STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of
CONSUMERS ENERGY COMPANY for
authority to increase its rates for the generation and distribution of electricity and for other relief
_____/

Case No. **U-21870**

REBUTTAL TESTIMONY
OF
RICHARD BOEHNKE

On Behalf of

Great Lakes Renewable Energy Association

October 21, 2025

Q: PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A: Richard Boehnke. My business address is 714 Madison Pl., Ann Arbor, Michigan 48103.

Q: Please state your name and business address.

A: Richard Boehnke. My business address is 714 Madison Pl., Ann Arbor, Michigan 48103.

Q: Are you the same Richard Boehnke who provided direct testimony in this case on September 30th, 2025?

A: Yes.

Q: Are you sponsoring any exhibits?

A: No

Q: What is the purpose of your rebuttal testimony?

A: My rebuttal testimony is to clarify the definition of a Virtual Power Plant as written in William D. Kenworthy – Direct Testimony – Page 9 of 23 – Case No. U-21870 lines 6-11:

> "A Virtual Power Plant (VPP) is an aggregation of distributed energy resources—such as smart thermostats and water heaters, residential batteries paired with rooftop solar, EV managed charging, and flexible C&I loads—coordinated to balance supply and demand and deliver utility-grade grid services. It organizes customer flexibility into dispatchable capacity that reduces peaks, defers distribution infrastructure investment, and lowers system costs."

Q: What would you like to clarify in this definition?

A: According to the DOE, the definition of a Virtual Power Plant is, "generally considered a connected aggregation of distributed energy resource (DER) technologies."[1] While many

[1] Department of Energy Website, Accessed at https://www.energy.gov/lpo/virtua;l-power-plants, on 10/18/2025

Virtual Power Plants that have been aggregated in the United States offer "dispatchable capacity" as Kenworthy mentions, dispatchability is not required to support grid reliability.

Q: What is the definition of dispatchability?

A: Dispatchability is the ability of a resource to turn on or off or to scale its power output on demand during normal operating conditions. The ability to dispatch a resource is a prominent topic in discussions about power generation, power plant retirements, and new resource additions in anticipation of growing demand, specifically with regards to VPPs.[2]

Q: Dispatch seems a valuable resource, why is it not required for the definition of a VPP?

A: While dispatch features prominently in current discussions, the focus on the ability to dispatch resources distracts from a critical goal of aggregations like VPPs: system reliability. See Figure 4 below to further understand the difference between dispatchability and reliability below.

Figure 4: Dispatchability, resource reliability, and system reliability provide different attributes to the electricity system[3]

[2]Rocky Mountain Institute, January 2025, "Reality Check: Dispatchability and Reliability Are Not the Same Thing", Accessed at https://rmi.org/reality-check-dispatchability-and-reliability-are-not-the-same-thing/, on 9/23/2025

