

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Ohio  
Edison Company, The Cleveland  
Electric Illuminating Company, and The  
Toledo Edison Company for Authority  
to Provide for a Standard Service Offer  
Pursuant to R.C. 4928.143 in the Form  
of an Electric Security Plan )  
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Case No. 23-301-EL-SSO

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**DIRECT TESTIMONY OF KATHLEEN M. MCMANUS**

**ON BEHALF OF**

**ARMADA POWER, LLC**

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**October 13, 2023**

1                   **I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

2   **Q.1   Please state your name and business address.**

3   **A.1**   My name is Kathleen McManus. My business address is 230 West St., Ste. 150,  
4           Columbus, OH 43215, where serve as Government and Regulatory Affairs Specialist  
5           representing Armada Power, LLC.

6   **Q.2   On whose behalf are you testifying?**

7   **A.2**   I am testifying on behalf of Armada Power, LLC. (“Armada Power”).

8   **Q.3   Please describe your job responsibilities.**

9   **A.3**   As Government and Regulatory Affairs Specialist, I engage with regulators, legislators  
10          and industry leaders across the United States on behalf of Armada Power to promote the  
11          development of programs and policies to expand access to beneficial demand response  
12          programs with a focus on residential customers.

13   **Q.4   Please describe your relevant experience and educational background.**

14   **A.4**   I graduated from The Ohio State University with a Bachelor of Science degree in  
15          Industrial and Systems Engineering in 2014 and Capital University Law School with a  
16          Juris Doctor in 2022. I joined Armada Power in my current position in February of 2021.  
17          Previously, I worked in business process improvement with J.P. Morgan Chase & Co.,  
18          identifying areas for improvement and managing projects to implement necessary  
19          changes for process efficiency and improved client experience. Since joining Armada  
20          Power, I have worked with various state, federal and industry stakeholders to develop  
21          residential demand management programs and develop policies which encourage  
22          technology neutral solutions.

1 **Q.5 Have you previously testified before the Public Utilities Commission of Ohio (“the**  
2 **Commission”)?**

3 **A.5** No.

4 **Q.6 Please describe Armada Power.**

5 **A.6** Armada Power creates technology solutions for demand management. Armada Power is  
6 headquartered in Columbus, Ohio and manufactured in Solon, Ohio. Armada Power’s  
7 main product is a secure and high-tech water heater controller which can be retrofitted on  
8 to any electric resistance water heater to manage charging and provide load shifting. The  
9 Armada Power software platform transforms thousands of grid-connected water heaters  
10 into flexible energy storage-type devices for the power grid while minimizing the comfort  
11 impact to the water heater user.

12 **Q.7 How does Armada Power support residential based demand response programs?**

13 **A.7** Armada Power’s technology is designed specifically for residential customers to  
14 participate in demand response programs. Armada Power believes there should be  
15 residential demand response programs which promote reliability and help reduce outage  
16 duration and frequency. Programs which help manage when and how residential energy  
17 is consumed will help to reduce the overall load on the grid which will help the whole  
18 electric grid and reduce demand costs for all customers, providing qualitative  
19 improvements for grid reliability and grid modernization<sup>1</sup>.

20 **II. PURPOSE OF TESTIMONY AND SUMMARY OF RECOMMENDATIONS**

21 **Q.8 What is the purpose of your testimony?**

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<sup>1</sup> An application for an ESP shall include “A description of the benefits of the infrastructure modernization plan (in total and by activity or type), including but not limited to the following as they may apply to the plan: quantitative and qualitative impacts of all reliability improvements.” See Ohio Administrative Code 4901:1-35-03(C)(9)(g)(ii).

1   **A.8**   The purpose of my testimony is to address the proposed energy efficiency and peak  
2           demand reduction programs (“EE/PDR”) for Ohio Edison Company, The Cleveland  
3           Electric Illuminating Company, and The Toledo Edison Company (collectively, “First  
4           Energy” or “the Companies”). My testimony will address recommended changes to the  
5           Load Control Demand Response Program, as well as an additional data sharing program  
6           to facilitate residential customer participation in PJM markets.

