



ENVIRONMENTAL LAW & POLICY CENTER

Protecting the Midwest's Environment and Natural Heritage

September 11, 2019

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

RE: MPSC Case No. U-20147

Dear Ms. Kale:

Please find attached the Initial Comments of the Environmental Law & Policy Center, the Natural Resources Defense Council, and Vote Solar regarding the utilities' preliminary hosting capacity and non-wire alternatives pilot plans.

Please contact me if you have any questions.

Sincerely,

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**STATE OF MICHIGAN
MICHIGAN PUBLIC SERVICE COMMISSION**

In the matter, on the Commission's own	)	
motion, to open a docket for certain regulated	)	
electric utilities to file their five-year	)	Case No. U-20147
distribution investment and maintenance	)	
plans and for other related, uncontested	)	
matters.	)	

**COMMENTS OF
ENVIRONMENTAL LAW & POLICY CENTER,
NATURAL RESOURCES DEFENSE COUNCIL, AND VOTE SOLAR**

Indiana & Michigan Power, DTE, and Consumers Energy (collectively, the utilities) presented their preliminary pilot plans for hosting capacity studies and non-wire alternatives at an August 14, 2019 stakeholder information session hosted by the Michigan Public Service Commission. The Environmental Law & Policy Center (ELPC), the Natural Resources Defense Council (NRDC), and Vote Solar (collectively, Joint Commenters) appreciate the Commission's invitation to comment on the utilities' preliminary pilot plans, and commend the Commission for its continued diligence in providing opportunities for stakeholder engagement and input on electric distribution system planning and modernization in Michigan. While the Joint Commenters provide comment and recommendations on several aspects of the utilities' pilot proposals below, their decision not to comment on any aspect of the utilities' proposals does not constitute either an endorsement or criticism of that aspect. The Joint Commenters expressly reserve the right to individually or collectively support or object to any aspect of the utilities' pilot proposals in this or any other proceeding before the Commission.

JOINT COMMENTERS

ELPC is a not-for-profit public interest environmental organization that works to achieve cleaner air, advance clean renewable energy and energy efficiency resources, improve environmental quality, protect clean water, and preserve natural resources in Michigan and the Midwest.

NRDC is a non-profit environmental organization headquartered in New York City, with offices in Chicago; Washington D.C.; San Francisco; Los Angeles; New Delhi, India; Bozeman, Montana; and Beijing, China. NRDC advocates on behalf of more than three million members and online activists with the expertise of more than 500 scientists, lawyers, and policy advocates to safeguard the air we breathe, the water we drink, and the places we treasure. NRDC has nearly 14,000 members who live, use electricity, and pay electric bills in Michigan.

Vote Solar is a non-profit, non-partisan, grassroots organization working to fight climate change and foster economic opportunity by bringing solar energy and other distributed energy resources (DER) into the mainstream.

SUMMARY OF RECOMMENDATIONS

Utility	Hosting Capacity	Non-Wire Alternatives
I&M	Lack of AMI does not preclude HCA. See recommendation applicable to all.	See recommendations applicable to all.
Consumers	Solar Zone proposal should not substitute HCA. See recommendation applicable to all.	See recommendations applicable to all.
DTE	System-wide HCA would provide more valuable information than a pilot of limited geographic scope.	See recommendations applicable to all.
Applicable to All	Explain how HCA fits into broader distribution system planning processes. Prepare system-wide HCA with current system capabilities and data sources. To the extent pursuing a pilot of limited geographic scope as a first step, follow DTE's approach. Develop timeline for providing HCA results and heat map to the public.	Explain how NWAs fit into broader distribution planning processes. Provide detailed hypothesis regarding, methodology for measuring, and a plan for reporting performance metrics. Propose general NWA suitability criteria. Explore customer- or third-party-owned resources in future pilot proposals.

