

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application for Approval)
of a Unique Arrangement between the)
University of Cincinnati and Duke Energy)
Ohio, Inc.)

Case No. 18-1129-EL-AEC

APPLICATION FOR APPROVAL OF A UNIQUE ARRANGEMENT

I. Introduction

The University of Cincinnati (“UC”) respectfully submits this application for approval of a unique arrangement pursuant to R.C. 4905.31 and Ohio Admin. Code Rule 4901:1-38-05. The proposed arrangement utilizes UC’s ability to provide up to 54.7 megawatts (MW) of interruptible load upon request by Duke Energy Ohio during emergency events to ensure system reliability in times of peak demand in exchange for a monthly credit. The proposed arrangement will not only provide Duke Energy Ohio a resource to provide for load reduction on its system in times of PJM emergencies but also at times independent of any PJM demand response program. For example, the interconnection capability of the Rochelle Substation (that serves UC) will be made available to Duke Energy Ohio for use in localized emergency situations to provide additional system reliability for customers (including a number of hospitals) downstream of the substation.

Under the proposed arrangement, UC would be required to (if not already doing so) remove its demand from the Duke Energy Ohio system by operating UC’s onsite generation (capable of taking UC’s demand to zero) when called upon by Duke Energy Ohio. Interruptions would be allowed for up to 40 hours a month and up to 5 calls per month with set periods allowed for UC maintenance of its generators in shoulder months. In exchange, UC, as an interruptible customer, would receive a monthly credit determined by multiplying UC’s

metered billing demand¹ (not to exceed 54.7 MWs) x 70 percent of the PJM Interconnection LLC (PJM) Base Residual Auction (BRA) clearing price. The 2018-2019 BRA clearing price is \$164.77/MW-day, the 2019-2020 BRA clearing price is \$100/MW-day, the 2020-2021 BRA clearing price is \$130.00/MW-day, and the 2021-2022 BRA clearing price is \$140.00/MW-day.² For the term (from approval to May 31, 2025), UC would be subject to an annual credit cap of 70% of the 2018/2019 RPM BRA clearing price (\$164.77/MW-day) of up to 54.7 MW, which is \$2.3 million and an aggregate cap of \$12.8 million over the term (80% of the annual cap over the term) In no event shall the monthly interruptible credit exceed UC's charges for transmission and distribution service from Duke Energy Ohio, excluding charges for the Universal Service Rider.

Under the arrangement, UC would be penalized for not responding to calls to reduce demand, and UC cannot have a "negative" monthly bill for transmission and distribution service (excluding charges for the Universal Service Fund Rider) but would be able to bank credits unable to be used for future months remaining in the term. Duke Energy Ohio shall recover any credits provided to UC through the Economic Competitiveness Fund Rider ("ECF Rider"). Any unused banked credits existing at the end of the term are forfeited.

Duke Energy Ohio's ability to reduce the demand on its system by up to 54.7 MW by calling upon UC warrants approval of this application. As previously recognized by this Commission, interruptible resources can be utilized during emergency events to ensure system reliability in times of peak stress, to lower market prices during peak times and to lower the

¹ The monthly billing demand is the kilovolt amperes derived from UC's demand meter for the fifteen-minute period of UC's greatest use during the month.

² For example, Metered Billing Demand (not to exceed 54.7 MWs) x 0.7 x \$164.77/MW-day (2018-2019 BRA clearing price).

demand for more capacity resources. And specific to UC, Duke Energy Ohio can call on UC to operate its generation as a way to protect other users (including nearby hospitals) that may be served from Duke Energy Ohio from the same substation that serves UC. The geographic location of UC and its relation to other critical load sources, including several hospitals, coupled with its flexibility to provide an enhanced level of curtailable load, uniquely positions UC to provide benefits to the entirety of Duke Energy Ohio system. Accordingly, UC respectfully requests that the Commission approve this unique arrangement.

II. About UC

A. UC is a large research university and major employer in the Cincinnati area.

1. UC is a state-supported institution of higher learning and a public research university. It was founded in the early 1800s. It has multiple campuses in Cincinnati, Ohio, and there are more than 44,000 undergraduate and graduate students enrolled and attending classes. UC has been named among “the top tier of the Best National Universities,” according to U.S. News & World Report. UC has been named a “green university” by the Princeton Review as well.³

2. UC is an important employer in the greater Cincinnati area – it is the largest single employer in the greater Cincinnati area. UC employs approximately 17,800 individuals. The overall impact of UC in 2016-17 on added income to the local business community based on operations, research, clinical and construction spending was over \$1.2 billion, supporting

³ Some of the programs that helped achieve this distinction include: a bike share program where UC students can rent bikes from the university, an expanded recycling program, improved and expanded campus transportation options, the addition of vehicle charging stations, fuel pellet use in place of coal, greatly decreased energy and water use throughout campus, and the addition of six Leadership in Energy and Environmental Design (LEED) certified buildings.

over 24,000 jobs.⁴ The UC campus includes numerous academic buildings, residence halls, libraries, research facilities, a teaching hospital, and athletic facilities.