7   **Q.9   Did First Energy Propose a Residential Demand Response Program**

8   **A.9**   Yes, First Energy proposes a Demand Response for Residential program with two  
9           components: (1) Behavioral Demand Response, and (2) Load Control Demand Response.  
10          Under the Behavioral Demand Response component, only Advanced Metering  
11          Infrastructure (“AMI”) customers will be eligible to participate. As of August 8, 2022,  
12          First Energy deployed 706,545 advanced meters as part of planned AMI installation.  
13          Customers choosing to participate in the Behavioral Demand Response program will  
14          receive day ahead notification of potential peak demand days and will be encouraged  
15          through messaging to reduce their demand during the peak demand periods. The  
16          Behavioral Demand Response program does not have financial incentives to participate.  
17          The Load Control Demand Response program is open to all customers with program  
18          eligible connected devices and does not require AMI customers. Participants of the Load  
19          Control Demand Response programs agree to allow a vendor selected by the Companies  
20          to control, cycle and/or optimize the use of their air conditioner or potentially other  
21          equipment through a program eligible connected device<sup>2</sup>.

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<sup>2</sup> Direct Testimony of Edward C. Miller, on behalf of Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company, p.19, line 20.

**Q.10 Does Armada Power agree with the proposed Demand Response for Residential program design?**

**A.10** No, Armada does not agree with the proposed Demand Response for Residential program design as it restricts participation and ignores the nearing implementation of FERC Order No. 2222. The Load Control Demand Response program under Demand Response for Residential program restricts participation based on the type of device allowed to participate in the program. The Load Control Demand Response program is a “bring-your-own-device” program, customers wishing to participate in the program should be allowed to participate with any demand control capable device. Additionally, FirstEnergy should through this ESP begin the process to offer data necessary for customers to participate in PJM’s compliance with FERC Order No. 2222. PJM Interconnection has requested a February 2026 implementation of PJM’s tariff to comply with FERC Order No. 2222, which enables smaller distributed energy resources (“DER”), like demand response technologies, to aggregate and participate in RTO/ISO electricity markets. Effective compliance with FERC Order No. 2222 requires coordination with distribution utilities to ensure Distributed Energy Resource (“DER”) aggregations maintain safe and reliable operations of the distribution system. Some of these coordination efforts include verification of the resource’s information.

**Q.11 Please summarize Armada Power’s recommendations to the Commission.**

**A.11** Armada Power’s recommendations are as follows:

1. The Load Control Demand Response program should be technology neutral and allow participants to enroll a demand capable device beyond smart thermostats and EV charging equipment, the ability for a customer to participate should be based on device

1 capabilities to ensure program success and efficiency due to the numerous and diverse  
2 options to participate.

3 2. The Companies should develop a secure data sharing program to facilitate the  
4 aggregation of residential customer participation in PJM markets, whereby upon  
5 receiving all necessary customer consent, the Companies will provide, without additional  
6 cost, CRES providers and DER aggregators available customer data to allow them to  
7 enroll residential accounts to participate in the PJM ancillary services market, including  
8 but not limited to the customer's peak load contribution.

9 **Q.12 What is the difference between a CRES Provider and a DER Aggregator?**

10 **A.12** A Competitive Retail Electric Service Provider ("CRES Provider") is a retail electric  
11 service provider, certified by the Public Utilities Commission of Ohio and competes for  
12 business by offering alternative competitive prices, renewable energy option and other  
13 incentives. These service providers may also be referred to as "aggregators" when  
14 certified by the commission and "contracts and combine customers' electric load for the  
15 purpose purchasing retail electric generation service on an aggregated basis." Ohio  
16 Administrative Code 4901:1-21-01. A DER aggregator is an entity who participates in  
17 PJM's energy, capacity, and/or ancillary services markets using DER Aggregation  
18 Resources, which is comprised of one or more Component DER. A Component DER is  
19 "any resource, within the PJM Region, that is located on a distribution system, any  
20 subsystem thereof, or behind a customer meter..."<sup>3</sup> So a DER Aggregator is an entity that  
21 aggregates DER resources for purpose of participating in PJM's energy, capacity, and/or  
22 ancillary services markets.

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<sup>3</sup> PJM, Intra-PJM Tariffs, OATT, Definitions A-B (17.0.0).

**Q.13 Why does Armada Power recommend removing specifically named technologies in the Load Control Demand Response program?**

**A.13** Opening the Load Control Demand Response program to allow for any demand control in-home technology to qualify expands participation and increases controllable demand. Armada Power provides multiple benefits for the success of the Demand Response for Residential programs, including greater participation and more controllable load. Demand capable water heaters, and water heater controllers provide approximately 1kW of callable load with negligible impact to a customer's comfort or behavior, different technologies with different characteristics provide more customers with the ability to participate, providing greater grid benefits and reliability. As written, FirstEnergy's proposal both excludes an Ohio manufactured technology and loses the non-invasive but large demand control of a water heater. Further, a bring-your-own-device program should not limit participation based on the technology type, but strictly the capabilities of the device, particularly when technology capabilities are changing rapidly.

