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DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

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April 9, 2018

Via Electronic Mail to mshigdon@tva.gov

Attn: Matthew Higdon, NEPA Project Manager
Tennessee Valley Authority
400 West Summit Hill Drive, WT-11D
Knoxville, TN 37902

RE: TVA Draft Environmental Assessment for Proposed 2018 Rate Change

Dear Mr. Higdon:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) Draft Environmental Assessment (EA) for the proposed *2018 Rate Change*. TVA is considering revisions to the structure of its wholesale electric power rates¹ through “pricing that better aligns wholesale rates with the underlying costs to serve wholesale customers.” TVA proposes to reduce the standard service energy rates by 1¢ per kilowatt hour (kWh) and establish a grid access charge to recover an equivalent amount of revenue. In the Draft EA, TVA considers three potential rate change alternatives. In addition to reviewing the preferred alternative (1¢ per kWh standard service energy rate reduction and grid access charge), TVA reviewed an alternative that would apply a smaller energy charge reduction (0.25¢/kWh standard service energy rate reduction) and grid access charge and an alternative that would apply a larger reduction (2.5¢/kWh) and grid access charge. Each of the rate change alternatives under review in the EA would be revenue neutral for TVA (i.e., they would not change the amount of TVA revenue).

Executive Summary

Based on review of the Draft EA, TDEC identified three categories of comments with which it developed recommendations for TVA to consider in drafting a Final EA. These include; Impacts to Customers; Valuation of Distributed Energy Resources (DER), Energy Efficiency, & Associated Benefits & Impacts to

¹ From TVA’s Draft EA, Section 2.1.1 “Current Wholesale Rate”, “*The current wholesale rate schedule applicable to LPCs involves two components: the first for Standard Service and the second for Non-Standard Service. The costs to provide power to Standard Service and Non-Standard Service customers are different. Standard Service comprises the majority of LPC service and includes LPC sales to residential customers and small commercial and manufacturing customers. Non-Standard Service includes power delivered to large commercial and manufacturing customers with power demands over 5,000 kW and to fewer than 225 customers with contract demands between 1,000 kW and 5,000 kW that are served by LPCs or directly served by TVA under a time of use structure. This LPC-served Non-Standard Service power usage is removed from the LPCs’ total demand and energy and billed separately at the Non-Standard Service wholesale rates. This is designed specifically to recover generation and transmission costs to serve these loads.*”

Adoption of DER & Energy Efficiency Measures; and Document Readability & Transparency of Content & Process. TDEC recommends that TVA consider providing additional analysis and information relating to rate change scenarios and their associated impacts to low-income customers, viability of energy efficiency, and several areas with which, most prominently, residential customers may be impacted. TDEC also recommends that TVA include further investigation of potential environmental impacts that may result from a rate change (specifically Alternatives C and D) in which DER and energy efficiency are dis-incentivized. Finally, TDEC recommends that TVA develop a plain language Executive Summary, so that a more diverse audience may be able to understand TVA proposed rate changes and potential impacts.

Actions considered in detail within the Draft EA include:

- **Alternative A – No Action** – Under the No Action Alternative, TVA would take none of the proposed actions. The currently available wholesale rate schedules would not be changed.
- **Alternative B – Reducing the Wholesale Standard Service Energy Rate by 0.25¢ per kWh and Adding Corresponding Grid Access Charges** – TVA proposes to reduce wholesale Standard Service energy rates and to introduce a wholesale grid access charge that would recover an equivalent amount of revenue. The change would be revenue neutral for TVA and would become effective in October 2018. The proposed wholesale grid access charge would be allocated to each Local Power Company (LPC) based on the LPC’s percentage contribution to the total Standard Service energy usage during a historical baseline period. Under Alternative B, the reduction in energy rates would be 0.25¢ per kWh.²
- **Alternative C – Reducing the Wholesale Standard Service Energy Rate by 1¢ per kWh and Adding Corresponding Grid Access Charge** – Alternative C is similar to Alternative B, except that the reduction in the wholesale Standard Service energy rates that would be implemented would be 1¢ per kWh. TVA would introduce a wholesale grid access charge that would recover an equivalent amount of revenue. As with Alternative B, the changes would become effective in October 2018 and all associated decisions described under Alternative B relating to rate changes and other matters would be implemented.
- **Alternative D – Reducing the Wholesale Standard Service Energy Rate by 2.5¢ per kWh and Adding Corresponding Grid Access Charges** – Under Alternative D, the reduction in wholesale Standard Service energy rates would be 2.5¢ per kWh. As with Alternatives B and C, TVA would introduce a wholesale grid access charge that would recover an equivalent amount of revenue. The changes would be implemented in October 2018; the decisions described under Alternative C relating to rate changes and other matters would be implemented.

