



ENVIRONMENTAL LAW & POLICY CENTER

July 9, 2025

Via E-File

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
P. O. Box 30221
Lansing, MI 48909

RE: MPSC Case No. U-21859

Dear Ms. Felice:

Attached for paperless electronic filing is the Rebuttal Testimony of Saad Siddique on behalf of The Ecology Center, The Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar (collectively the “Clean Energy Organizations” or “CEO”). Proof of Service is also attached.

Sincerely,

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**STATE OF MICHIGAN
MICHIGAN PUBLIC SERVICE COMMISSION**

In the Matter of the Application of)
Consumers Energy Company for Ex Parte)
Approval of Certain Amendments to Rate)
GPD.)

Case No. U-21859

**REBUTTAL TESTIMONY OF
SAAD SIDDIQUE
ON BEHALF OF
THE ECOLOGY CENTER, ENVIRONMENTAL LAW & POLICY CENTER, UNION
OF CONCERNED SCIENTISTS, AND VOTE SOLAR**

July 9, 2025

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1 **I. Witness Introduction and Summary**

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

3 **A:** My name is Saad Siddique. I am employed as an Economist and Energy Analyst with the
4 Environmental Law and Policy Center (“ELPC”). My business address is 35 E. Wacker
5 Drive, Suite 1600, Chicago, Illinois 60601.

6 **Q: Are you the same Saad Siddique who provided direct testimony in this proceeding on**
7 **behalf of The Ecology Center, ELPC, Union of Concerned Scientists (“UCS”), and**
8 **Vote Solar, collectively referred to as the “Clean Energy Organizations” or “CEO”?**

9 **A:** Yes.

10 **Q: What is the purpose of your rebuttal testimony in this proceeding?**

11 **A:** In my rebuttal testimony, I respond to Data Center Coalition (“DCC”) Witness Bieber’s
12 testimony regarding the benefit of incremental generation and transmission resources. I
13 also provide some clarification of and support for MEIU Witness Albers testimony
14 regarding other means by which data center customers can contribute to peak demand
15 reduction.

16 **Q: Are you sponsoring any exhibits to your rebuttal testimony?**

17 **A:** No.

18 **II. Response to DCC Witness Bieber**

19 **Q: What did DCC Witness Bieber testify regarding cost allocation of incremental**
20 **generation and transmission assets?**

21 **A:** DCC Witness Justin Bieber testified that: “It is not necessary or appropriate to directly
22 assign the cost of incremental generation or transmission assets to new large load

1 customers, such as data centers. Incremental generation or transmission assets provide
2 benefits to both new and existing customers. And similarly, revenues from new large load
3 customers contribute to the cost recovery of both new and existing assets. In response to
4 discovery, Consumers also confirms that it is not proposing to directly assign the costs of
5 any specific generation or transmission investment to any specific data center customers.”¹

6 The term **incremental** refers to relatively small, gradual increases in system demand, such
7 as those historically seen from routine economic growth or the addition of typical new
8 customers. However, the anticipated load growth from large data centers does **not** fit this
9 definition of “incremental.” Instead, data center development represents a **step-change**: a
10 sudden, substantial increase in demand that is both concentrated and unprecedented in
11 scale.

12 **Q: Do you agree with this characterization?**

13 A: While I recognize some of the logic underlying Mr. Bieber’s testimony, I do not fully agree
14 with his characterization in the context of the extraordinary data center load growth facing
15 Consumers Energy. Traditionally, cost allocation assumes that new customers help spread
16 fixed system costs over a larger customer base, thereby reducing average costs for all
17 customers. This is mathematically sound when the numerator (system costs) is essentially
18 fixed and the denominator (total load) increases. However, as MNSC Witness Jester
19 demonstrated in his direct testimony, when large-scale data center additions occur, both
20 the numerator and denominator increase together—often at similar rates—because the
21 infrastructure investments are made specifically to serve the new load.² Jester provided a

¹ Direct Testimony of Justin Bieber for DCC at 33.

² Direct Testimony of Douglas B. Jester for MNSC at 17-18.

1 clear mathematical illustration showing that, under these circumstances, the average cost
2 per customer does not decrease, and therefore the anticipated benefit to existing customers
3 from spreading fixed costs is effectively eliminated.³ His example demonstrates that
4 existing customers may see their costs rise, not fall, as a result of the higher incremental
5 costs associated with serving a new data center load.⁴

6 **Q: What is different about data center load that distinguishes it from traditional load**
7 **growth scenarios?**

