

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke)
Energy Ohio, Inc., for Approval of) Case No. 19-2223-EL-UNC
McMann Battery Storage Project.)

DIRECT TESTIMONY OF

MATTHEW G. SCHULTZ

ON BEHALF OF

DUKE ENERGY OHIO, INC.

December 20, 2019

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I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A My name is Matthew G. Schultz. My business address is 400 S. Tryon Street,
3 Charlotte, North Carolina 28202.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by Duke Energy Carolinas, LLC (DEC), as a Business
6 Development Manager II. DEC, as an affiliate of Duke Energy Ohio, Inc. (Duke
7 Energy Ohio or Company), provides various services to Duke Energy Ohio and
8 other affiliated companies of Duke Energy Corporation (Duke Energy).

9 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**
10 **QUALIFICATIONS.**

11 A. I have a Bachelor of Arts degree in economics and mathematics from the
12 University of Rochester, a Master's degree in economics from Duke University,
13 and a Master's degree in Business Administration from the University of Virginia.
14 I have been employed by Duke Energy in various positions since 2013. In prior
15 roles I worked on utility scale renewable energy acquisitions at Duke Energy
16 Renewables, Inc., and led project finance at REC Solar Commercial Corporation,
17 a behind-the-meter solar developer owned by Duke Energy. I began my current
18 role in 2018. Prior to joining Duke Energy, I was employed as a Regulatory
19 Economist in the Electricity Division of the Maryland Public Service
20 Commission.

21 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

22 A. No.

1 **Q. PLEASE SUMMARIZE YOUR DUTIES AS A BUSINESS**
2 **DEVELOPMENT MANAGER II.**

3 A. As a Business Development Manager II, I am responsible for developing and
4 implementing energy storage and microgrid projects for Duke Energy's regulated
5 utilities. I also support strategy and policy work related to the development of
6 these projects.

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8 A. The purpose of my testimony is to provide the Public Utilities Commission of
9 Ohio (Commission) with detailed plans for the previously approved battery
10 storage pilot program as ordered on December 19, 2019, in Case No. 17-32-EL-
11 AIR, *et al.* I will provide an overview of the McMann Battery Storage Project
12 (Project) developed for this pilot program. I will also discuss our plans to provide
13 financial and operational data for this project, as previously ordered by the
14 Commission. I will also request that the Commission authorize the Project to
15 participate in the PJM market in order to maximize the benefits of this project for
16 customers.

17 **Q. PLEASE DESCRIBE THE RELIEF SOUGHT BY DUKE ENERGY OHIO**
18 **IN THIS PROCEEDING?**

19 A. Duke Energy Ohio is requesting that the Commission approve its proposal to
20 construct the Project and requests that the Commission approve its proposed
21 accounting and rate treatment related to the Project. The Company also requests
22 that the Commission authorize the Project to participate in the PJM market.

1 **Q. PLEASE PROVIDE AN OVERVIEW OF THE TESTIMONY BEING**
2 **PRESENTED BY DUKE ENERGY OHIO IN THIS PROCEEDING?**

3 A. In addition to my testimony, the Company is also presenting the testimony of Mr.
4 William Lowder, Mr. Jay Brown, and Ms. Linda Miller. Mr. Lowder will provide
5 testimony regarding the Company's cost estimate and construction schedule. Mr.
6 Brown will provide testimony on the proposal to recover the costs of the Project
7 through Rider DCI and the treatment of any PJM revenues and costs associated
8 with the Project. Ms. Miller will provide testimony supporting the Company's
9 accounting treatment of the Project.

10 **Q. PLEASE PROVIDE AN OVERVIEW DUKE ENERGY OHIO'S PLANS**
11 **FOR ITS McMANN BATTERY STORAGE PILOT PROGRAM.**

12 A. Duke Energy Ohio has worked to identify battery storage projects for the primary
13 purpose of deferring circuit investments or addressing distribution reliability
14 issues. If, in addition to providing these distribution functions, the battery is able
15 to provide value in the PJM market, then the Company believes it should be
16 permitted to participate in the market with the Project. Duke Energy Ohio will
17 only participate in the market when that participation will not negatively impact
18 the primary distribution function of the battery Project. The Company is
19 proposing that any benefit received from PJM market participation, net of costs,
20 should be returned to customers through Rider DCI. This will maximize the
21 benefits of the Project for customers. Duke Energy Ohio witness Brown provides
22 additional details on Rider DCI recovery. The Company plans to classify these

1 projects under FERC account 363, as discussed in detail in Duke Energy Ohio
2 witness Miller's testimony.

II. DISCUSSION

3 **Q. PLEASE PROVIDE A DESCRIPTION OF THE McMANN BATTERY**
4 **STORAGE PROJECT.**

5 A. The McMann Battery Storage Project is an approximately 3.95MW/8.9MWH
6 lithium ion battery. This project will be located adjacent to the existing McMann
7 substation in Union Township, Ohio. The primary application of the project will
8 be to reduce the peak load on the circuit to defer the need for an additional
9 transformer at that location, which is a traditional wired distribution benefit. If
10 authorized by the Commission, the battery will also participate in the PJM
11 regulation market when not needed to reduce peak load on the circuit.

12 **Q. HOW WAS THE McMANN BATTERY STORAGE PROJECT**
13 **DEVELOPED?**

14 A. Based on the Stipulation and Recommendation approved in the Company's
15 current Electric Security Plan, which included a \$20 million battery storage pilot
16 program,¹ I began to work with Duke Energy Ohio distribution planners to
17 identify potential locations for battery storage projects. A number of potential
18 projects were identified. Some projects were discarded due to their technical
19 complexity. Other projects required a battery larger than could be developed

¹ *In the Matter of the Application of Duke Energy Ohio, Inc., for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143 in the form of an Electric Security Plan, Accounting Modifications, and Tariffs for Generation Service, Case No. 17-1263-EL-SSO, et al.*

1 under this pilot program. After studying the McMann location, we elected to
2 move forward with this project for the following reasons:

- 3 1. The battery size and cost fit well within the limits of the approved
4 pilot program.
- 5 2. The battery is able to defer the need for a substantial distribution
6 upgrade.
- 7 3. In combination with the battery, there is potential to shift load from
8 this circuit to an adjacent circuit in order to extend the life of the
9 project if load growth is faster than expected.

10 This makes this project an ideal location to test the distribution deferral benefits
11 of battery storage projects.

12 **Q. PLEASE DESCRIBE THE POTENTIAL BENEFITS OF THE PROPOSED**
13 **ENERGY STORAGE FACILITY?**

14 A. The primary application of the McMann Battery Storage Project will be to reduce
15 the load on the McMann distribution circuit during peak load hours. This will
16 ensure that the circuit load stays below the maximum rating for the existing
17 substation transformer. This will defer the need to install an additional
18 transformer and additional distribution upgrades at this location. In addition to
19 this primary application, if authorized by the Commission, this project could
20 participate in the wholesale markets. As discussed in Witness Brown's testimony,
21 any revenue net of costs received from PJM will be returned to customers via the
22 DCI Rider.

1 **Q. PLEASE DISCUSS WHAT DUKE ENERGY OHIO HOPES TO LEARN**
2 **THROUGH OWNING AND OPERATING THE McMANN BATTERY**
3 **STORAGE PROJECT**

4 A. As with any new technology, information will be gained from all phases of the
5 project from development to decommissioning. After the general approval of the
6 pilot program, distribution planning was engaged to help identify locations for
7 battery storage and received training from the storage development engineering
8 team on how to identify potential projects. The lessons from this will be used to
9 streamline the project identification and evaluation in the future and support
10 formalizing the process of identifying and evaluating battery storage projects as
11 non-wires alternatives.

12 Additional information will be gained as development is completed and as
13 the project goes through procurement and construction. Duke Energy Ohio will
14 work the local permitting authorities to identify the required permits and
15 approvals to construct a battery storage project. The Company will also
16 collaborate with local emergency responders to ensure that the proper safety
17 procedures are in place. This project will enable Duke Energy to continue to
18 refine its battery storage procurement strategy. This competitive process will
19 identify potential vendors for future projects and evaluate the most cost-effective
20 strategy to procure battery storage projects.

21 When the battery is operational, we will be able to test and confirm our
22 ability to control the battery to accurately reduce the peak load on a distribution
23 circuit. We will also observe how that battery interacts with the rest of the grid.

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1 As the battery continues to operate, we will be able to observe how the battery is
2 degrading and how that impacts operations. This project will also inform how we
3 design future battery projects based on expected load growth and battery
4 performance.

5 If authorized to participate in PJM, this battery will also enable us to
6 evaluate the impact of distribution-tied resources providing regulation services.
7 This will enable us to better evaluate future projects' impact to the grid, whether
8 owned by Duke Energy Ohio or not.

9 **Q. WHAT FINANCIAL AND OPERATIONAL INFORMATION WILL BE**
10 **PROVIDED TO THE COMMISSION AS A RESULT OF THIS PILOT**
11 **PROJECT?**

12 A. Within six months after the McMann Battery Storage Project has been placed into
13 service, the Company will provide the Commission with a report detailing the
14 construction progress along with the final actual project costs. Within one year
15 after placement in service, the Company will provide a report detailing
16 operational knowledge gained from the project and detailed information on the
17 operational benefits of the project. This latter report will be updated annually for
18 a total of five years.

19 **Q. SHOULD THE COMMISSION AUTHORIZE DUKE ENERGY OHIO'S**
20 **McMANN BATTERY STORAGE PROJECT TO PARTICIPATE IN PJM?**

21 A. Yes. Participation in PJM will maximize the benefits of this project to customers.
22 The battery is needed for a limited portion of the year to reduce peak load on its
23 circuit. When not needed for this purpose, the battery can provide value to the

1 PJM market. The battery is capable of both serving its distribution function and
2 participating in the PJM Market. This will maximize the value of the asset.

3 **Q. WHAT SERVICES WOULD THE BATTERY PROVIDE IN THE PJM**
4 **MARKET?**

5 A. The Company currently plans to use the McMann Battery Storage Project to
6 participate in the PJM regulation market following the Regulation D signal
7 designed for fast responding resources. Duke Energy Ohio may potentially
8 provide other services to PJM in the future as a result of the implementation of
9 FERC Order 841.

10 **Q. HOW WILL MARKET PARTICPATION BENEFIT RATEPAYERS?**

11 A. Participation in the market will maximize the benefits of this project for
12 ratepayers. Duke Energy Ohio is proposing that all benefits from participating the
13 PJM market will be passed back to customers through Rider DCI. Without
14 market participation, customers will ultimately pay more for the proposed pilot
15 project. In the future if the Company is unable to participate in PJM with
16 batteries it may be forced pursue a more expensive wires solution than would
17 otherwise be possible, as compared with battery solutions receiving benefits from
18 PJM that are delivered to customers.

19 **Q. DOES DUKE ENERGY OHIO CURRENTLY PARTICPATE IN PJM?**

20 A. Yes, through its energy efficiency and demand response programs, the Company
21 currently participates in both the PJM capacity and energy markets. The benefits
22 of such participation are shared with participating customers and with all
23 customers through lower rider payments.

1 **Q. HAS THE COMMISSION PREVIOUSLY AUTHORIZED DUKE ENERGY**
2 **OHIO TO PARTICIPATE IN PJM FOR THE BENEFIT OF CUSTOMERS**

3 A. Yes. As discussed above, Duke Energy Ohio's energy efficiency and demand
4 response program and others have been authorized to participate in PJM in order
5 to benefit our ratepayers.²

6 **Q. IF THE COMMISSION DOES NOT AUTHORIZE THE McMANN**
7 **BATTERY STORAGE PROJECT TO PARTICIPATE IN THE PJM**
8 **MARKETS, SHOULD THE PROJECT STILL BE APPROVED AS PART**
9 **OF THE PILOT PROGRAM?**

10 A. Yes. While participating in PJM would maximize the value of the project for
11 customers, the project still provides substantial value to customers without PJM
12 participation. The project would still be consistent with the pilot program
13 previously authorized by the Commission.

14 **Q. IS THE PROPOSED BATTERY STORAGE PROJECT CONSISTENT**
15 **WITH THE PILOT APPROVED IN COMMISSION ORDER IN THE**
16 **CURRENT ELECTRIC SECURITY PLAN?**

17 A. Yes. Duke's proposed pilot project was to be used for the purpose of deferring
18 circuit investment or addressing distribution reliability issues.³ The McMann
19 project will be used to defer circuit investments as proposed. The Order also
20 indicated the commission should have access to financial and operational

² See, e.g., *In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of its Energy Efficiency and Peak-Demand Reduction Portfolio Programs*, Case No. 13-431-EL-POR.

³ ESP IV, ¶ 203.

1 information for the project.⁴ This will be provided to the Commission in the
2 reports described above. The Commission also ordered the application to be
3 consistent with the PowerForward roadmap.⁵ As a battery storage non-wires
4 alternative project, this pilot is consistent with the Commission's PowerForward
5 Roadmap.⁶ The Commission's order did not specifically address PJM market
6 participation and participation in PJM is not inconsistent with the Commission's
7 previous ruling.

8 **Q. DOES DUKE ENERGY OHIO ANTICIPATE FILING FOR APPROVAL**
9 **OF ADDITIONAL PROJECTS UNDER THIS PILOT PROGRAM**

10 A. Yes. Duke Energy Ohio plans to file for approval of additional projects consistent
11 with the \$20 million battery storage pilot program approved in the Company's
12 current Electric Security Plan.

III. CONCLUSION

13 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

14 A. Yes, this concludes my direct testimony.

⁴ ESP IV, ¶ 208.

⁵ *Id.*

⁶ <https://www.puco.ohio.gov/industry-information/industry-topics/powerforward/powerforward-a-roadmap-to-ohios-electricity-future/> (accessed Dec. 11, 2019).