TDEC has reviewed the Draft EA and has the following comments regarding the proposed action and its alternatives:

² “TVA further proposes to decrease wholesale time of use (TOU) Service energy rates under rate schedules General Service B, C, and D by \$23 million and to increase wholesale Standard Service rates and large manufacturing service rates approximately 0.3 percent to maintain TVA revenue neutrality.”

Impacts to Customers

- On pages iii and iv the Executive Summary, TVA states, “Under Alternative C and D, for instance, high-usage households would likely see a decrease of more than 1.5 percent in their average monthly bills while low-usage households would likely see a small increase in their average monthly bills. Low-usage households’ monthly bills would increase more than other households as a proportion of household income.” This rate change would penalize those who have made weatherization and/or energy efficiency improvements, whether on their own or through outside assistance, or those whose low-usage is due to lack of funds to pay for increased consumption (i.e., lower-income customers). TDEC recommends that TVA (1) provide more detailed information regarding what steps TVA has taken to evaluate the financial impacts and economic burdens to low-income residents that will result from this increase and (2) explain what, if any, rate-payer funded programming will help ease these impacts and burdens across the TVA service territory in the Final EA. The following may be informative: (1) information and data gathered through the TVA Energy Efficiency Information Exchange (EEIX) over the past few years; (2) information and data gathered regarding the various projects funded through TVA’s Extreme Energy Makeover; and (3) TVA’s collaboration with Tennessee Housing Development Agency (THDA) on the Weatherization Assistance Program (WAP) EZ software platform project.
- On page iv of the Executive Summary, TVA states, “While the exact changes in Standard Service customers’ monthly bills would vary by LPC, TVA projects that the changes would likely be similar across the entire TVA service area. Therefore, no particular minority or other socioeconomic group would bear a disproportionate share of negative effects. None of the alternatives would create environmental justice issues requiring mitigation, as no meaningful environmental or health effects would occur.” What proportion of the population in the TVA service area (preferably by state) that is minority and/or considered below the Federal Poverty Level is projected to experience a rate increase? While the geographic distribution of communities impacted by the proposed rate change may be the entire service area, the actual proportion of the population experiencing disproportionately higher costs would be the segment burdened by the proposal. Therefore, TDEC recommends that TVA consider the demographic composition and economic status of the population expected to experience a rate increase and whether there is any group that will bear a disproportionate share of the impacts, and further, that TVA provide a description of the process used to complete this analysis and the resulting conclusions in the Final EA.
- On page iv of the Executive Summary, TVA states, “Alternatives C and D would likely have the beneficial effect of lowering households’ bills in months of high usage (i.e., summer and winter), therefore helping to stabilize bills from fluctuations due to seasonal variation in weather. This would be more beneficial for low-income households, for whom variations in bills due to season or weather are more likely to cause a problem than for other households.” This analysis is incomplete; TDEC recommends that TVA provide more documentation supporting this argument in the Final EA and how the overall price increase is expected to impact low-income customers.
- The State of Tennessee receives numerous utility bills that would fall under Part A of the Outdoor Lighting Rate Schedule noted in 2.1.3 “Other Matters” on page 11. Other than in this section, this

topic is not covered anywhere else within the document. TDEC recommends that TVA explain in greater detail how Alternatives B, C, and D will impact these non-metered, flat rate fee schedules.