[3]Ibid

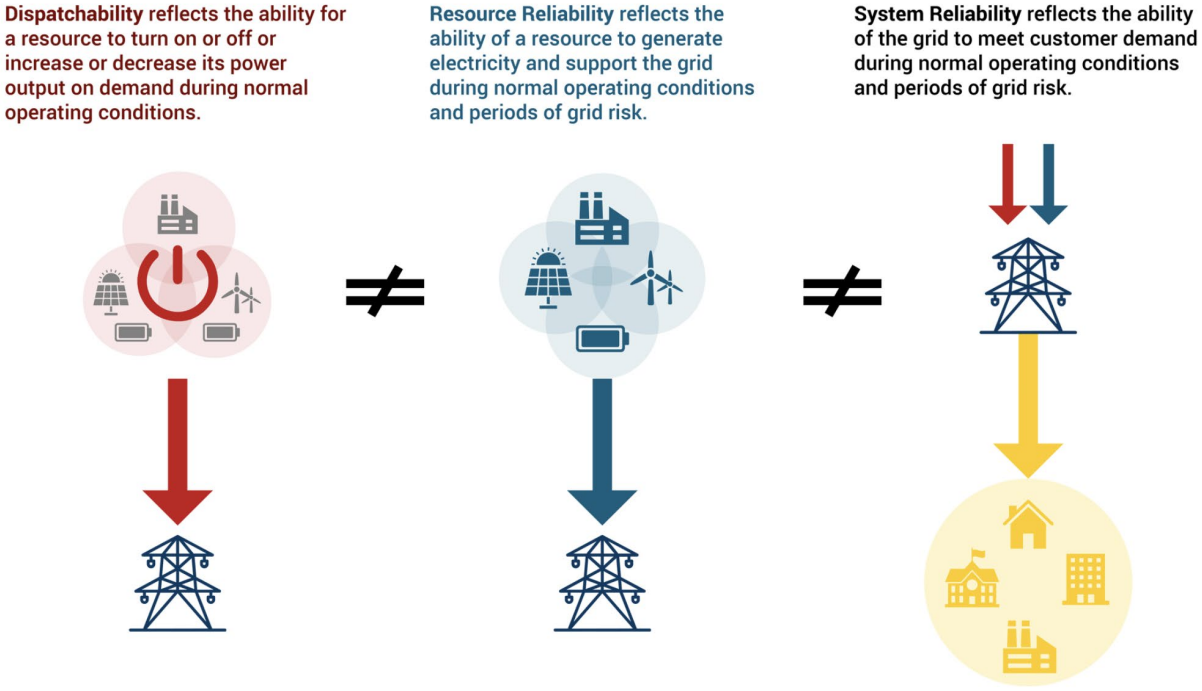

Exhibit 1. Dispatchability, resource reliability, and system reliability provide different attributes to the electricity system.

As defined in Figure 4, System Reliability, or the combination of resource adequacy and operational reliability, is the ability of the grid to meet customer demand under all conditions. While dispatch is a key component to deliver services reliably, load reductions based on the Levelized Cost of Energy from EE are commonly cited as the cheapest to procure.[4]

"The reality is that dispatchability, on its own, is an insufficient and potentially misleading criterion for evaluating new resource additions. In fact, so-called "dispatchable" resources can and have failed to dispatch, leading to major outages. A disproportionate focus on the dispatchability of specific generation resources risks steering discussions away from what really matters — achieving and maintaining a reliable and affordable power system….

Ultimately, what matters most for customers isn't dispatchability, or even resource-level reliability, but rather system reliability — the grid's ability to meet consumer demand during normal operating conditions and periods of grid risk. Critically, system reliability can be supported by both "dispatchable" and "intermittent" resources, along with the underlying transmission network."[5]

[4] ACEEE, "Energy Efficiency as a Resource", Accessed at https://www.aceee.org/topic/energy-efficiency-as-a-resource, on 9/23/2025

[5]Rocky Mountain Institute, January 2025, "Reality Check: Dispatchability and Reliability Are Not the Same

While traditional resources and a centralized model of Utility control are familiar, they do not guarantee dispatchability nor the reliability of those assets:

1. In December of 2022, ISO-NE declared a "capacity deficiency" and levied $39M in fines for power plants' failure to perform[6]
2. The PJM region suffered capacity-related outages in December 2022. PJM believed they had almost 29 GW of reserve capacity, but more than 23% of generating capacity in PJM was unavailable. 46 GW of fossil-fueled power plants were out of service. PJM announced penalties that may reach $2B.[7]

Dispatch and utility control is appealing in part because it is an extension of the centralized systems utilities have relied upon since they were established in the 20th century. However, as complexity continues to increase, decentralized and diverse resources will be required to manage and reliably deliver services to customers.[8]

Q: How can systems that do not have dispatch capabilities support system reliability?

A: Resource adequacy planning determines how much total capacity a utility needs to procure. Permanent load reductions (like high-COP heat pumps or insulation) directly and reliably reduce the peak load forecast, thereby eliminating the need to procure new capacity altogether. This impact is often more reliable and longer-lasting than a temporary dispatch event. Excluding non-dispatchable assets from VPP aggregations overlooks the value of avoided capacity. System operators don't need to dispatch when

Thing", Accessed at https://rmi.org/reality-check-dispatchability-and-reliability-are-not-the-same-thing/, on 9/23/2025

[6] David Sharp, Power Grid International, "New England ISO levies $39M in fines to power plants for coming up short in December", January 10, 2023. Accessed at: https://www.powergrid.com/policy-regulation/new-england-iso-levies-39m-in-fines-to-power-plants-for-comingup-short-in-december/ on 3/4/2023.