8 A: This situation is fundamentally different than traditional incremental load scenarios for
9 several reasons. First, the unprecedented scale of anticipated data center load distinguishes
10 this situation from traditional incremental growth. Consumers Energy faces probable data
11 center prospects of 2.65 GW—with up to 15 GW in the pipeline—which could more than
12 double the Company’s current peak demand and energy requirements within a short period.
13 This level of concentrated, rapid growth is unlike the gradual, system-wide increases that
14 have historically driven utility investment and cost allocation decisions.⁵ As I discussed in
15 my direct testimony, the magnitude of required investments in both generation and
16 transmission is driven almost entirely by these new, large loads.⁶

17 As a result, unlike typical incremental load growth, where the system cost
18 numerator remains unchanged, as MNSC Witness Jester points out, both the numerator
19 (total system costs) and denominator (total load) in the cost allocation equation increase

³ *Id.*

⁴ See also Ex. CEO-6, Eliza Martin & Ari Peskoe, *Extracting Profits from the Public: How Utility Rate Payers Are Paying for Big Tech’s Power*, Harvard Environmental & Energy Law Program (Mar. 2025) at 2.

⁵ Direct Testimony of Caroline Palmer for MNSC at 7-8.

⁶ Direct Testimony of Saad Siddique for CEO at 11-13.

1 together, diminishing the traditional benefit of spreading fixed costs over a growing
2 customer base.⁷ In fact, if not addressed proactively, it may increase costs for customers.
3 Along the same lines, MNSC Witness Palmer argues that “[a]llocating ... increase[s] in
4 plant investment across all customer classes when that new plant investment identifiably
5 serves a particular class is unnecessary, unjust, and unreasonable.”⁸ This is also true for
6 distribution investments, where the scale and specificity of the facilities required to serve
7 data centers necessitate a different approach than traditional cost allocation. As Palmer
8 emphasizes, the magnitude of distribution infrastructure investment requires an approach
9 that ensures those customers are responsible for the distribution investments made on their
10 behalf, rather than spreading those costs across all customers. She specifically recommends
11 that Consumers Energy directly assign all dedicated distribution facility costs to data
12 centers in order to ensure cost causation and avoid unjust cross-subsidization.

13 Second, the primary purpose of the required infrastructure investments is
14 fundamentally different than in traditional incremental load growth scenarios. Here, the
15 vast majority of new generation and transmission investments are being driven almost
16 entirely by a small number of large, discrete data center loads, rather than by diffuse,
17 system-wide demand growth. Under traditional cost allocation assumptions, when
18 investments are made to facilitate system-wide demand growth, the costs of those
19 investments can be shared across the system. For example, as a Harvard ELI Report on
20 data centers highlights, this is the underlying justification for region-wide allocation of
21 transmission project costs: new transmission projects and their costs are justified because

⁷ Direct Testimony of Douglas B. Jester for MNSC at 17-18.

⁸ Direct Testimony of Caroline Palmer for MNSC at 29.

1 they provide broad, system-wide improvements.⁹ Conversely, when transmission or other
2 infrastructure is built primarily to serve a few energy-intensive consumers, such as large
3 data centers, and not for broad public benefits, it is inconsistent with the foundational
4 premise of shared cost recovery. In these cases, direct assignment or targeted cost
5 allocation is more appropriate, as the benefits are not broadly shared.¹⁰

6 Third, data centers exhibit a unique, high load factor and a 24/7 demand profile,
7 which does not align with the more variable and diverse usage patterns of existing
8 customers. This round-the-clock, high-intensity demand further complicates the allocation
9 of costs using traditional methods, which are typically designed for more heterogeneous
10 and less predictable load shapes.¹¹ This occurs because capacity-related generation costs
11 are allocated based on coincident peak demand periods rather than annual energy
12 consumption, creating a mathematical distortion where data centers receive
13 disproportionately low-cost responsibility relative to their actual system impact.¹² When a
14 data center operates at a constant high load factor, it adds energy consumption to the system
15 far faster than it contributes to the single summer afternoon peak periods that drive most
16 capacity cost allocation.¹³ As Palmer demonstrates, 2.65 GW of data center load at 90%
17 load factor would increase annual energy requirements by approximately 49% while
18 raising peak demand by only about 35%.¹⁴ Under Michigan's 4-CP allocation method,

⁹ Ex. CEO-6 at 15.

¹⁰ *Id.*

¹¹ Direct Testimony of Caroline Palmer for MNSC at 7, 9.

¹² Retail Costing and Pricing for Electricity Ahmad Faruqui at 27-28, https://www.brattle.com/wp-content/uploads/2017/10/5761_retail_costing_and_pricing_of_electricity.pdf.

¹³ *Id.*

¹⁴ Direct Testimony of Caroline Palmer for MNSC at 7-8.