- TDEC recommends that TVA include additional research, discussion, and analysis of the associated indirect impacts to residential customers from any increase in the large general service commercial rates, which will increase annual operating expenses to critical infrastructure such as hospitals, municipal buildings, and water and wastewater treatment plants in the Final EA. For instance, drinking water and wastewater treatment systems account for roughly four percent of energy use in the United States.³ At the local level, almost 35 percent of municipal energy use occurs at water and wastewater treatment plants, as the pumps, motors and other equipment used to treat water often operate around the clock. The high energy intensity of these facilities accounts for 25 to 50 percent of the operating budget for wastewater utilities and 80 percent of the processing and distribution costs for drinking water treatment plants. This increased annual expense may lead to further deferred maintenance to an already strained infrastructure system of pipes and treatment facilities. A 2015 report prepared by a federal interagency working group including the National Science Foundation, U.S. Department of Energy, and U.S. Environmental Protection Agency concluded, “The aging U.S. water infrastructure has reached or is rapidly reaching the end of its expected service life and is estimated to require an investment of about \$600 billion over the next 20 years.”⁴ TDEC encourages TVA to evaluate what a pass through increase to large general service rates will mean for residential consumers’ household expenses.
- TDEC commends TVA for maintaining one of the most reliable transmission and generation systems in the country. However, certain commercial consumers need an extra layer of reliability and resiliency to blackouts; these critical infrastructure facilities include datacenters, water and wastewater treatment plants, emergency operations centers, and hospitals. These facilities already have backup generators and are now, after frequent severe storm events, looking to reinforce their resiliency with additional onsite generation and storage including solar, batteries, and micro combined heat and power (CHP). The economic benefit of a reliable, black-start-capable DER such as CHP or solar-battery systems, often paired with a microgrid, should be considered, evaluated, and even encouraged by TVA. Innovative ownership and funding models have developed around the country whereby utilities or their LPCs partner with customers to own and/or operate microgrid DER. By reducing energy rates and increasing fixed fees, the economics of microgrids and reliability projects become more burdensome for mission-critical customers. TDEC encourages TVA to provide discussion on these points in the Final EA.

Valuation of DER, Energy Efficiency, & Associated Benefits & Impacts to Adoption of DER & Energy Efficiency Measures

- Under 1.1 “Purpose of and Need for Action” on page 1, TVA states, “TVA’s energy prices in the current pricing structure over incentivize consumer installation of distributed energy resources (DER) without a corresponding benefit in reducing TVA’s costs.” Does TVA monetize impacts of pollution associated with different fuel types utilized and try to account for these in its rates?

³ “Energy-Water Nexus: The Water Sector’s Energy Use”, <https://fas.org/sgp/crs/misc/R43200.pdf>

⁴ “Energy-Positive Water Resource Recovery Workshop Report”, https://www.energy.gov/sites/prod/files/2016/01/f28/epwrr_workshop_report.pdf

Representing environmental impacts as a cost or benefit may shift how DER are valued under the TVA rate structure. TDEC recommends TVA provide discussion in the Final EA as to how the environmental costs and benefits of rate changes that slow the reduction of DER incentives are considered and factored into informing the rate change.

- On Page 39, TVA discusses the potential for greenhouse gas (GHG) emission impacts under the various alternatives. According to the analysis of Alternative C, “While an increased fixed cost may influence customers’ investment in on-site energy (if LPCs elect to pass along the rate change to customers), any change in customer use of the energy source would be so small that any associated changes in TVA power generation and any resulting ambient air pollution or GHG levels would not be identifiable (TVA assumes that any additional generation needs would be met by natural gas generation due to its low cost).” However, this analysis does not consider the potential for decreased uptake of energy efficiency in response to rate changes and the lower cost for higher electricity usage rates. TDEC recommends that TVA consider the full picture of DER, energy efficiency, and potential energy usage rates when assessing potential GHG emission changes under Alternative C.
- TDEC recommends TVA further study and report on the impact of GHG emissions from increased DER, particularly solar, under all four alternatives. By reducing energy rates to dis-incentivize DER, TVA will limit or inhibit GHG-reducing projects including solar, CHP, and wind. While the Draft EA states that the resulting change would be “small” or “indiscernible”, no analysis is provided justifying this claim. Increasing interest in on-site generation coupled with rapidly declining costs for these projects could mean that a greater number of projects could be completed if TVA followed Alternative A, thereby reducing GHG emissions in the Valley. TDEC encourages that TVA include these considerations in the Final EA.
- TDEC recommends TVA further evaluate GHG emissions from projected Electric Vehicles (EV) adoption in Valley. While adoption of EVs in the Valley has been slow to date, EVs are predicted to grow quickly starting in 2018-2019 due to the introduction of lower cost vehicles and shifting consumer preferences. By reducing energy rates under Alternative C, TVA may encourage faster adoption of EVs than under alternative A. While this may have positive effects on net overall GHG emissions, it may increase TVA’s load and corresponding GHG emissions. Recent work by the Distributed Generation - Information Exchange (DG-IX) subcommittee for electric vehicles may be helpful.
- The table on page 28 outlines the potential monthly costs of several electricity usage scenarios under Alternative C, TVA’s preferred alternative. Based on these scenarios, the price of electricity per kWh decreases when more energy is used. While lower electricity usage customers may self-mitigate higher costs through adjusting energy usage in response (as is discussed on page 29), this rate structure would incentivize higher energy usage. TDEC encourages TVA to include discussion as to how the proposed rate changes may impact uptake of energy efficiency by residential customers in the Final EA.