GLOSSARY

The term “hosting capacity” refers to the amount of DER that a circuit can accommodate without adversely impacting power reliability or quality under current configurations, and without requiring mitigation or infrastructure updates.¹ Hosting capacity analysis (HCA) is an element of distribution system planning that can provide critical information to regulators and utilities, allowing them to proactively manage increased DER adoption while maintaining distribution grid reliability and safety.²

Non-wire alternatives (NWAs) are deployments of distributed energy resources (DER) or combinations of DER – owned by the utility, customers or other third parties – to defer or avoid the need for investment in conventional, more costly utility infrastructure.³

BACKGROUND

In its September 1, 2018 “Michigan Distribution Planning Framework,” Commission Staff recommended:

- “that the Commission require utilities to work with stakeholders to develop a cost-effective approach to providing publicly available hosting capacity information in the near term,” and,
- “that future distribution plans provide detailed information regarding suitable criteria for NWA projects and clear cost information for nontraditional approaches to capacity investments.”

¹ Lew, Debbie. “Emerging Distribution Planning Analyses.” Presentation, Distribution Systems and Planning Training for Midwest Public Utility Commissioners” at 22, January 16-17, 2018. Available at https://emp.lbl.gov/sites/default/files/11._lew_emerging_planning_analyses.pdf

² Vokmann, Curt. “Integrated Distribution Planning. A Path Forward” at 11, GridLab, 2018. Available at Gridlab.org/works/integrated-distribution-planning/.

³ *Id.* at 8.

In its subsequent November 21, 2018 Order providing “future guidance,” the Commission addressed Staff’s recommendations regarding HCA and NWAs. With respect to HCA, the Commission stated:

“an appropriate next step would be to hold a technical conference with utilities, stakeholders, and experts that have experience with hosting capacity studies in other jurisdictions to examine what types of information is needed to conduct such studies and the availability of such information in Michigan, as well as the costs, uses and feasibility of such studies. Depending on the outcome of that discussion, the Commission would be interested in a pilot application in the next iteration of distribution plans.”

Case No. U-20147, Order at 32-33 (Nov. 21, 2018). With respect to NWAs, the Commission agreed that “[u]nconventional solutions, including targeted EE, DR, energy storage, and/or customer-owned generation, that could displace or defer investments in a cost-effective, reliable, and timely manner should be considered and evaluated.” The Commission suggested that “further discussions related to the criteria for alternative analyses are warranted and would help shape the development of the next set of distribution plans,” and acknowledged the “tremendous opportunity to inform policy and technical issues through pilot applications.” Finally, the Commission “encourage[d] the development of additional NWAs by utilities,” and stated that “the sharing of experiences and lessons learned related to NWAs in Michigan and in other jurisdictions should be instructive to the next iteration of distribution plans.” *Id.* at 34.

The Joint Commenters understand this workgroup process—including the set of stakeholder sessions convened between June and October of 2019, presentations made during those sessions, and stakeholder input added to the record in this proceeding via written or oral comments—as constituting the “technical conference” and “further discussions” the Commission envisioned as necessary to ensure that the utilities include a robust set of HCA and NWA pilots

in their next set of distribution plans. The utilities' August 14, 2019 presentations were an important starting point, and helped the Joint Commenters understand:

- Each utility's perception of the value (and use cases) of HCA and NWAs;
- Each utility's perception of the barrier(s) associated with HCA and NWAs; and
- The extent to which each utility has developed a plan for HCA and/or NWA pilot(s).

GENERAL COMMENTS

The Joint Commenters commend the Commission for holding this stakeholder process to discuss HCA and NWAs, among other aspects of utility distribution planning. The Joint Commenters note however that we still do not have clarity on the utilities' existing distribution system planning processes, and, in particular, how HCA and NWAs integrate with those planning processes. Without that clarity, it is hard to assess how the utilities' proposed efforts with respect to HCA and NWAs will inform and be informed by distribution planning more broadly. While the Joint Commenters endorse HCA and NWA pilots as a valuable next step, and one that might provide benefits to customers, we note that we lack the foundation necessary to ensure that utilities and stakeholders are effectively preparing the grid for the future. The Joint Commenters recommend that the utilities provide greater clarity on their existing distribution planning processes, and explain how HCA and NWAs fit into those processes, at the September 18, 2019 stakeholder meeting hosted by the Commission.

