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Appendices:

Introduction

The Infrastructure Investment and Jobs Act of 2021 ("IIJA 2021") that was enacted November 15, 2021, contains two new federal standards that must be considered for implementation by all electric utilities with annual retail sales greater than 500 million kilowatt-hours during calendar years 2020 or 2021. Those new standards are in addition to the six standards set forth in the Public Utility Regulatory Policies Act of 1978 ("PURPA"), the four standards contained in the Energy Policy Act of 1992 ("EPAct 1992"), the five standards contained in the Energy Policy Act of 2005 ("EPAct 2005"), and the four standards contained in the Energy Independence and Security Act of 2007 ("EISA 2007"). The relevant sections of IIJA 2021 are shown in Appendix A hereto. IIJA 2021 adds two new Federal standards to PURPA Section 111(d):

(1) Demand-Response Practices, 16 U.S.C. § 2621(d)(20),

(2) Electric Vehicle Charging Programs, 16 U.S.C. § 2621(d)(21).

The requirements of IIJA 2021 do not mandate that the affected electric utilities implement those new standards; instead, PURPA states that "[e]ach state regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility shall consider each standard" and then "make a determination concerning whether or not it is appropriate to implement such standard." 16 U.S.C. 2621(a). Further, "[n]othing in this subsection prohibits any State regulatory authority or nonregulated electric utility from making any determination that it is not appropriate to implement any such standard." Id.

The "baseline years" for the 500 million kilowatt-hour sales applicability threshold are the one and two calendar years prior to calendar year 2022 during which the standards are being considered. Aiken Electric Cooperative, Inc. (the "Cooperative") had annual retail sales of

approximately 900 million kilowatt-hours during calendar year 2020 and 923 million kilowatt-hours during calendar year 2021, both well above the threshold of 500 million kilowatt-hours that identifies which electric utilities must consider implementation of the PURPA standards.

The Cooperative is a nonregulated electric utility, which PURPA defines as "any electric utility other than a State regulated electric utility." 16 U.S.C. § 2602(9). Thus, it is the responsibility of the Cooperative's Board of Trustees ("Board") to make its own independent determination regarding whether to implement each of the new PURPA standards. That determination must follow an appropriate consideration of the standards that includes evidence presented during the course of a public hearing.

The purpose of these initial comments is to contribute to the body of evidence used by the Board to make their determination on each of the two new standards based upon findings that are appropriate for the members of the Cooperative. The federal legislation anticipates that state regulatory authorities and nonregulated electric utilities would need to consider utility-specific conditions and circumstances during their evaluation of the PURPA standards and determine the ability of each utility to accomplish the goals of PURPA via the implementation of the two new PURPA standards. For that reason, with respect to each of the two PURPA standards, the Board may decide to implement the standard as stated in IIJA 2021, implement a modification of the standard, or decline to implement the standard. Subject to the receipt and review of additional evidence, if any, the following comments and recommendations address general considerations regarding each of the two standards and specific issues and circumstances applicable to the Cooperative that the Management and Staff of the Cooperative believe should be a part of the Board's deliberations.

PURPA Goals

The goals of PURPA continue to be the same as those stated in the original Public Utilities Regulatory Policy Act of 1978, that is, to encourage (1) conservation of energy supplied by electric utilities, (2) optimal efficiency of electric utility facilities and resources, and (3) equitable rates for electric consumers. The first goal focuses on retail energy users and promotes conservation by end-use consumers. The second goal applies to electric utilities, their use of energy, and the facilities they utilize to deliver energy. The third goal recognizes the need for proper development and administration of retail rates, providing a check and balance relative to the other two goals, so that the programs, policies, and rates employed by electric utilities to achieve the first two goals reflect their associated costs and are not arbitrary, unfair, or unduly discriminatory.

The Cooperative's Board should make its determination regarding each PURPA standard based on whether, given the Cooperative's particular circumstances, that standard will accomplish any one or more of those three goals, without harming the Cooperative's ability to accomplish the others(s). Thus, if implementation of a standard adversely impacts even one of the three goals, the Cooperative's Board may decline to implement that standard.