Document Readability & Transparency of Content & Process

- TVA rate structure and associated rate change proposals are, by their very nature, complex. TVA notes the potential for more than half of all TVA service area residential customers to experience a rate increase as well as rate impacts to businesses. Given such far reaching impact, TDEC recommends that TVA consider developing a plain language version of the rate change executive summary for the Final EA, such that a diverse audience of Tennesseans can clearly understand the potential for direct rate impacts under the various scenarios.⁵
- Throughout the Executive Summary the abbreviation “DER” is used but is not defined on page i. TDEC recommends that TVA provide an explanation of the abbreviation “DER” as well as a definition in the Executive Summary in the Final EA.
- On pages iii and iv of the Executive Summary, TVA states, “Under Alternative C and D, for instance, high-usage households would likely see a decrease of more than 1.5 percent in their average monthly bills while low-usage households would likely see a small increase in their average monthly bills. Low-usage households’ monthly bills would increase more than other households as a proportion of household income.” TVA does not define low-usage household in the Executive Summary (or elsewhere in the Draft EA), nor does it qualify the statement as to what constitutes a “small” increase. Based on possible monthly rate changes and percent increases outlined in “Table 3: Illustrative Changes in Monthly Standard Service Bills under Alternative C” on page 28, there are a range of scenarios where customers with monthly electricity usage of 1500 kilowatt hours (kWh) and less would possibly experience an increase in their bill greater than the decrease experienced by high-usage households. TDEC recommends that TVA define low-usage household in the document and consider incorporating a more descriptive explanation of projected increases under Alternatives C and D.
- Under 1.2.1 “TVA’s Role in the Power Service Area and Current Relationship to Customers” on page 3, TVA discusses Standard Service sales for TVA fiscal years 2013 through 2017. TDEC recommends TVA include hyperlinks or references within the Final EA to allow review of the supporting data on publically-available websites.
- Pages 8 and 25 of the Draft EA state that the “Under Alternatives B and C, the average consumer would experience a \$1 increase to their monthly electricity bill.” However, the term “average consumer” is never defined in the document. This is additionally complicated by the Table 2 on Page 23 outline “Summary of Socioeconomic Characteristics” which includes a column for “Average Monthly Electricity Use (kWh) for TVA Service Area” which is 1,150 kWh a month. However, Figure 3 on Page 24, “shows the distribution of monthly residential bills in the TVA service area by kWh consumed. Approximately 50 percent of monthly bills do not exceed 1,000 kWh and only 15 percent exceed 2,000 kWh.” TDEC recommends that TVA clearly define what constitutes an “average consumer” in the Final EA.

⁵ The purpose of the Plain Writing Act of 2010 is “to improve the effectiveness and accountability of Federal agencies to the public by promoting clear Government communication that the public can understand and use.”

- In section 3.5.1 “Air Resources” several figures and tables from 2015 documents are referenced regarding carbon dioxide (CO2) emissions but are not contained within the document. For instance, Figures 4-7 and 4-8 of TVA 2015 and Tables 7-1 and 7-2 of TVA’s IRP Supplemental EIS are referenced but not included. TDEC recommends TVA include the Figures and Tables in the Final EA to reduce burden on the reader and increase data transparency.
- Under 2.3.1 “Implementing Guidelines” on page 13, TVA’s Role in the Power Service Area, TVA states that “In lieu of implementing either the default retail rates or the optional retail rates described above, LPCs would be able to propose their own rate structures and retail rate designs, subject to the retail rate review process established by the TVA Board in August 2014.” However, no timeframe is provided for LPC’s to propose their rate structure. Would those be presented in a public forum and/or be open to public comment? Additionally, there are over 150 LPCs throughout TVA’s service area. Do LPC rate structure decisions and processes work similarly for each LPC? TDEC recommends TVA provide additional information regarding this process in the Final EA.

TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives. Please contact me should you have any questions regarding these comments.

Sincerely,



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Commissioner
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cc: Kendra Abkowitz, PhD, Assistant Commissioner, Office of Policy and Sustainable Practices, TDEC
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