HOSTING CAPACITY ANALYSIS PILOTS

Utility Presentations

I&M stated that its system lacks sufficient advanced metering infrastructure (AMI) penetration for the Company to plan or pursue a system-wide HCA at this time. It did not present an HCA pilot.

Consumers explained its view of the complexities and value associated with HCA, and indicated that while it does not believe that a system-wide HCA is necessary for 2020, “a pilot represents a prudent intermediate step to learn for future scenarios of high DER penetration.” Consumers described a “Solar Zone” pilot proposal, which would involve identifying areas that are appropriate for solar generation; performing a mini interconnection study, and proposing a collector network to gather all generation to a single HVD interconnection. In Consumers’ view, the Solar Zone pilot would help the utility understand how it might provide greater customer access to the distribution system, and increase solar penetration, without harm to the system.

DTE explained that HCA can be performed in phases with increasing levels of detail (from a “rule of thumb” at its most basic, to a system-wide hosting capacity analysis at its most detailed), and summarized the value/challenge tradeoffs at each level. The Company indicated that it is in the process of developing criteria to identify a targeted area for performing an HCA pilot, which “will identify the hosting capacity of the target geographic area by utilizing industry analytical tools.” DTE indicated that it will use the EPRI DRIVE tool to determine the minimum and maximum DER capacity that can be accommodated in the target geographic area. Finally, the Company described the questions it expects the pilot to answer, and the goals it expects the pilot to achieve.

Joint Commenters’ Response

A. Importance of Hosting Capacity Analysis

An HCA can serve more than one purpose, including to:

- provide information to developers on areas with sufficient capacity to target new projects;

- provide information to utilities to plan for more DER, including information about a utility's distribution system planning process, identification of areas that are in potential need for upgrading infrastructure, or areas for NWAs; and,
- assist the interconnection screening process.

The Joint Commenters encourage the Commission to recognize that HCA will provide valuable data to customers, developers, and the market, and to ensure that any barriers to accessing this data be limited. HCA will also be an important source of information to feed into a utility's distribution system planning processes. As recognized in a report to the Minnesota Public Utilities Commission, hosting capacity is an integral component of the overall distribution planning process, which also includes information to be gathered from the interconnection process.⁴ As pictured below, combining the information gathered from HCA and the interconnection process with existing utility planning efforts will help the utility move towards a more integrated grid planning process.⁵ The integrated grid planning process then informs locational net benefits analysis and DER procurement (including the procurement of NWAs).

⁴ "Integrated Distribution Planning," ICF International, August 2016. Available at <https://www.energy.gov/sites/prod/files/2016/09/f33/DOE%20MPUC%20Integrated%20Distribution%20Planning%208312016.pdf>.

⁵ *Id.* at v.

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graph TD; MSF[Multiple Scenario Forecasts] --> RTP[Resource & Transmission Planning]; CDA[Current Distribution Assessment] --> ALDTP[Annual Long Term Distribution Planning]; HC[Hosting Capacity] --> IS[Interconnection Studies]; RTP <--> ALDTP; ALDTP <--> LNB[Locational Net Benefits Analysis]; ALDTP <--> SDPS[Sourcing DER Provided Services]; ALDTP --> IS; ALDTP --> DIR[Distribution Investment Roadmap]; LNB <--> SDPS; SDPS --> DIR; subgraph DE_A [Distribution Engineering Analyses]; CDA; HC; end; subgraph IP [Interconnection Process]; IS; end; MSF --> ALDTP; CDA --> RTP; CDA --> IS; HC --> ALDTP; IS --> ALDTP; IS --> DIR; LNB -- Value of DER --> SDPS;
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The diagram illustrates the Distribution Engineering Planning Process, showing the flow of information and decision-making across various stages and components.

