



ARMADA POWER COMMENTS TO INDIANA UTILITY REGULATORY COMMISSION REGARDING IMPLEMENTATION OF FERC ORDER 2222

Submitted March 31, 2023

Armada appreciates this opportunity to participate in the Indiana Utility Regulatory Commission's (IURC) request for comments on the implementation of Federal Energy Regulatory Commission Order 2222 (FERC Order 2222). As an industry stakeholder with experience on this topic, Armada Power submits the following comments:

On December 1, 2022, the IURC began this stakeholder process with a presentation from FERC titled *Overview of Order No. 2222 Participation of Distributed Energy Resource Aggregations in Markets Operated by RTOs and ISOs* (presented by Joseph Baumann and David Kathan). In the presentation, FERC provided the definition of Distributed Energy Resource (DER) as follows:

“any resource located on the distribution system, any subsystem thereof, or behind a customer meter.”

– These resources may include, but are not limited to, resources that are in front of and behind the customer meter, electric storage resources, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment.

The presentation clearly stated that this definition is “technology-neutral, thereby ensuring that any resource that is technically capable of providing wholesale services through aggregation is eligible to do so” and goes on to define a DER aggregator as “the entity that aggregates one or more DERs for purposes of participation in the capacity, energy and/or ancillary service markets of the RTOs and/or ISOs.” The final point listed in the presentation defining DERs states that “The DER aggregator is the RTO/ISO market participant, not the DER.”

Armada Power, LLC (“Armada”) is a U.S.-based company that develops and manufactures control devices to be installed on any electric resistance water heater and operates in concurrence with the FERC definition of DERs.

Armada's behind-the-customer meter thermal storage demand response devices are manufactured in the United States, and the hardware and software provide a two-way millisecond shift of the aggregated load of residential water heaters to respond to distribution grid reliability requirements. This response capability includes but is not limited to advanced sub-second demand shifting multiple times a day, firm load response to renewable generation, cold load pick-up, and frequency response.

Armada can aggregate residential water heaters to respond to the needs of the grid in a measurable manner meeting the definition and requirements of FERC Order No. 2022. Each individual device has proven, through our deployments in PJM and southern state programs, to shift on average 1 kW, and has been lab-rated to a maximum of 5.5 kW. To meet the minimum requirements of 100 kW, Armada forms partnerships with multifamily property owners.

As a behind-the-meter resource, Armada's comments will focus on the requirements of types of resources that are not traditional generation with interconnection direct to the grid but do impact use on the grid. Armada supports comments from the distribution utilities and agrees that the utility plays a core role in ensuring aggregations are reliable and supports using the aggregation as a resource for additional uses such as resiliency, monitoring impacts or planning improvements to the distribution utility grid.

Armada's hardware includes revenue-grade metering and the ability to test to market standards. While the utility meter can be used for aggregation at the residential level, demand reads often require device-level metering. To that end, we agree with the February 2, 2023 comments submitted by the Indiana Michigan Power Company stating "...establishing a state-approved list of customer-required DER equipment and technical attributes could significantly accelerate the DER interconnection process on distribution systems throughout the state." Ensuring that technologies can meet the DER standard of 100 kW through either a state certification or regular testing to meet a state-approved list would add further consumer protections because there is not currently an EnergyStar-type of certification for demand control devices.

Armada Power encourages the IURC to expeditiously implement FERC Order 2222 with residential aggregated demand response participation and open access and not just for commercial customers with a single utility account such as large commercial and industrial customers. In addition, residential consideration should incorporate all forms including allowing small commercial locations with individually metered offices and multifamily property owners the option to aggregate their tenants' utility account load with an aggregator.

Opening an equitable and easier path to participation for these commercial customers opens opportunities for them to invest in their own technology installations and receive market revenue to offset the costs. This advances the availability of consistent load control. The deployment of load control technology by property owners, when combined with a utility load control option as noted later, reduces deployment cost to the utility and adds critical distribution system benefits.

Aggregators of retail customers already play an important role in most organized energy markets in the United States. By utilizing ancillary services such as demand response, aggregators provide the grid services needed to cost-effectively maintain system balance as more intermittent resources are added to the grid.

At multifamily properties, the benefits of aggregation are easy to discern. Multifamily properties are commercial properties where property owners can educate and enroll their residents in a myriad of demand response programs at lease signing. The aggregated units instantly become a valuable grid asset while providing residents with lower monthly energy bills and demand charges on day one.

