

**BEFORE  
THE PUBLIC UTILITY COMMISSION OF OHIO**

In the Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Electric Distribution Rates.	) ) )	Case No. 17-32-EL-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Tariff Approval.	) )	Case No. 17-33-EL-ATA
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods.	) ) )	Case No. 17-34-EL-AAM
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Modify Rider PSR.	) )	Case No. 17-872-EL-RDR
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Amend Rider PSR.	) )	Case No. 17-873-EL-ATA
In the Matter of the Application of Duke Energy Ohio Inc., for Approval to Change Accounting Methods.	) ) )	Case No. 17-874-EL-AAM
In the Matter of the Application of Duke Energy Ohio, Inc. for Authority to Establish a Standard Service Offer Pursuant to Section 4923.143, Revised Code, in the Form of an Electric Security Plan, Account Modifications, and Tariffs for Generation Service.	) ) ) ) ) ) )	Case No. 17-1263-EL-SSO
In the Matter of the Application of Duke Energy Ohio, Inc. for Authority to Amend its Certified Supplier Tariff, P.U.C.O. No. 20.	) ) )	Case No. 17-1264-EL-ATA
In the Matter of the Application of Duke Energy Ohio, Inc. for Authority to Defer Vegetation Management Costs.	) ) )	Case No. 17-1265-EL-AAM
In the Matter of the Application of Duke Energy Ohio, Inc., to Establish Minimum Reliability Performance Standards Pursuant to Chapter 4901:1-10, Ohio Administrative Code.	) ) ) ) )	Case No. 16-1602-EL-ESS

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**DIRECT TESTIMONY OF JOSEPH HAUGEN  
ON BEHALF OF  
THE RETAIL ENERGY SUPPLY ASSOCIATION AND  
INTERSTATE GAS SUPPLY, INC.**

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1     **I. INTRODUCTION AND PURPOSE OF TESTIMONY**

2     **Q1. Please introduce yourself.**

3     A1. My name is Joseph Haugen and I am employed by Interstate Gas Supply, Inc. d/b/a IGS  
4       Energy (“IGS” or “IGS Energy”). I am the Power Supply Director and have been in this  
5       role since May of 2017. I have responsibilities related to IGS’s power supply and risk  
6       along with wholesale power market operations. I am also responsible for representing  
7       IGS in the PJM Interconnection, Inc. stakeholder process, supervising IGS’s demand  
8       response programs, and the daily operation and bidding of distributed energy resources  
9       into the PJM Frequency Regulation Market. My business address is 6100 Emerald  
10      Parkway, Dublin, Ohio 43016. I have worked at IGS since February 2013 when I was  
11      hired as a Senior Supply Analyst and aided in developing and implementing wholesale  
12      risk management hedging and trading strategies. In January 2015, I was promoted to  
13      Power Supply Manager where I managed a team of analysts responsible for  
14      implementing risk management and trading strategies.

15    **Q2. On whose behalf are you testifying?**

16    A2. I am testifying on behalf of IGS Energy and the Retail Energy Supply Association  
17       (“RESA”).<sup>1</sup>

18    **Q3. Please describe your educational background and work history.**

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<sup>1</sup> The comments expressed in this filing represent the position of the Retail Energy Supply Association (RESA) as an organization but may not represent the views of any particular member of the Association. Founded in 1990, RESA is a broad and diverse group of twenty retail energy suppliers dedicated to promoting efficient, sustainable and customer-oriented competitive retail energy markets. RESA members operate throughout the United States delivering value-added electricity and natural gas service at retail to residential, commercial and industrial energy customers. More information on RESA can be found at [www.resausa.org](http://www.resausa.org).

1 A3. I graduated from the Ohio State University in 2005 with a B.A. I obtained a Master of  
2 Business Administration from Otterbein University in 2009. Prior to working at IGS, I  
3 was an energy scheduler for Buckeye Power from 2007 through 2013. I scheduled daily  
4 power usage for the 25 cooperatives in Ohio and coordinated generation resources  
5 including wind, natural gas, and coal plants in the wholesale markets. I was also  
6 responsible for operating the demand response program. Prior to that I was a Laboratory  
7 Manager for CTL Engineering from 2005 to 2007.