Key Components and Flow:

- Multiple Scenario Forecasts** (Grey box) feeds into **Resource & Transmission Planning** (Orange box) and **Annual Long Term Distribution Planning** (Blue box).
- Current Distribution Assessment** (Blue box) feeds into **Annual Long Term Distribution Planning** and **Hosting Capacity** (Blue box).
- Hosting Capacity** (Blue box) feeds into **Annual Long Term Distribution Planning** and **Interconnection Studies** (Purple box).
- Resource & Transmission Planning** (Orange box) and **Annual Long Term Distribution Planning** (Blue box) are interconnected.
- Annual Long Term Distribution Planning** (Blue box) is the central hub, connected to **Locational Net Benefits Analysis** (Green box), **Sourcing DER Provided Services (Pricing, Programs & Procurements)** (Green box), and **Interconnection Studies** (Purple box).
- Locational Net Benefits Analysis** (Green box) and **Sourcing DER Provided Services** (Green box) are interconnected and both contribute to the **Value of DER**.
- Interconnection Studies** (Purple box) feeds into **Distribution Investment Roadmap** (White box).
- Sourcing DER Provided Services** (Green box) feeds into **Distribution Investment Roadmap** (White box).

Groupings and Labels:

- Distribution Engineering Analyses** (Blue background) includes **Current Distribution Assessment** and **Hosting Capacity**.
- Interconnection Process** (Purple background) includes **Interconnection Studies**.
- Value of DER** (Green background) includes **Locational Net Benefits Analysis** and **Sourcing DER Provided Services**.

B. Comments on Utility Presentations

⁶ *In the Matter of Xcel Energy's 2015 Biennial Distribution-Grid-Modernization Report*, Order Certifying Advanced Distribution-Management System (ADMS) Project Under MINN. STAT. § 216B.2425 and Requiring Distribution Study, Minnesota Public Utilities Commission at 12, Docket No. E-002/M-15-962 (June 28, 2016).

To the extent the utilities proceed with an HCA pilot of limited geographic scope, we recommend that each utility explain, in detail, the use case(s) for its pilot, including an explanation of how the results of its pilot will feed into a system-wide HCA. In general, Joint Commenters concur with DTE’s approach to an HCA pilot, and recommend that I&M and Consumers follow DTE’s lead if pursuing a pilot of limited geographic scope. We note, in particular, DTE’s:

- Acknowledgment that HCA can be performed with increasing levels of detail over time;
- Discussion of the level of detail that is appropriate for DTE at this time;
- Discussion of the criteria it is developing and will employ in order to select a “target geographic area” for an HCA pilot;
- Identification of the analytical tool it will use in its HCA pilot; and
- Clear articulation of the questions it expects its HCA pilot to answer.

Further, in the interest of consistency (which will help the Commission, Staff, and stakeholders engage with the utilities’ HCA efforts), the Joint Commenters recommend that the utilities adopt a common set of target area selection criteria and HCA use cases, employ a consistent technical methodology, identify the data sources to be used by the utilities to develop its HCA, and incorporate any planned HCA efforts in their next set of distribution plans. Joint Commenters further recommend that the utilities develop a timeline for HCA result publication (using publicly available on-line maps with downloadable data) and updates.

The Joint Commenters do not believe that a lack of AMI deployment should preclude I&M from pursuing HCA. While AMI can improve the granularity of load data (which in turn can improve HCA output), the perfect need not be the enemy of the good. As DTE explained in its presentation, HCA can proceed in phases, through levels of increasing detail, with existing

sources of information, such as the utilities' GIS systems. Each company should assess the level of detail that is feasible given its current capabilities, and pursue that level of HCA as a first step.

The Joint Commenters understanding is that Consumers has proposed a "Solar Zone" pilot as a form of hosting capacity analysis. The Joint Commenters require more information to determine whether Consumers' "Solar Zone" proposal will answer the Company's own questions ("How can the utility provide greater customer access to the distribution system without harm to the system?" and "How can the utility increase solar penetration?"). Further, even if the "Solar Zone" pilot could provide valuable information to the Company for planning and integration of increased DER penetration, we do not view it as a substitute for a true HCA. We recommend that the Company pursue a separate formal HCA as suggested by the Commission. That said, we also welcome additional opportunity to learn more about the Company's plans for the Solar Zone, particularly:

- "Mini interconnection study" – Why has the Company proposed a "mini interconnection study"? Does that include a study of multiple potential customer sited DERs?
- "Areas that are Appropriate for solar generation" - Is this a hosting capacity analysis of a circuit or substation area?
- "Collector network" – Why has the Company proposed a collector network to link to a single HVD interconnection? What would be the purpose of collecting and redistributing the energy?
- Does the Company intend to deploy utility-owned resources to test this concept?