B. UC's electric needs, usage, and costs.

3. UC is a long-standing electric customer of Duke Energy Ohio. It receives transmission-level service and consumes significant amounts of electricity each year. UC is a mercantile customer as defined in R.C. 4928.01(A)(19), and consumes more than 250 million kilowatt-hours per year.

4. UC has made a significant investment in on-site generation as a means of controlling energy costs and ensuring reliable service to the campus. With its on-site generation, UC is able to quickly reduce its Duke Energy Ohio electric service usage on short notice in times of high electric demand. UC's on-site generation also provides UC with a means of ensuring electricity supply to campus in times of Duke Energy Ohio service interruptions.

5. UC's generation capability includes two 12.5 MW dual fuel fired simply cycle combustion turbines with "HRSG" capability and one 22 MW steam turbine. UC also has additional means of reducing its net import of electric from the transmission grid. These include a direct reduction of up to 9 MW by shutting down operation of chilled water production equipment, and instead using its Thermal Energy Storage system containing approximately 7 million gallons of chilled water. UC as well has the ability to reduce internal load consumption by reducing auxiliary equipment operation to ensure it is able to self-serve all of its internal electric demand.

⁴ Executive Summary, Analysis of the Economic Impact and Return on Investment of Education, May 2018 available at http://magazine.uc.edu/content/dam/magazine/images/favorites/webonly/EconomicImpact2018/UC_ExecSum_1617_Finalv2.pdf.

C. The impact of UC's energy-related efforts has provided and can provide multiple benefits.

6. Through its efforts in developing and managing its on-site generation, UC has been able to affect its energy costs. UC utility personnel actively manage periods during which the transmission grid is experiencing peak demands, and are proficient in quickly turning to on-site generation to manage and reduce system peaks.

7. UC's focus on its energy usage has helped foster conversations on campus and examination of innovative approaches to energy usage. Faculty and students have the opportunity to conduct energy-related research, learn about the energy industry and generation of electricity, and understand the impacts of energy on society. This is not simply because UC is a university but also because it has constructed, installed and maintained significant generation on campus. UC's unique status as a teaching and research university coupled with its on-site generation provides an opportunity for UC to partner with Duke Energy Ohio in future demonstration projects that may be allowed and/or approved by the Commission.

8. Importantly, UC's on-site generation can be further utilized. As this Commission has recognized, there are benefits to making interruptible resources available to Duke Energy Ohio, with those benefits including lowering market prices during peak times and lowering the demand for more capacity resources.⁵ In addition, the ability of UC to significantly curtail its transmission demand from Duke Energy Ohio provides a buffer of interruptible load that Duke Energy Ohio can rely upon during times of shortage to help assure continued and reliable service to human needs and other firm customers.

⁵ Opinion and Order, Case No. 14-841-EL-SSO, at 77-78.

9. The Rochelle Substation and UC's connection to that substation offers unique capability to Duke Energy Ohio. UC owns and operates/maintains two 138 - 12.5 kV transformers required to transform the power from 138 kV to 12.47 kV. Those transformers are connected to a ring bus that in turns connects to two operating transformers (owned by Duke Energy Ohio) that feed other customers including six hospitals. If the arrangement is approved, Duke Energy Ohio would be able to call on UC to remove its demand from Duke Energy Ohio's system in times of local constraints to ensure reliability for those downstream customers. Thus, the arrangement can provide both system wide and localized benefits to ratepayers.

10. All of the above described benefits coupled with UC's unique ability to self-generate 100% of its load support the proposed arrangement which is described in more detail below.

III. Proposed Unique Arrangement

11. R.C. 4905.31 and Ohio Admin. Code Rule 4901:1-38-05 permit the Commission to approve a unique arrangement between a mercantile customer and an electric utility. UC presents the structure of its arrangement in this application, consistent with the statute and rule.

A. Term and Effective Date

12. The term of the arrangement shall commence as of the first billing cycle immediately after the Commission approves this application. The term shall end May 31, 2025. Beginning on the effective date of the arrangement, UC and Duke Energy Ohio will enter into a

written agreement that is consistent with this application as approved by the Commission in this process. The written agreement will then be filed with the Commission.

13. UC can elect to terminate the arrangement upon six-month advance written notification to Duke and the Commission.

B. Credit and Caps

14. During the term, UC will receive a monthly credit in an amount equal to UC's actual metered billing demand, not to exceed 54.7 MWs, x 70 percent of the PJM BRA clearing price.