8 **Q4. What is the nature of IGS's business?**

9 A4. IGS Energy has over 25 years' experience serving customers in Ohio's competitive  
10 markets. IGS Energy serves over 1 million customers nationwide and sells natural gas  
11 and electricity to customers in 11 states and in over 40 utility service territories. In Ohio,  
12 IGS currently serves electric customers in the Duke, AEP, FirstEnergy Ohio, and the  
13 Dayton Power & Light service territories. The IGS family of companies (which include  
14 IGS Generation, IGS Home Services and IGS CNG Services) also provides customer  
15 focused energy solutions that complement IGS Energy's core commodity business  
16 including demand response, IGS Solar, IGS Construction, distributed generation, CNG  
17 refueling, back-up generation and utility line protection. In relation to this testimony, IGS  
18 has several distributed energy resources which operate in the PJM Frequency Regulation  
19 Market.

20 **Q5. Have you testified previously?**

21 A5. Yes, I submitted testimony in Case Nos. 14-841-EL-SSO, *et al.*, Case Nos. 14-1693-EL-  
22 RDR, and Case No. 14-1297-EL-SSO,

23 **Q6. What is the purpose of your testimony?**

1 A6. The purpose of my testimony is to ensure that the Commission prohibits Duke from  
2 utilizing battery storage projects to compete in wholesale markets. As I will discuss  
3 further below, such conduct would be inconsistent with the Stipulation, violate Ohio law  
4 policy, and distort wholesale market prices to the detriment of other distributed energy  
5 resources, such as the resources owned by IGS. The PJM Frequency Regulation (FR)  
6 market is a competitive wholesale market, and, as described below, Rider DCI would  
7 provide a subsidy from distribution customers to support Duke Energy Ohio's provision  
8 of a wholesale competitive service.

9 **Q7. Can you explain the battery storage proposal before the Commission?**

10 A7. Yes, In Duke's electric security plan ("ESP") application, Duke proposed to construct 10  
11 megawatts in battery storage project(s). Among other things, Duke proposed to "provide  
12 certain ancillary services to the PJM Interconnection, L.L.C. (PJM) market. Specifically,  
13 the project is likely to provide frequency regulation, thereby helping to stabilize the  
14 electric grid in a manner that is more efficient than traditional resources, such as fossil  
15 generation."<sup>2</sup> As part of the Stipulation and Recommendation, Duke is permitted to  
16 install "battery storage project(s) for the purpose of deferring circuit investments or  
17 addressing distribution reliability issues."<sup>3</sup> The Stipulation proposes that Duke recover  
18 up to \$20 million in battery investments through the non-bypassable distribution rider  
19 DCI. <sup>4</sup> Consequently, the Stipulation provides that the investments "[m]ust qualify as  
20 distribution equipment under the FERC uniform system of accounts authorized for

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<sup>2</sup> Direct Testimony of Duke witness Kuznar at 3.

<sup>3</sup> Stipulation at 13.

<sup>4</sup> *Id.*

collection via the Rider DCI and subject to the Rider DCI caps.”<sup>5</sup> Thus, the investment must qualify under FERC Accounts 360-374.<sup>6</sup>

**Q8. Do you have any concerns with Duke’s battery proposal as modified by the Stipulation and presented by Duke in testimony?**

A8. Yes, while I believe the Stipulation contains restrictions on Duke’s utilization of battery resources, Duke’s testimony and discovery responses raise concerns the Commission should directly address in its Opinion and Order. Specifically, in response to discovery on the Stipulation, Duke stated that “If authorized by the Commission, Duke may use the battery projects to participate in wholesale markets. Duke will evaluate frequency regulation and other potential markets if authorized to participate in those markets by the Commission.”<sup>7</sup> Further, Duke Witness Wathen alleges battery storage resources qualify under FERC Account 363, but then he also states in a separate piece of testimony that “the Commission should provide explicit authority to include battery storage in Rider DCI, even if the investment in this equipment is ultimately recorded in FERC Accounts other than Accounts 360-374.”<sup>8</sup> Although I believe that these statements are inconsistent with the Stipulation, the fact that they were made after the filing of the Stipulation demonstrates a need for the Commission to explicitly restrict Duke from participating in wholesale markets with subsidized battery resources.

**II. THE UNLAWFUL USE OF RESOURCES IN RIDER DCI**

**Q9. Could you explain Duke Energy Ohio’s Rider DCI with regards to battery storage?**

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<sup>5</sup> Stipulation at fn 10.