The aggregation of devices and energy storage systems for demand response is clearly the future of the power grid. FERC Order 2222 requires that each Regional Transmission Organization (RTO) and/or Independent System Operator (ISO) develop market participation constructs that compensate demand response and distributed energy resources for the grid services they provide.

As part of the implementation, IURC should consider tariffs that allow third-party aggregators to participate in demand response programs. However, Armada would like to be clear that this should not be interpreted to prevent a utility-offered program. Rather, it should be an additional option regulated in a similar way to California Rule 32.

California Rule 32 allows a customer to choose to participate in either a utility or aggregator program. Aggregators under California Rule 32 are licensed by the California commission and subject to specific performance and credit requirements. In return, the utility provides the information directly to the ISO. The utility remains the meter data management agent, and as such, holds the customer information in its protected platform.

Armada recommends that tariffs include the following:

1. Ways in which a customer or their technology enrolled with an aggregator may be compensated to give the utility first right to call upon a customer/customer's technology for local distribution grid services when it is not in conflict with a MISO program.

Not all distribution level peaks necessarily align with the MISO peak. Extreme weather events or voltage concerns or even cold load pickup after a localized outage are examples where the distribution utility may have a need to curtail load outside of a MISO program. The Commission should consider tariff programs where a customer may opt-in with the utility to receive a bill credit or incentive during a distribution level need but would not create a 'double dip' with the wholesale market.

The ability to use aggregators and receive market revenue will increase customer investment in technologies that can support and enhance the grid. Armada encourages the Commission to provide for the maximum benefits of technologies by offering not only an aggregator option but also allowing the utility to pay for a load control option for its local grid.

Armada recommends that the utility load control option tariff allow a customer to consent to their technology provider (which must be on the certified list as proposed by Indiana Michigan Power) to receive local distribution grid calls either directly or through a designated utility platform. Compensation may work in one of two ways: the technology provider would be

compensated by the utility for MW provided and compensate the customer in a private agreement. Or the utility provides direct compensation to the customer as a bill credit.

2. The tariff must require clear and simple enrollment criteria to prevent customer confusion. Use of a commission-approved enrollment form and a utility portal by the customer for enrollment offers a simple process. A customer should not have to pull all

their load and usage history for enrollment, but rather consent and allow the utility to provide the necessary data to the ISO. This retains the utility as the platform and control source for customer data and information to licensed aggregators and the PJM or MISO markets.

3. Programs must recognize the different types of commercial activity and expand access for rental households by allowing aggregation of residents at a multifamily premise by the property owner. Design a multifamily tariff where residents can choose to enroll or opt-out when they lease the rental unit. As explained below, this program will incentivize property owners to provide access to technologies and provide renters incentives up front without disruption due to move-in/move-out timing.

It is important that the IURC consider renter households in multifamily communities when establishing DER programs because residential tariff programs are typically aimed at account holders who own their homes. This ignores customers who lease apartments and can't install metered devices or control what goes into the property. Skipping over multifamily properties and directing efforts toward account holders who own homes hinders multifamily owners from installing devices that can be aggregated into their rental units because the economic incentives flow only to the resident.

While a premise may remain energized and available to the grid, programs that rely on individual utility account information to be provided by a resident rather than premise and lease permission result in limited capabilities due to the move-in/move-out effect. The move-in/move-out effect occurs when a reliable source of load and demand is technologically available however the account number may be lost due to: the resident moving out or lengthy delays for a resident to receive the information needed to sign up the new accounts when the unit turns over. There is a delay between when a resident's power account is turned on with their local distribution utility and when they receive their bill with the required account information for enrollment. This delay could lag the customer enrollment in a program by 1-3 months or more. Not to mention any other related administrative and enrollment burdens. All of these factors result in unreliable load control due to administration and not technology or connectivity.

Given that a multifamily property can achieve aggregated load control in megawatts, properly designed tariffs that use premise-based enrollments can bridge the incentive gap between the property owner and resident thereby achieving greater participation and available load certainty. Residents who rent their homes can be enrolled by the property owner based on consent at lease signing and are retained by premise address in a program rather than the resident's utility account. This not only helps close the incentive gap between property owners and residents but also ensures a reliable source of load control with limited to no disruption.

Armada believes that aggregators should be verified and certified.

The IURC should consider whether additional requirements or licensing is required to ensure that a third-party aggregator has the operational capabilities to meet the required tariffs and programs. For example, California Rule 32 has both a Commission licensing requirement and performance bond requirements.

However, it must be made clear that the technology providers are not the aggregators.

Respectfully submitted March 31, 2023,

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