1 which assigns capacity costs based on the four highest system peaks,¹⁵ the data center class
2 would be allocated only 35% of the new generation costs, leaving the remaining 14% to be
3 recovered from existing customers who did not cause this infrastructure need. This
4 systematic under-allocation is compounded by the fact that meeting a constant 24/7 load
5 block requires substantial base-load resources such as renewable energy plus storage or
6 dispatchable generation, which have high capital costs.¹⁶ These base-load resources, sized
7 to serve the data center's average demand rather than its marginal peak contribution,
8 recover their high fixed costs primarily through the same capacity allocators that already
9 understate the data center's responsibility, thereby magnifying the cross-subsidy effect
10 rather than reducing it.

11 **Q: What are your concerns if traditional cost allocation is applied in this situation?**

12 A: Applying traditional cost allocation in this context could result in several significant
13 concerns. First, as Witness Jester's analysis shows, existing customers may not benefit
14 from increasing electric sales to data centers if both system costs and total load increase
15 together.¹⁷

16 Second, allocating costs based on average demand or energy could assign an
17 improper share of new infrastructure costs caused by data center load to existing customers,
18 leading to economically inefficient price signals and undermining the principles of cost
19 causation.

¹⁵ Direct Testimony of Douglas B. Jester for MNSC at 16.

¹⁶ <https://www.pbssocal.org/define/explainer-base-load-and-peaking-power>.

¹⁷ Direct Testimony of Douglas B. Jester for MNSC at 17-18.

1 Third, the unique characteristics and scale of data center load mean that existing
2 customers could end up subsidizing the costs required to serve these new customers, rather
3 than benefiting from their addition to the system.

4 **Q: What did MNSC Witnesses Jester and Palmer recommend regarding cost**
5 **allocation?**

6 A: Given these circumstances, the appropriate approach to cost allocation is to recognize that
7 the traditional model does not fit when new, large data center load is the primary driver of
8 new investment. I agree with MNSC Witnesses Jester and Palmer, who argue that a more
9 accurate and economically sound method would be to use integrated resource planning
10 (“IRP”) modeling to isolate the incremental generation and transmission costs required to
11 serve new data center loads, and assign those incremental costs directly to the class of
12 customers causing them. Witness Jester further recommends that data centers be served
13 from bespoke resource portfolios, with costs directly assigned to those customers, rather
14 than allocated across the entire rate base.

15 **Q: Please elaborate on Witness Palmer’s Recommendations.**

16 A: Witness Palmer advocates for a comprehensive approach to ensure data center customers
17 bear full responsibility for the infrastructure investments made to serve them. Her central
18 recommendation is that “Consumers [should] create the new rate class as soon as possible—
19 based on terms no less stringent than approved for the Rate GPD data center provision—
20 and require all existing data center customers to take service on that rate.”¹⁸ This
21 recommendation is grounded in the principle that “the scale of data center investment

¹⁸ Direct Testimony of Caroline Palmer for MNSC at 11.

1 necessitates an approach that will ensure those customers' responsibility for the
2 investments made on their behalf.”¹⁹ To achieve this cost causation alignment, Palmer
3 specifically recommends that Consumers “directly assign any dedicated facilities costs to
4 the data center customer without the opportunity to offset some or all of the upfront costs
5 via a CIAC contract.”²⁰

6 Beyond distribution costs, her approach extends to generation investments,
7 recommending to “directly assign data center such costs using IRP modeling with and
8 without data center load to isolate incremental costs” rather than using traditional cost of
9 service allocation methods.²¹ To strengthen customer commitments and ensure cost
10 recovery, Palmer further advocates to “extend the minimum contract term to 20 years” and
11 “increase the minimum billing demand requirement to 90% of contract capacity.”²²
12 Collectively, these recommendations form an integrated framework designed to prevent
13 cross-subsidization between data centers and other customer classes while ensuring that
14 the unprecedented scale of data center infrastructure investments is properly allocated to
15 those who cause and benefit from such investments.

16 **Q: Do you support their recommendations?**

17 A: Yes. This approach ensures fairness, transparency, and compliance with legislative
18 requirements that prohibit cost-shifting to residential or other customers. I note that
19 Witness Palmer has made a strong case for the need to treat data centers distinctly within

¹⁹ Direct Testimony of Caroline Palmer for MNSC at 35.

²⁰ *Id.*

²¹ Direct Testimony of Caroline Palmer for MNSC at 4.

²² *Id.*

1 the cost allocation framework.²³ As I discuss above, Palmer recommends Consumers create
2 a new rate class for data centers as soon as possible, based on terms no less stringent than
3 those approved for the current data center provision.²⁴ This approach would facilitate more
4 precise tracking and assignment of costs, better align cost recovery with cost causation,
5 and help ensure that the addition of large, unique loads does not adversely impact other
6 customer classes. Therefore, I support Witness Palmer’s recommendation to create a new
7 rate class.