Aiken Electric Cooperative, Inc.

The Cooperative has several organizational and operational characteristics that should materially influence the Board's consideration of the PURPA standards. First, the Cooperative is member-owned and thus self-regulated. The Cooperative's members elect the Board that establishes and oversees the Cooperative's policies, rates, service rules, and regulations. Unlike investor-owned electric utilities, the Cooperative has no third-party investors to satisfy. Thus, there is no conflict of interest between the utility's owners and consumers regarding profitability. In fact, the Cooperative is a not-for-profit organization. Revenues collected in excess of operating

expenses (such difference referred to as "margins") are assigned back to the Cooperative's members as capital credits. Under this form of organization, all costs associated with the programs, policies, and rates adopted to implement the PURPA standards will be borne in full by the Cooperative's members.

The Cooperative owns and operates an electric distribution utility. Unlike vertically integrated electric utilities that also own and operate electric generation facilities and transmission lines (together commonly called "bulk power systems"), the Cooperative does not make decisions independently regarding the generation and transmission functions and the related costs incurred to furnish electric energy to the Cooperative's members. Instead, such bulk power system services are planned and coordinated by the Cooperative and 19 other electric distribution cooperatives in South Carolina through a generation and transmission electric cooperative, Central Electric Power Cooperative, Inc. ("Central"). Central is governed by a Board of Trustees comprised of representatives from each of those electric distribution cooperatives. It is through that participation on Central's Board of Trustees, as a "Member" and owner of Central, that the Cooperative has direct input to and an active role in decisions made affecting generation and transmission issues.

Many years ago, the Cooperative and the other Members of Central executed a long-term "all-requirements" wholesale power contract with Central. The term of that contract extends through calendar year 2058. The Cooperative is required by contract to purchase from Central all of the power that it distributes to its member-consumers. As later discussed herein, the Cooperative's status as a Member of Central and its wholesale power contract with Central are significant contributing factors in the Cooperative's consideration of the PURPA standards and impact the Cooperative's ability to implement the standards. Attached hereto in Appendix B are comments prepared by Central that reflect Central's input regarding the Cooperative's

consideration of the two PURPA standards in IIJA 2021. Additional references to Central's comments contained in Appendix B are made herein, where appropriate.

Demand-Response Practices Standard

The first of the two new PURPA standards that the Cooperative's Board must decide whether to implement is the Demand-Response Practices standard, which states:

> (A) In general. Each electric utility shall promote the use of demand-response and demand flexibility practices by commercial, residential, and industrial consumers to reduce electricity consumption during periods of unusually high demand.
> (B) Rate recovery.
> (i) In general. Each State regulatory authority shall consider establishing rate mechanisms allowing an electric utility with respect to which the State regulatory authority has ratemaking authority to timely recover the costs of promoting demand-response and demand flexibility practices in accordance with subparagraph (A).
> (ii) Nonregulated electric utilities. A nonregulated electric utility may establish rate mechanisms for the timely recovery of the costs of promoting demand-response and demand flexibility practices in accordance with subparagraph (A).

16 U.S.C. § 2621(d)(20).

The Board should view Part (A) of this PURPA standard in the context of the role it plays in Central's Integrated Resource Planning ("IRP") activities. The IRP process consists of several steps, starting with identification of basic objectives such as reliability of service, quality of service, and meeting peak demand requirements. Next, historical and current data are collected to examine the electric system's load patterns and trends. Based on that information and other data such as econometrics, demographics, and appliance saturation, a demand forecast is prepared to determine the current and future power requirements. To meet those forecasted power requirements, the IRP process considers and evaluates the utilization and management of two types of resources generally categorized as supply-side and demand-side.

Supply-side resources for Central and its Members primarily consist of contracts to purchase power from wholesale power suppliers, including renewable resources. Demand-side resources for Central and its Members include active load management of customer appliances, consumer and Member-owned distributed generation, passive load management via time-of-use rates, and energy efficiency and conservation programs.