15. In no event will the monthly credit received by UC pursuant to the arrangement result in a negative monthly bill to UC from Duke Energy Ohio for transmission and distribution service ("wires charges"). If the monthly interruptible credit received by UC under the arrangement would exceed the monthly wires charges, then UC can bank the unused credit amount for use in a subsequent month during the term of the arrangement. Unused credits will expire at the end of the arrangement's term.

C. Conditions and Penalties on Interruption

16. Interruptions of UC will be limited to emergency events, whether called by Duke Energy Ohio or PJM. Duke Energy Ohio will endeavor to provide UC as much advance notice as possible of an upcoming emergency interruption, but UC will not be required to interrupt on less than 120 minutes notice. Such notice will specify the starting and ending hour of the interruption if known. Interruptions will be allowed up to 40 hours per month with no more than five calls per month.

17. UC will be permitted a total of four weeks during each calendar year to shut down its electric generating equipment to perform routine maintenance. During this four week period there will be no requirement for UC to reduce its import of electricity from the Duke Energy Ohio system. UC will only utilize the following shoulder months to perform maintenance: March, April, October and November.

18. Provided that UC has not already removed its demand from the Duke Energy Ohio system, if UC fails to reduce load as requested by Duke Energy Ohio for an emergency interruption, then UC will be required to refund for the load that failed to interrupt the interruptible rate credits received under this Arrangement during the precedent 12 months for the uninterrupted demand.

D. Other Terms and Conditions

19. Duke Energy Ohio will be permitted to recover the costs of the interruptible rate credit contemplated under the arrangement through the ECF Rider or an equivalent recovery mechanism.

20. Participation in this arrangement does not preclude UC from also participating in other PJM demand response programs through a curtailment service provider. UC will be permitted to retain any compensation received by PJM for its participation in those programs.

21. Participation in this arrangement does not preclude UC from other energy-saving programs available or from obtaining a generation supply from a competitive retail electric service provider.

22. UC shall have the right to opt out of Duke Energy Ohio's energy efficiency and peak demand reduction programs as provided by S.B. 310.

IV. Miscellaneous Statements

23. UC is a mercantile customer pursuant to R.C. 4928.01(A)(19) and Ohio Admin. Code 4901:1-38-01(F).

24. Duke Energy Ohio is a public utility as defined in R.C. 4905.02 and pursuant to the boundaries established by the Commission under R.C. 4933.82 is the electric distribution utility serving UC.

25. The proposed arrangement is reasonable and does not violate the provisions of R.C 4905.33 and 4905.35.

26. Approval of this application will not only be consistent with Ohio's electric policy, it will advance the policy set forth in R.C. 4928.02 including ensuring the availability to consumers of adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service. Approval of this application will also facilitate the State of Ohio's effectiveness in the state and global economies given that an interruptible resource can be utilized during emergency events to ensure system reliability in times of peak stress, to lower market prices during peak times and to lower the demand for more capacity resources.

27. Considering the benefits made possible under the proposed arrangement, the Commission should find that the proposed arrangement is in the public interest and is not anticompetitive, discriminatory or unduly preferential.

28. UC reserves the right to terminate the unique arrangement if the Commission substantially modifies the unique arrangement as presented in this application.

29. Nothing in this application or the proposed arrangement shall prevent or foreclose UC from availing itself of additional arrangements or opportunities that may become available or offered by Duke Energy Ohio.

30. This application is supported by the affidavit signed by Joseph Harrell, which is attached as Attachment A to this application. Mr. Harrell is the Associate Vice President, Facilities Management of UC.

V. Conclusion

For all of the foregoing reasons, UC respectfully requests that the Commission approve this application and do so expeditiously on the terms and conditions described herein.

Respectfully submitted,

Mike DeWine
Ohio Attorney General

/s/ Michael J. Settineri

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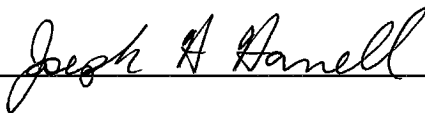
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State of Ohio)
) SS:
County of Hamilton)

AFFIDAVIT OF JOSEPH HARRELL

I, Joseph Harrell, being first duly sworn, declare that I am Associate Vice President, Facilities Management at the University of Cincinnati and that the information provided in the foregoing application is true and accurate to the best of my knowledge and belief.

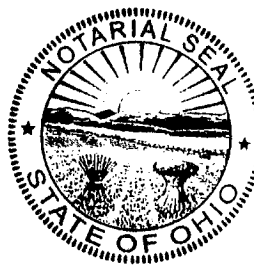


The foregoing instrument was acknowledged before me on this 20 day of July, 2018.



Notary Public, State of Ohio

My commission expires n/a



Deena Marie Duffy, Attorney At Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Sec. 147.03 R.C.

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Summary: Application for Approval of a Unique Arrangement electronically filed by Mr. Michael J. Settineri on behalf of University of Cincinnati