8 **III. Response to MEIU Witness Albers**

9 **Q: Describe Witness Albers' recommendations regarding peak load reduction related to**
10 **data centers.**

11 A: Witness John Albers presents specific recommendations for managing system impacts of
12 large new data center loads through flexible service arrangements. His testimony provides
13 detailed recommendations across multiple areas. Albers specifically recommends that
14 customers should have “an option for a new customer to make incremental monetary
15 contributions to existing EWR, DR, VPP, and demand flexibility programs that deliver
16 broader grid benefits and create headroom that can lower the cost and increase the speed
17 of connecting the new large loads.”²⁵ He explains that “by giving the new large load
18 customer the option to help other customers reduce their impact on the grid through
19 increased utilization of programs that reduce or shift energy usage, it should be easier for
20 Consumers to serve the new large load customer.”²⁶

²³ Direct Testimony of Caroline Palmer for MNSC at 8.

²⁴ *Id.* at 11.

²⁵ *Id.* at 12.

²⁶ *Id.*

1 Regarding front-of-meter solutions, Albers states that “deployment of grid
2 enhancing technologies (‘GETs’) represents another option in front of the meter that can
3 hasten service to new large load customers at a lower overall cost.”²⁷ He defines GETs as
4 “a family of technologies that include sensors, power flow control devices, and analytical
5 tools used to maximize the transmission of electricity across the existing electric system.”²⁸
6 Albers concludes by recommending that “Consumers' tariff offer new large load customers
7 the opportunity to choose from among a suite of advanced energy technologies and
8 solutions.”²⁹

9 **Q: What do you think of Albers’ recommendation to allow data center customers to**
10 **contribute to Consumers’ existing demand response, EWR, VPP, and demand**
11 **flexibility programs?**

12 A: This framework is well-grounded in sound economic and energy system principles.
13 Allowing data centers to participate in and invest in demand-side management and
14 flexibility programs provides a pathway for these high-load, high-capacity-factor
15 customers to actively mitigate their impact on the grid. By leveraging BTM resources and
16 participating in EWR, DR, and VPP programs, data centers can help reduce peak system
17 demand and shift load away from critical hours, thereby deferring or reducing the need for
18 costly new generation and transmission infrastructure. This incremental approach to
19 demand management not only supports system reliability and resource adequacy but also
20 aligns with Michigan’s broader clean energy and decarbonization goals by promoting more
21 efficient use of existing assets and encouraging distributed energy solutions.

²⁷ *Id.* at 13.

²⁸ *Id.*

²⁹ *Id.* at 14.

1 However, Albers is not clear on how these contributions would impact cost
2 allocation. Specifically, these contributions should not be viewed as a substitute for the
3 direct assignment of incremental infrastructure costs. Participation in such programs
4 should be an option, but not a path to avoid paying the full cost of the infrastructure required
5 to serve their load. Any incremental benefits from participation should be transparently
6 quantified and reflected in cost allocation only to the extent they demonstrably reduce
7 system costs. This approach maintains a clear link between cost causation and cost
8 recovery, ensures fairness, and supports innovation in Michigan’s evolving energy
9 landscape.

10 **Q: What do you think of Albers’ recommendation regarding the use of GETS?**

11 A: I agree with Albers’ conclusion that Grid Enhancing Technologies can hasten service at a
12 lower overall cost. GETs such as Dynamic Line Ratings and Advanced Power Flow
13 Controls increase the efficiency and capacity of existing transmission infrastructure and
14 cut down on development time. Where there is insufficient transmission capacity to serve
15 new load, GETs, such as DLR, represent a good first option to meet that load’s needs in
16 the near-term.

17 **Q: Do you have anything to add to Albers’ recommendation?**

18 A: Yes. One technology that Albers does not mention is advanced conductors. Advanced
19 conductors use modern materials such as carbon fiber and composite cores instead of steel
20 to add strength to the line.³⁰ These materials can be stronger and lighter than steel, and have
21 substantially lower “thermal sag” than traditional conductors. This allows them to have as

³⁰ U.S. Dept. of Energy, *Advanced transmission Technologies* (December 2020).
<https://www.energy.gov/oe/articles/advanced-transmission-technologies-report-508>

1 much as double the transfer capacity of traditional conductors of the same diameter. Hence,
2 by replacing the traditional conductors on existing transmission lines with advanced
3 conductors, *i.e.* reconductoring, it is possible to substantially increase the amount of load
4 the same line can serve. Similar to GETs, reconductoring with advanced conductors is a
5 good first option when transmission capacity prevents an obstacle to new load.

6 **Q: Does that conclude your testimony?**

7 A: Yes.

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GPD.)	

PROOF OF SERVICE

I hereby certify that a true copy of the foregoing *Rebuttal Testimony of Saad Siddique on behalf of the Ecology Center, Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar* was served by electronic mail upon the following Parties of Record, Wednesday, July 9, 2025.

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