Demand-response and demand flexibility practices by consumers are facets of demand-side management. Electric utilities nationally and the Cooperative have promoted *demand-response practices* for many years, including the examples of both active and passive load management of consumers' electric loads just described. According to the US Department of Energy, Office of Electricity, demand-response measures reduce or shift electricity usage during peak periods in response to time-based pricing or other forms of financial incentives. By comparison, *demand flexibility practices* are relatively new and, as described by the Alliance to Save Energy, focus on "[t]he use of communication and control technologies to shift electricity use across time of day while maintaining (in some cases improving) the quality and value of end-use services." In that regard, according to The Brattle Group, demand flexibility includes demand-response, but "also more broadly includes new opportunities for managing load to provide a wider range of grid services following the rapid emergence of consumer-oriented energy technologies such as AMI, smart appliances, electric vehicles, behind-the-meter battery storage, behavioral tools, and automated load control for large buildings."

The PURPA standard specifies promoting practices by commercial, residential, and industrial consumers to reduce electricity consumption during periods of unusually high demand, which the Cooperative is actively doing through several long-standing programs:

- A time-of-use rate option is offered to the Cooperative's residential consumers under Schedule R-TOU. The base rate Energy Charge for electricity consumption during

defined off-peak periods is 75% lower than the base rate energy charge applied to electricity consumption during defined on-peak periods for the months of June through September, and 70% lower for the months of October through May. These time-based rates encourage a reduction in electricity consumption during the peak periods. The Cooperative's ability to offer this time-based rate alternative is due in part to Central's wholesale rate structure that bills more than 40% of the Cooperative's wholesale power cost on coincident peak demand charges.

- A "Smart Thermostat" program is being promoted to residential consumers to help them manage their energy use and reduce load on the electric grid at times of peak use. Participants receive a free smart thermostat and installation in return for permitting the Cooperative to control the thermostat during peak periods.
- The "H2O SelectPlus2" provides cash incentives to residential consumers for installing a timer (load control switch) that turns off a 50-gallon or 80-gallon electric water heater during periods of system peak demand, specifically from 6:00 a.m. to 11:00 a.m. in winter months and from 1:00 p.m. to 9:00 p.m. in summer months. Participants receive either a new high-efficient water heater or a $200 cash payment, and a $2.50 monthly bill credit for 10 years.
- Under the Cooperative's "Beat The Peak" program, consumers elect to receive notices of peak load periods so they can voluntarily reduce their electricity consumption during those periods.
- A time-of-use rate option is offered to irrigation consumers under Schedule IST (though it was recently closed to new accounts). The base rate Energy Charge for off-peak electricity consumption during defined off-peak periods is 64% lower than the base rate Energy Charge applied to electricity consumption during defined on-peak periods, to encourage a reduction in electricity consumption during those peak periods.
- Commercial and industrial consumers that meet certain load size criteria can receive demand-response price signals under the Cooperative's Schedules ISD and IST-2 that contain a "Wholesale Power Cost" rate component that includes coincident peak demand rates that promote and reward reductions in the consumer's capacity and energy consumption during periods when Central's monthly system peaks occur.

Additionally, the Cooperative uses a wide range of ways to educate their members on the benefits of energy efficiency, which, in turn, promotes reductions in energy consumption during periods of unusually high demand. For example, the "Help My House" item on the Cooperative's website promotes free home energy audits and low-interest loans for energy efficient measures. The "Home Energy Savings" item on the website presents 101 Energy Tips regarding heating, cooling, cooking, and lighting. The "Together We Save" item on the website includes a link to

Touchstone Energy's website that contains energy savings brochures, articles, and videos regarding energy efficiency.

Subpart (ii) is the portion of Part (B) of the Demand-Response Practices standard that applies to the Cooperative. It permits the establishment of "rate mechanisms" that provide the "timely recovery" of costs for promoting the practices described in Part (A). Rate mechanisms can take many forms, including base rates, fees, surcharges, discounts, riders, cost adjustment factors, and so on. The form of the rate mechanism for timely cost recovery will vary depending on the practice being promoted. It should not unreasonably hinder the intended response from the consumer, but it should reflect proper price signals that are aligned with costs, particularly Central's wholesale power costs. If these tenets are followed, along with the other generally accepted principles of retail ratemaking, then demand-response and demand flexibility practices can be promoted in a way that benefits the consumers participating in those practices, while not adversely impacting (and perhaps even benefiting) the non-participants.