[7] Clarion Energy Content Directors, Power Engineering, "PJM describes widespread generation failures during December cold wave", January 12, 2023. Accessed at https://www.powereng.com/nuclear/pjm-describes-widespread-generation-failures-during-december-cold-wave/ on 3/5/2023.

[8] Rocky Mountain Institute, January 2025, "Reality Check: Dispatchability and Reliability Are Not the Same Thing", Accessed at https://rmi.org/reality-check-dispatchability-and-reliability-are-not-the-same-thing/, on 9/23/2025

capacity requirements have been eliminated from the system. This provides a more durable form of resource adequacy.

While systems like batteries and solar can be sub-metered, the grid only sees demand from the host sites' meter; all behind-the-meter assets are aggregated to that meter. As our energy systems become more distributed, neither behind-the-meter submetering nor the dispatch of those assets that are connected behind-the-meter directly equate to grid impacts, regardless of what assets were dispatched. Other incremental load additions on site coincident to dispatch could more than outweigh the impact of that dispatch. So, focusing on aggregating grid impacts as opposed to aggregating specific characteristics of assets leads to system reliability.

Further, VPPs provide crucial value by avoiding or deferring capital-intensive transmission and distribution (T&D) infrastructure investments by shaving localized peak loads. This benefit is independent of whether the underlying DER assets are traditionally dispatchable. See the Brooklyn Queens Demand Management Program that allowed ConEdison in New York to defer a $1.2B substation upgrade, instead spending $200M on DERs and demand reduction measures.[9]

The grid only sees changes at the meter, regardless if those changes are achieved by shifting load (dispatch) or permanently reducing it (efficiency). Narrowing the definition of VPP value to only dispatchable resources creates significant challenges for value stacking. For example, a single heat pump provides both a permanent, passive efficiency

[9] Department of Energy, January 2025,"Pathways to Commercial Liftoff: VPPs 2025 Update" Accessed at https://virtual-peaker.com/wp-content/uploads/2025/09/2025-Jan-LIFTOFF_DOE_VirtualPowerPlantsUpdate.pdf, on 9/23/2025

benefit (reducing baseline load) and a temporary, active shifting benefit (dispatching). Defining VPPs broadly allows the full value of these resources to be captured, so they can be procured by VPP operators. The impacts of such measures can be measured using a unified measurement and verification (M&V) system, such as OpenDSM[10] as mentioned in my testimony, simplifying VPP deployments and maximizing the aggregated assets' overall benefits.

Q: Does this complete your rebuttal testimony?

A: Yes.

[10]OpenDSM, Acced at https://lfenergy.org/projects/opendsm, on 10/18/2025

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of
CONSUMERS ENERGY COMPANY for
authority to increase its rates for the generation and distribution of electricity and for other relief
_____/

Case No. **U-21870**

PROOF OF SERVICE

Carol Dane says that on **October 21, 2025**, she served a copy of **Rebuttal Testimony of Richard Boehnke on behalf of the Great Lakes Renewable Energy Association** upon the following parties via email:

Name/Party	E-mail Address
ADMINISTRATIVE LAW JUDGE Honorable Jonathan F. Thoits	thoitsj@michigan.gov
CONSUMERS ENERGY COMPANY Gary A. Gensch, Jr. Anne M. Uitvlugt Bret A. Totoraitis Evan B. Keimach Spencer A. Sattler Mark R. Ruszkiewicz	mpsc.filings@cmsenergy.com gary.genschjr@cmsenergy.com anne.uitvlugt@cmsenergy.com bret.totoraitis@cmsenergy.com evan.keimach@cmsenergy.com spencer.sattler@cmsenergy.com mark.ruszkiewicz@cmsenergy.com
MICHIGAN PUBLIC SERVICE COMMISSION STAFF Nicholas Q. Taylor Alena M. Clark Daniel E. Sonneveldt Amit T. Singh Michael J. Orris Adam M. Cozort Lori Mayabb	 taylorn10@michigan.gov clarka55@michigan.gov sonneveldtd@michigan.gov singha9@michigan.gov orrism@michigan.gov cozorta1@michigan.gov mayabbl@michigan.gov
ATTORNEY GENERAL DANA NESSEL Celeste R. Gill Lucas Wollenzien Sebastian Coppola	Ag-enra-spec-lit@michigan.gov gillc1@michigan.gov wollenzienl@michigan.gov sebcoppola@corplytics.com