**Q.14 Why does Armada Power recommend a data sharing program for residential customers?**

**A.14** The PJM energy and capacity markets provide the potential for additional incentives for all customers to install demand capable technologies within their residence. However, the data required to enroll customers wishing to participate in the PJM markets is often a burden. PJM's current enrollment information, which was affirmed to continue in the latest compliance filing, is: (1) Retail account number, (2) Premise address, (3) Customer's PLC or at least the customer data needed to calculate a PLC (Customer's demand during the 5 PJM Coincident Peak Hours, (4) Line loss factors for the customer,

(5) Winter Peak Load data – which comes from two winters in the past. Residential customers must participate through an aggregator such as curtailment service provider (“CSP”) due to participation thresholds, so the residential customer will have to request their data from the distribution utility, to provide to the CSP, to provide to PJM. Under this data sharing program, rather than a customer having to request the data from First Energy to then provide to a DER aggregator<sup>4</sup>, or PJM, a customer consents to share their data to participate in a DER aggregation and First Energy send that data directly and securely to the DER aggregator and PJM. Further, this data sharing prepares First Energy for compliance with FERC Order No. 2222, which requires enrollment information verification and event coordination between PJM and distribution utilities. PJM has requested implementation of FERC 2222 to begin February of 2026, less than 30 months. Developing a data sharing program during the term of this ESP prepares the Companies for participation in FERC Order No. 2222. Additionally, by facilitating the requisite data sharing to enroll devices in DER aggregations, the Companies will enable greater participation of DER aggregations, create additional value for existing AMI customers by providing an additional use case for the technology.

**Q.15 FirstEnergy does not currently have widespread deployment of AMI. How does Armada Power propose FirstEnergy meet the PJM data requirements for all customers?**

**A.15** It is appropriate for FirstEnergy to build their system to accommodate the data sharing as their grid mod and AMI deployments continue throughout their service territory. The

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<sup>4</sup> “DER Aggregator” shall mean an entity that is a Market Participant that: (i) uses one or more DER Aggregation Resources to participate in the energy, capacity, and/or ancillary services markets of PJM through the DER Aggregator Participation Model; PJM FERC Generated Tariff Filing



1 start date for this PJM program is close and not planning for the future could leave future  
2 customers with AMI with limited use rather than receiving the full value of their smart  
3 meter immediately upon its installation.

4 **Q.16 Does the recommendation by Armada Power Further any Ohio or Federal Policies?**

5 **A.16** Yes, Armada Power’s recommendation furthers policies of the State of Ohio. Armada  
6 Power is headquartered in Columbus, Ohio and manufactured in Solon, Ohio, per the  
7 Ohio Revised Code section 4939.02(A)(1). “It is the public policy of the state to ...  
8 promote economic development in this state<sup>5</sup>.” By including an Ohio manufactured and  
9 based company, this plan will meet the policy of Ohio. Additionally, section 4928.02(D)  
10 of the Ohio Revised Code states it is the policy of the state to “[e]ncourage innovation  
11 and market access for cost-effective supply- and demand-side retail electric service  
12 including, but not limited to, demand-side management...” The Armada Power  
13 recommendations encourage greater participation in demand response programs which  
14 enhance access to demand-side management programs.

15 **III. CONCLUSION**

16 **Q.17 Please summarize your recommendations to the Commission.**

17 **A.17** Armada Power recommends the Companies’ Demand Response for Residential programs  
18 be approved with the following modifications:

19 1. Direct the Companies’ Load Control Demand Response program to remain technology  
20 neutral, only to restrict participation based on capabilities. Or to open a technology  
21 certification and qualification option for new technologies to participate.

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<sup>5</sup> Ohio Revised Code, section 4939.02(A)(1).

1           2. Direct the Companies to develop a data sharing program to securely facilitate  
2           enrollment of residential customers in PJM energy, capacity and ancillary services  
3           markets to meet the requirements of FERC Order No. 2222.

4   **Q.18 Does this conclude your direct testimony?**

5   **A.18** Yes. However, I reserve the right to update this testimony to respond to further testimony,  
6           reports, and/or evidence submitted in this case.

**CERTIFICATE OF SERVICE**

I hereby certify that the Public Utilities Commission of Ohio's e-filing system will electronically serve a copy of this filing on all parties referenced in the service list of the docket who have electronically subscribed to this case.

/s/ Drew B. Romig

Drew B. Romig (0088519)

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