Impact on PURPA Goals

Regarding the three stated goals of PURPA, and in particular as to their application to the Cooperative, Part (A) of the Demand-Response Practices standard is consistent with accomplishing the first two goals of conservation of energy and efficient use of facilities and resources, and Part (B) is consistent with accomplishing the third goal of equitable rates. Furthermore, neither Part (A) nor Part (B) adversely impacts any of the three PURPA goals, and there are no known inconsistencies between that standard and State law.

Summary

In light of the Cooperative's current and planned demand-response and demand flexibility programs, coupled with the Cooperative's continued participation in Central's demand-response

and demand flexibility programs, the Board should find in its determination of the Demand-Response Practices standard that the Cooperative, to the extent it is able to do so as an electric distribution utility and Member of Central, has already adopted programs that promote demand-response and demand flexibility practices by commercial, residential, and industrial consumers to reduce electricity consumption during periods of unusually high demand; and further, that the Cooperative will continue to evaluate its current programs and opportunities for other programs in the future to ensure that demand-response practices provide benefits to the Cooperative and its members. The Board should adopt a finding to that effect.

Electric Vehicle Charging Programs Standard

The second of the two new PURPA standards that the Cooperative's Board must decide whether to implement is the Electric Vehicle Charging Programs standard, which states:

> Each State shall consider measures to promote greater electrification of the transportation sector, including the establishment of rates that—
>
> (A) promote affordable and equitable electric vehicle charging options for residential, commercial, and public electric vehicle charging infrastructure;
>
> (B) improve the customer experience associated with electric vehicle charging, including by reducing charging times for light-, medium-, and heavy-duty vehicles;
>
> (C) accelerate third-party investment in electric vehicle charging for light-, medium-, and heavy- duty vehicles; and
>
> (D) appropriately recover the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure.
>
> 16 U.S.C. § 2621(d)(21).

Notwithstanding the specific wording that directs each "State" rather than each *utility* to consider the standard, the Cooperative is including this standard in its IIJA 2021 PURPA compliance process, with the caveat that the Cooperative's ability to implement this standard is limited to its own electric distribution system grid and service area.

To consider this standard, the Board must understand what is meant by "electrification of the transportation sector." "Electrification" in general is the switching (entirely or in part) from technologies that use fossil fuels to those that use electricity with the primary goal of reducing greenhouse gas ("GHG") emissions. In regard to the transportation sector, electrification includes replacing fossil fuels with electricity as the means of powering light-, medium-, and heavy-duty vehicles. Electrification of the transportation sector may also provide benefits to electric utilities by improving electric grid stability and providing opportunities for demand flexibility.

Unlike the first PURPA standard addressed in these Initial Comments that specifies action ("shall promote"), this standard is more passive ("consider measures to promote") in its implementation. Perhaps the standard's wording is intended to reflect the uncertain and fast-evolving nature of the electrification of the transportation sector, such that if adopted, this standard could mean an ongoing, or periodic, effort to "consider measures." In that regard, the Cooperative's Board could make a determination to implement the second PURPA standard and then, after considering several measures to promote greater electrification of the transportation sector, decide only certain of the measures are feasible at the present time.

There are many types of "measures" that could be considered, including consumer education (website, presentations, demonstrations), participation in activities as a Member of Central (programs, feasibility studies), partnerships with third parties (businesses, dealerships), incentives (rebates, loans), and as identified in the standard, rates. Since Parts (A) through (D) pertain specifically to the establishment of rates, the following comments will mostly address that measure. It should be noted that the standard contains several broad terms that may lead to conflicting, or at least competing, objectives. For example, the term "affordable" in Part (A) implies a focus on consumers' ability to pay regardless of the utility's cost of service, whereas the

direction in Part (D) to "appropriately recover the marginal costs of delivering electricity" recognizes the importance of the utility recovering the cost to provide service. Thus, implementation of the standard might necessitate establishment of priorities for the various objectives therein.

