and to the extent those impacts are foreseeable. It also addresses the impacts of the flexible generation resources on the overall environmental performance of the TVA power system. TVA notes that the effects of the proposed action on the physical environment depend on decisions made by entities outside of TVA's direct control. Because TVA cannot predict how or even when LPC decisions relating to generation would be

made, the assessment of potential impacts on the physical environment involves some degree of speculation.

Alternative B is unlikely to markedly alter the TVA long-term power supply plan or the timing of the construction of new generating capacity and retirement of existing generating capacity. Under Alternative B, the increased solar generation would offset a larger amount of natural gas-fired generation than Alternative A.

Under Alternative B, short-term beneficial economic impacts would result from construction of generation facilities, including the purchase of materials, equipment, and services and a temporary increase in employment, income, and population. Beneficial impacts to customers of participating LPCs are also anticipated under either action alternative. Temporary, minor adverse noise impacts to minority and low-income populations could occur during the construction and operation of natural gas-fired generation facilities under either action alternative.

Under Alternative B, long-term beneficial impacts to air quality are anticipated due to the overall reduction of emissions, due to increased solar generation that would offset a larger amount of natural gas-fired generation. Temporary emissions of air pollutants and greenhouse gas expected during construction would be negligible under either action alternative.

Any system-wide change in water usage and wastewater discharges would be negligible under either action alternative.

Under Alternative B, solar generation would require up to about 17,250 acres of land under Deployment Scenario 1, up to 15,525 acres under Deployment Scenario 2, and up to 8,625 acres under Deployment Scenario 3. Minor direct adverse impacts on land resources are anticipated under either action alternative.

Under Alternative B, generation of up to 560,000 cubic yards of packaging materials for solar facilities could occur under Deployment Scenario 1, up to 504,000 cubic yards under Deployment Scenario 2, and up to 280,000 cubic yards under Deployment Scenario 3. No adverse impacts to waste management are anticipated with the use of best management practices under either action alternative.

Public and Intergovernmental Review

On April 3, 2020, TVA issued a draft of the EA for public review and comment. TVA provided notice to the public of the review period via a media advisory and outreach to key stakeholders. TVA posted the draft EA on its webpage (www.tva.com/nepa) with information about how to submit comments. During the 30-day comment period, TVA received 12 comment submissions. . Some commenters expressed concern that five percent of energy sales (and the resulting power supply flexibility capacity of 800 MW) would not provide sufficient flexibility and these commenters recommended that TVA consider and evaluate alternatives with higher levels of flexibility in the EA. Some commenters expressed concern that capacity factors were not used in the analysis of the three deployment scenarios and recommended TVA consider the relatively

low capacity factor of solar generation when determining allowable quantities of LPC generation. Others expressed concern that some LPCs may not have viable local options for generating resources and suggested LPCs be allowed to aggregate generating resources.

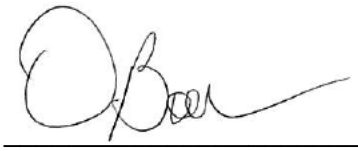
TVA considered these comments when completing the final EA and has responded to substantive comments in Appendix B of the EA. As noted in the respective responses, TVA revised the EA as a result of several comments to improve clarity and provide additional discussion and analysis of relevant issues.

Mitigation

Due to the minor and insignificant impacts identified for the alternatives, there are no TVA commitments or proposed mitigation measures identified for implementation.

Conclusions and Findings

Based upon the analyses documented in the EA, TVA concludes that Alternative B would not be a major federal action significantly affecting the human environment. Accordingly, an environmental impact statement is not required.



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Date Signed