MICHIGAN ENVIRONMENTAL COUNCIL, CITIZENS UTILITY BOARD OF MICHIGAN; NATURAL RESOURCES DEFENSE COUNCIL; SIERRA CLUB Christopher M. Bzdok Tracy Jane Andrews Holly L. Hillyer Natasha Fowles Tyler Comings Tanya Stasio Jordan Burt Caroline Palmer Matt Bandyk	 chris@tropospherelegal.com tjandrews@tropospherelegal.com holly@tropospherelegal.com natasha@tropospherelegal.com tyler.comings@aeclinic.org tanya.stasio@aeclinic.org Jordan.burt@aeclinic.org cpalmer@synapse-energy.com mbandyk@synapse-energy.com
WALMART, INC. Melissa M. Horne	 mhorne@hcc-law.com
ASSOCIATION OF BUSINESSES ADVOCATING TARIFF EQUITY Benjamin Holwerda Stephen A. Campbell Michael J. Pattwell James Dauphinais Jessica York Christina Hildebrandt	 bholwerda@clarkhill.com scampbell@clarkhill.com mpattwell@clarkhill.com jdauphinais@consultbai.com jyork@consultbai.com childebrandt@consultbai.com
THE KROGER COMPANY Kurt J. Boehm Jody Kyler Cohn Michael L. Kurtz Justin Bieber	 KBoehm@BKLlawfirm.com JKylerCohn@BKLlawfirm.com mkurtz@BKLlawfirm.com jbieber@energystrat.com
MICHIGAN CABLE TELECOMMUNICATIONS ASSOCIATION Sean P. Gallagher Jon Austin	 sgallagher@fraserlawfirm.com jaustin@fraserlawfirm.com

MICHIGAN ENERGY INNOVATION BUSINESS COUNCIL; FOUNDRY ASSOCIATION OF MICHIGAN; ENERGY MICHIGAN; INSTITUTE FOR ENERGY INNOVATION; ADVANCED ENERGY UNITED	
Laura A. Chappelle	lachappelle@varnumlaw.com
Timothy J. Lundgren	tjlundgren@varnumlaw.com
Justin K. Ooms	jkooms@varnumlaw.com
ECOLOGY CENTER; THE ENVIRONMENTAL LAW & POLICY CENTER (ELPC); UNION OF CONCERNED SCIENTS (USC); VOTE SOLAR	mpscdockets@elpc.org
Daniel Abrams	dabrams@elpc.org
Katie Duckworth	kduckworth@elpc.org
Alondra Estrada	aestrada@elpc.org
Katie Toolan	ktoolan@elpc.org
MICHIGAN ELECTRIC TRANSMISSION COMPANY	
Richard J. Aaron	raaron@dykema.com
Courtney F. Kissel	ckissel@dykema.com
Olivia R.C. A. Flower	OFlower@dykema.com
Hannah Buzolits	HBuzolits@dykema.com
Josh L. Kluzak	jkluzak@dykema.com
CITIZENS UTILITY BORD OF MICHIGAN	
John Liskey	john@liskeypllc.com
URBAN CORE COLLECTIVE	aelc_mpsc@lawclinic.uchicago.edu
Amanda Urban	aurbanlaw@gmail.com
Mark Templeton	templeton@uchicago.edu
Jacob R. Schuhardt	jschuhardt@uchicago.edu
Emma Young	eyoung28@uchicago.edu
Alexandria Miskho	amiskho@uchicago.edu
Heidi Peng	hhpeng@lawclinic.uchicago.edu
Willow Perlick	willowperlick@lawclinic.uchicago.edu
Aashney Shah	aashney@lawclinic.uchicago.edu
SOLAR TECHNOLOGY LLC; HEMLOCK SEMI CONDUCTOR	
Jennifer U. Heston	jheston@potomaclaw.com

The statements above are true to the best of my knowledge, information and belief.

PUBLIC LAW RESOURCE CENTER PLLC

Carol Dane

Carol A. Dane
Public Law Resource Center PLLC
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823
Telephone: (517) 999-3782
E-mail: adminasst@publiclawresourcecenter.com

Dated: October 21, 2025