Part (A): Promote affordable and equitable electric vehicle charging options for residential, commercial, and public electric vehicle charging infrastructure.

Part (A) contains the dual objectives of promoting affordable and equitable options for electric vehicle charging. These objectives emphasize making electric vehicle charging available throughout the Cooperative's service area by employing rates that do not deter consumers from acquiring and operating electric vehicles. Obviously, simply establishing lower rates will promote affordability. To also be equitable, however, rates must still appropriately recover costs, as noted in Part (D) of this PURPA standard.

The dual objectives can be attained by establishing rates that encourage the use of electric service for electric vehicle charging in a manner that is beneficial to both the consumer and the Cooperative. Central's wholesale rate structure that includes coincident peak billing demand charges and time-differentiated energy charges provides opportunities to its Members for the establishment of lower retail rates for energy sold to their consumers during off-peak periods. This time-of-use pricing is particularly applicable to residential consumers since most electric vehicle charging occurs at homes during the evening hours.

Time-of-use pricing in the Cooperative's Schedule R-TOU promotes charging options for residential consumers, specifically the base rate Energy Charge during the off-peak periods that promotes affordable and equitable electric vehicle charging options for residential vehicle charging infrastructure.

The Cooperative's rate offerings to larger commercial (general service) and industrial consumers include rate schedules that contain on-peak or coincident peak demand charges that provide consumers with opportunities for more affordable electric vehicle charging if that charging can be managed. Even the Cooperative's rate schedules that do not contain time-based demand or energy charges applicable to commercial and industrial consumers nonetheless do utilize demand charges based on the consumer's monthly peak load. Since those demand charges recover a portion of the cost of service to the consumer, the energy charges are lower than they would be without the use of demand charges. The lower energy charges promote affordable and equitable electric vehicle charging options for large commercial consumers able to charge their vehicles at times other than when their own monthly peak load occurs.

Establishing affordable and equitable rates for public electric vehicle charging infrastructure is more difficult because the power requirements are greater and the energy consumption characteristics are difficult to predict. In particular, electric vehicle fast charging stations typically have a high peak demand that requires a significant electric facilities investment but a low energy consumption due to infrequent use. Further, that infrequent use might occur during high cost peak periods. Those electric load characteristics create a high marginal cost of electric service delivery that challenges the establishment of affordable rates for electric vehicle fast charging stations that are also equitable in terms of cost recovery.

Part (B): Improve the customer experience associated with electric vehicle charging, including by reducing charging times for light-, medium-, and heavy-duty vehicles.

Consideration of Part (B) of the standard must begin with recognizing some of the significant aspects of the present customer experience associated with electric vehicle charging, including the cost of charging, managing charging, range anxiety, and charging time. The

Cooperative's role with respect to charging cost and management were addressed above in Part (A).

The Cooperative is currently improving the customer experience associated with electric vehicle charging via a link on its website to Touchstone Energy's "Electric Vehicle Car Club", which provides a wide range of information on electric vehicles, including an overview of electric vehicles, charging at home or workplace, range anxiety, battery life, and bidirectional charging.

Part (C): Accelerate third party investment in electric vehicle charging for light-, medium-, and heavy-duty vehicles.

Through its memberships in the Electric Cooperatives of South Carolina, Inc. ("ECSC") and Central, the Cooperative is participating in Docket No. 2023-121-E before the Public Service Commission of South Carolina regarding the "Identification of Regulatory Challenges and Opportunities Associated With Electrification of Transportation Sector Pursuant to S.C. Code Ann. Section 58-27-265". ECSC and Central submitted joint comments in that proceeding earlier this year that mentioned the evolving and somewhat uncertain electric vehicle landscape, the unique challenges from the electric vehicle sector faced by electric cooperatives, the potential impact that the heavy demands of commercial electric vehicle charging facilities can have on the utility's infrastructure, and that electric cooperative consumers should not be made to subsidize the cost of developing electric vehicle charging infrastructure.