- “Potential to socialize interconnection costs” – Why does the Company propose to socialize interconnection costs? Is this intended to benefit small, customer-owned DERs on circuits that might potentially be capacity limited?

Lastly, the utilities should also include as part of their next filing a plan to provide the results of their respective HCA to the public, including a timeline for development of a hosting capacity heat map. Ensuring that this data is available and usable by customers and developers will greatly enhance the benefits of future adoption of DER and identifying optimal locations for DER. This will save time and money for the utility, customer, and developer when a project goes through the interconnection process.

NWA PILOTS

Utility Presentations

Utility	Project	Grid Concern	NWA Solution	Resource Ownership
I&M	West Street – Paw Paw Lake	Radial circuit that contributes significantly to SAIDI	Large battery	Utility-owned
	Stubey West	High outage minutes, no circuit ties.	DACR DER	Utility-owned
	Vicksburg Richardson	Reliability concerns – 6 outages average from 2016-2018	DACR DER	Utility-owned
	Hagar – Covert Fire Lanes	Reliability at end of a circuit	New distribution line DER	Utility-owned
	Buchanan Hydro – River Road	High duration and frequency of outages, no ties to surrounding circuits	DACR DER	Utility-owned
	Almena Station – Gobles & Bloomingdale	Consistent reliability issues over years	DA scheme in place New station DER	
Consumers	Four Mile Substation	Load relief needed	Targeted EWR and DR	Customer participation in EE and DR programs

DTE	Phase 2 Geo-Targeted NWA	Load Relief	Targeted EWR, DR and energy storage	Customer participation in EWR and DR programs, utility-owned storage
	O'Shea Solar Park	Power Quality Support for solar site	Battery	Utility-owned
	EV + Storage Project	Behind-the-meter load management	Battery	Utility-owned
	Mobile Battery Trailer	Operational support	Mobile battery system	Utility-owned

Joint Commenters' Response

There were several positive aspects of the utilities' NWA pilot proposals.

- The Joint Commenters endorse the use of geotargeted energy efficiency and demand response as a cost-effective approach to providing load relief (and thereby deferring capital spending); and,
- The Joint Commenters commend Consumers for applying the learnings from its Swartz Creek pilot to inform the design of its planned Four Mile Substation project.

The Joint Commenters recommend that for each pilot included in their next set of distribution plans, the utilities articulate:

- A hypothesis regarding expected (improvement in) performance metrics;
- A methodology for measuring (improvements in) performance metrics; and,
- A plan for reporting (improvements in) performance metrics.

The Joint Commenters also suggest that the Company proposes a methodology for identifying potential areas for NWA and general NWA suitability criteria. The Joint Commenters recommend that the Commission work toward adopting uniform NWA suitability criteria, and more transparency into the utilities' development and use of NWA suitability criteria would help the Commission in this effort.

The Joint Commenters further recommend that the utilities explore the ability to procure and deploy customer- or third-party owned resources (service solutions) in future pilot proposals. Utilities seeking to incorporate customer- or third-party-owned resources in future NWA pilots might consider Advanced Energy Economy's August 14, 2019 presentation, which detailed innovative ways in which utilities could deploy cost-effective service solutions without compromising their financial health.

CONCLUSION

The Joint Commenters appreciate this opportunity to provide comment on the utilities' HCA and NWA pilots. We urge the utilities to respond to the questions we have posed in these comments at the September 18, 2019 distribution planning stakeholder meeting hosted by the Commission. We submit that the recommendations we have provided in these comments will improve the utilities' proposed HCA and NWA pilot proposals, and we urge the utilities to adopt and incorporate our recommendations in their distribution planning processes.

Respectfully submitted,

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