<sup>6</sup> Stipulation at 11. “Capital costs included in Rider DCI shall be those recorded in FERC Accounts 360 through 374, provided such costs are not recovered elsewhere.” *Id.*

<sup>7</sup> Duke Response to IGS-INT-01-001, IGS First Set of Interrogatories – Stipulation, Case Nos. 17-32-EL-AIR, et al, attached as Exhibit JH-1.

<sup>8</sup> Supplemental Direct Testimony of William Wathen at 47.

1 A9. The Stipulation provides that Duke may recover the cost of battery resources through  
2 Rider DCI for the purpose of deferring circuit investments or addressing distribution  
3 reliability issues and that this equipment will qualify as distribution equipment under the  
4 Uniform System of Accounts.<sup>9</sup> Witness Wathen further clarifies, that the energy storage  
5 equipment will qualify as a distribution resource and the cost of the resource must be  
6 allocated through rates approved by a relevant regulatory agency under Account 363.<sup>10</sup>  
7 But, as explained previously Duke has indicated that it desires to use these storage  
8 projects for wholesale market functions including Frequency Regulation in the PJM  
9 markets.

10 **Q10. Could you explain PJM's Frequency Regulation Market?**

11 A10. Frequency Regulation (FR) in the PJM market is a competitive service that corrects for  
12 short-term changes in electricity. It matches up generation and demand more quickly than  
13 many of the steam units to help the grid maintain the desired electrical frequency and  
14 operate normally. Market participants submit their offer price the day before the  
15 operating day and can adjust the MW capability hourly through the operating day. PJM  
16 runs an hourly auction for the service which sets the hourly price and determines which  
17 units will provide the service based on the lowest price offers and historical performance.

18 **Q11. Do you believe resources can participate in wholesale energy markets and qualify**  
19 **under Rider DCI?**

20 A11. No. In order for the resource to qualify under Rider DCI, the resource must qualify under  
21 Accounts 360-374. Those accounts—particularly account 363—are limited to assets  
22 utilized for distribution purposes. The FERC regulated wholesale markets are not

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<sup>9</sup> Stipulation and Recommendation, page 13.

<sup>10</sup> Second Supplemental Testimony of William Don Wathen Jr. In Support of Stipulation, Page 11.



1 distribution related. It is my belief that if they operate in wholesale markets, they would  
2 not qualify as a distribution resource under Account 363. They would be providing a  
3 wholesale service and receiving revenue from the PJM wholesale markets. Given that  
4 fact, the more appropriate account to record such battery assets is FERC Account 348,  
5 which relates to Energy Storage Equipment—Production. As witness Wathen himself  
6 acknowledges, under the FERC Accounting rules established by FERC Order 784,  
7 “Where energy storage equipment can perform more than one function or purpose, the  
8 cost of the equipment shall be allocated among production, transmission, and distribution  
9 plant based on the services provided by the asset.” Wholesale market services relate to  
10 production—not distribution.

11 **Q12. Do you believe the Commission should make any clarifications to the Stipulation?**

12 A12. Yes, I believe the commission should explicitly exclude any projects under Rider DCI  
13 from competing in the wholesale energy markets. By guaranteeing full cost recovery for  
14 the project, this would insulate the battery from the risk of the market, provide an  
15 unlawful subsidy for a generation related service, and discourage other resources from  
16 participating in the competitive market. Duke Energy Ohio should be required to stand on  
17 its own, just like all other resources in the market. Allowing the Duke Energy Ohio  
18 battery to receive guaranteed recovery of costs from all Duke Ohio customers would  
19 harm all other resources that do not get guaranteed cost recovery and negatively impact  
20 the PJM market.

21 **Q13. Can you explain how the permitting subsidized energy storage to provide FR would**  
22 **interfere with PJM’s wholesale markets?**

1 A13. Yes. PJM has established an interstate market for FR services. The FR Market  
2 establishes uniform prices for this ancillary service throughout all of PJM. The FR  
3 Market rewards efficient sellers and drives inefficient sellers out of business. The  
4 problem with the proposed projects under Rider DCI operating in wholesale markets is  
5 that it allows Duke Energy Ohio to receive a different level of compensation in addition  
6 to the uniform clearing price. This guaranteed revenue recovery would permit Duke to  
7 participate in the wholesale market without the risks that apply to other resources  
8 participating in that market.

9 **Q14. Do you believe that providing cost recovery through Rider DCI for resources that**  
10 **participate in the wholesale market would provide an unlawful subsidy to a**  
11 **competitive service?**

12 A14. Yes, I do. R.C. 4928.02(H) states that it is the state policy to “[e]nsure effective  
13 competition in the provision of retail electric service by avoiding anticompetitive  
14 subsidies flowing from a noncompetitive retail electric service to a competitive retail  
15 electric service or to a product or service other than retail electric service, and vice versa,  
16 including by prohibiting the recovery of any generation-related costs through distribution  
17 or transmission rates.” Frequency Regulation is a generation-related competitive service.  
18 It would be inappropriate to permit Duke to subsidize its battery investment through its  
19 non-competitive service, Rider DCI, and to then use the battery assets to compete to  
20 provide competitive wholesale services.

21 **Q15. Would allowing Duke to use subsidized batteries to participate in wholesale markets**  
22 **discourage other market participants from building distributed energy resources?**

1 A15. Yes, it would pick a particular resource to receive cost-based rate recovery over other  
2 resources, removing certain resources from the competitive wholesale FR markets. The  
3 battery resources would receive guaranteed cost recovery and have a competitive  
4 advantage over resources relying on wholesale markets that must bid into and be selected  
5 in the hourly FR auctions, creating an unduly discriminatory effect. Put simply,  
6 subsidized resources need not make decisions like rational market participants. This  
7 unpredictability in itself can discourage investment.

8 **Q16. Why are you interested in this portion of Rider DCI?**

9 A16. IGS has invested considerably in physical resources, many of which are in Ohio, which  
10 would be in direct competition with the proposed batteries in the PJM FR market. While  
11 we must factor in market and investment risk, a resource with guaranteed cost recovery  
12 would be at an unfair advantage and create a dysfunctional market. We believe that there  
13 should be a level playing field in the PJM markets and that winners and losers shouldn't  
14 be selected by subsidizing specific resources. Therefore, we urge the Commission to  
15 prohibit Duke from using battery resources recovered through the DCI from participating  
16 in wholesale markets.

17 **Q17. Does this conclude your testimony?**

18 A17. Yes it does. But I reserve the right to supplement my testimony.

## **CERTIFICATE OF SERVICE**

I hereby certify that a copy the foregoing Direct Testimony of Joseph Haugen was served by electronic mail this 25th day of June, 2018 to the following:

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/s/ Rebekah J. Glover

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One of the Attorneys for the Retail Energy  
Supply Association

**Duke Energy Ohio**  
**Case No. 17-0032-EL-AIR, et al.**  
**IGS First Set of Interrogatories - Stipulation**  
**Date Received: May 10, 2018**

**IGS-INT-01-001**

**REQUEST:**

The Stipulation states at p. 13 that “Duke Energy Ohio may install a battery storage project(s) for the purpose of deferring circuit investments or addressing distribution reliability issues.” Regarding this statement:

- a. Identify all circuit investments that Duke has identified for potential deferral.
- b. Identify the definition of “distribution reliability issues” and all possible battery applications to address such issues.
- c. Does Duke intend to use the battery storage project(s) to participate any wholesale markets, including but not limited to the frequency regulation market? If so, identify all markets.
- d. Identify the anticipated depreciation life for the battery storage project(s).
- e. Identify the expected useful life of the battery storage projects with and without participation in wholesale markets, including but not limited to the frequency regulation market.
- f. Regarding Duke’s response to (e), identify all information, statistics, studies, and data to support the useful life under all scenarios.

**RESPONSE:**

- a. Duke is reviewing the potential for circuit investment deferral but has not finalized project details sufficient to identify specific circuit investments for deferral.
- b. Distribution reliability issues refers to outages and power quality issues for customers. Batteries can be operated in island mode to prevent outages for customers. Batteries can also react to changes in power quality such as a drop in voltage in order to maintain power quality for customers.
- c. If authorized by the Commission, Duke may use the battery projects to participate in wholesale markets. Duke will evaluate frequency regulation and other potential markets if authorized to participate in those markets by the Commission.
- d. We expect the cells and monitoring equipment to have a depreciation life of 12 years and the remaining equipment to have a depreciation life of 25 years. This could change depending on project specific details.
- e. This is unknown and will depend on the specific project and battery technology, which have not been finalized yet.
- f. As no specific projects have been evaluated to determine a useful life there is no additional information to provide.

**PERSON RESPONSIBLE:** Zachary Kuznar

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Summary: Text Direct Testimony of Joseph Haugen electronically filed by Ms. Rebekah J. Glover on behalf of Retail Energy Supply Association and Interstate Gas Supply, Inc.