Part (D): Appropriately recover the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure.

This final part of the standard provides a safeguard to ensure the rates established to meet the objectives of the other three parts are sustainable and do not result in adverse financial impacts. The *marginal* costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure might be higher or lower than the *embedded* costs that electric rates are typically

designed to recover. That is why any retail rates established by the Cooperative to promote greater electrification should contain charges that are reasonably aligned with Central's wholesale rates and will recover distribution system costs based on the estimated load characteristics. It should be acknowledged that in some cases appropriate recovery of marginal costs may result in rates that lessen to some extent the affordability of electric vehicle charging and hamper the acceleration of third-party investment in electric vehicle charging.

Impact on PURPA Goals

The Electric Vehicle Charging Programs standard that aims to "promote greater electrification of the transportation sector" does not specifically meet the first stated goal of PURPA, which is to encourage "conservation of energy supplied by electric utilities". However, "electrification" views energy conservation from a broader perspective than merely reduced kilowatt-hours supplied by electric utilities. According to the Electric Power Research Institute, "economy-wide electrification leads to a reduction in energy consumption, spurs steady growth in the electric load, and reduces greenhouse gas (GHG) emissions — even in scenarios with no assumed climate policy." Thus, given the many benefits of electrification, the Board's consideration of this standard may include looking beyond the strict meaning of the first goal stated in the original Public Utilities Regulatory Policy Act of 1978.

PURPA's second goal of optimal efficiency of electric utility facilities and resources can be achieved by the Electric Vehicle Charging Programs standard if the measures are considered and implemented with that goal in mind, and not forsaking that goal when addressing specific objectives stated in the standard such as improving the customer experience associated with electric vehicle charging and accelerating third-party investment in electric vehicle charging. Electric utilities have an opportunity to influence how the growing and evolving power

requirements of electric vehicles can be met in ways that make more efficient use of electric utility facilities and resources. For example, the efficiency of existing facilities and resources can be enhanced by measures promoting electric vehicle charging that is controlled during peak periods or encouraged during off-peak periods.

The third PURPA goal of equitable rates for electric consumers is contemplated by Part (D) of the standard that states the rates used to promote greater electrification of the transportation sector should appropriately recover marginal costs. This facet of the standard is important in two respects. First, rates that recover marginal costs provide reasonable and meaningful price signals to influence consumer behavior in ways that support the first two PURPA goals. Secondly, recovery of marginal costs precludes the measures implemented to promote greater electrification of the transportation sector from being subsidized by utility consumers through rates that are thereby inequitable.

Summary

The Cooperative has already considered and implemented measures to promote greater electrification of the transportation sector in their service area. Going forward, adoption of the Electric Vehicle Charging Programs standard does not require a specific action by the Cooperative's Board, other than to *consider measures* to promote greater electrification of the transportation sector. Such potential measures as the Board deems worthy of consideration may take many forms, including the application of rates that appropriately recover marginal costs. The Cooperative will continue to evaluate its current programs and consider opportunities for future electric vehicle charging programs that promote greater electrification of the transportation sector, while implementing such measures subject to the recovery of the marginal costs of delivering

electricity to electric vehicles and electric vehicle infrastructure. The Board should adopt a finding to that effect.

Conclusion

Based on the foregoing, the Cooperative's Board should consider taking the following action on the two new PURPA standards set forth in IIJA 2021:

Demand-Response Practices Standard—The Board should find in its determination of the Demand-Response Practices standard that the Cooperative has implemented this standard, to the extent it is able to do so as an electric distribution utility and Member of Central, and has already adopted programs that promote demand-response and demand flexibility practices by commercial, residential, and industrial consumers to reduce electricity consumption during periods of unusually high demand.

Electric Vehicle Charging Programs Standard—The Board should find in its determination of the Electric Vehicle Charging Programs standard that the Cooperative has implemented this standard, to the extent it is able to do so as an electric distribution utility and Member of Central, and that the Cooperative will continue to consider evaluating additional measures regarding this PURPA standard, subject to such measures appropriately recovering the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure.