Case No. U-22065

COMMENTS OF SENSE LABS INC. (SENSE)

Sense respectfully submits the following comments in the Michigan Public Service Commission Case No. U-22065, addressing the discussion questions set forth in the Commission's April 30, 2026 order and informed by the technical conference held July 14, 2026.

I. Statement of Interest

Sense is a grid-edge intelligence company that partners with electric utilities to unlock value from advanced metering infrastructure. Sense's software runs directly on AMI 2.0 meters, processing high-resolution electrical signals in real time to generate insights for both grid operations and the households behind those meters with no additional hardware in the home. Sense offers these comments as one provider in a broader category of grid-edge intelligence technology to help inform the Commission's understanding of what next-generation AMI functionality can enable.

Sense grid-edge intelligence software is designed to analyze high-resolution electrical signals to generate real-time, localized insights about the distribution system. This includes behind the meter load visibility with the disaggregation of loads and DERs; and front of the meter network conditions, asset performance, and system anomalies.

Sense’s approach to load visibility allows utilities to identify major end-use loads, monitor electrification adoption, and detect emerging capacity constraints. This granular visibility improves forecasting, distribution planning, and targeted program design. Unlike traditional aggregation-based analytics, Sense provides localized, actionable intelligence to utilities derived directly from next generation utility meters. This reduces the need for incremental hardware investments while increasing situational awareness across the distribution network. In parallel, we support customer-facing energy engagement initiatives through the Sense mobile application, enabling household-level visibility and measurable demand-side impact aligned with utility regulatory objectives. The Sense mobile application has been shown, through third-party analysis, to support significant and persistent energy and thereby cost-savings for consumers.[1]

In addition to load visibility capabilities, grid-edge intelligence, like Sense’s, directly supports earlier identification and localization of grid faults to improve reliability and reduce outage duration. The system identifies subtle anomalies associated with equipment degradation, vegetation interference, and line disturbances before they result in sustained outages. Utilities gain earlier alerts, improved localization, and enhanced situational awareness across feeders. This distributed detection model can support reductions in SAIDI and SAIFI, strengthen wildfire mitigation strategies, and improve crew dispatch efficiency. By operating at scale across

[1] Cadmus conducted a study for Alliant Energy in Wisconsin (“Home Energy Monitoring Report,” December 17, 2024; Prepared for the Public Service Commission of Wisconsin) and tracked more than 900 participants over multiple years, finding that real-time household energy visibility (in that case, delivered through Sense's platform) drove a 10 percent reduction in peak demand during summer events and 3.9 percent average annual energy savings that persisted and grew year over year, reaching roughly 518 kWh per household by the third year, with participating households saving an average of $135 annually and 85 percent reporting they intended to maintain the habits long term.

deployed AMI, Sense enables utilities to increase reliability performance without additional field sensors.

Sense addresses the eleven discussion questions in the order the Commission posed them, but at varying depth. Questions concerning meter hardware performance, communications infrastructure, and vendor-specific execution fall outside Sense's expertise, and the comment there is intentionally brief.

II. Questions 1-6: AMI 1.0 Outcomes and the Case for AMI 2.0

Sense defers to the utilities and Staff on the specific benefits realized or unrealized under AMI 1.0 in Michigan, and on the hardware, communications, and vendor considerations driving the case for AMI 2.0.

Sense's comments here are narrower and specific. Sense's grid-edge intelligence software does not depend on data being delivered to it from elsewhere. It runs directly on the meter's onboard computer, processing electrical signals locally, at the point they are captured. Grid-edge intelligence, like Sense, relies on the meter hardware having sufficient processing capacity, memory, data sampling, and application-hosting capability to run third-party software directly on the device.

This distinction explains part of why the AMI 1.0 limitations described at the technical conference on July 14, 2026 existed in the first place. Both DTE and Consumers Energy described AMI 1.0 as constrained by batch data processing and centralized analytics. DTE's technical conference presentation specifically identified batch feeds delivered several times a day as insufficient for real-time or near-real-time operational decision-making. That limitation reflects the hardware's onboard compute capacity as well as the communications architecture. AMI 1.0 meters were generally built to measure and transmit, not to host applications. AMI 2.0's onboard compute capability is what makes software like Sense's possible on the meter at all.

Sense recommends Michigan's AMI 2.0 functionality guidelines evaluate meter hardware specifically on its capacity to host embedded, third-party software applications on the device, alongside the metrology and communications specifications more commonly addressed in AMI procurement. This is a distinct evaluation criterion from data availability or transmission speed, and is an important determining factor of whether a given AMI 2.0 investment can support grid-edge intelligence software with the capabilities described in Section I above.

III. Questions 7-8: DER Integration Data

A. Grid-edge software running on the meter closes the DER visibility gap

Realizing DER integration value from AMI 2.0 depends less on the meter hardware itself than on what runs on it. A meter processing high-resolution electrical signals produces DER-relevant insight, such as real-time load disaggregation, detection of solar, EV charging, and correlation of anomalies to specific grid locations, only if software on the device is built to extract it. Sense's platform performs this processing directly on the meter, deriving these insights from the electrical signal itself rather than from data delivered to it after the fact.

Discussion during the July 14, 2026 technical conference recommended combining AMI data with alternative DER data sources, such as customer-owned inverters, aggregator platforms, and vendor-specific portals, to close gaps in DER visibility. The visibility gap that framing describes is real for utilities relying on interval-only AMI data. It is not, however, an inherent limitation of AMI 2.0 hardware. It reflects what a given AMI 2.0 software deployment is capable of extracting from the meter. A grid-edge intelligence platform running on the meter itself can close much of that gap directly, without the vendor-specific integrations, and data-handling complexity that come with incorporating third-party data sources.

Sense recommends Michigan evaluate AMI 2.0 DER integration capability first by asking what a properly deployed, on-meter software layer can already extract from the meter's own data, before assuming additional external data sources are required to close visibility gaps. Alternative DER data sources may still add value in specific circumstances, but they should be evaluated as a supplement to a fully activated grid-edge software layer, not a substitute for one.

The E3 whitepaper, *Compensating DER for Local Distribution Value While Protecting Affordability* (July 2026), independently reinforces the value of granular, location-specific DER data of the kind grid-edge software produces.[2]

B. Distinguishing edge-processing from data-export architectures

The July 14, 2026 technical conference also included discussion of a model policy for real-time usage data access from smart meters. That framework addresses the specific technical problem of enabling raw interval or waveform data to be exported off the meter, typically over Wi-Fi, to third-party clouds, under an open-registration, no-fee access policy.

Sense's architecture is built differently, and the distinction impacts consideration of any data access policy going forward. Sense's software processes signals on the meter itself. What reaches the utility or the customer is already-derived intelligence, not raw electrical signal exported to an outside system. Sense does not need the meter to broadcast raw data over Wi-Fi to a third-party cloud to deliver its value; the processing that would otherwise happen in that cloud happens on the device.

Sense recommends the Commission recognize that "real-time usage data access" is not a single technical category. An export-based model and an edge-processing model, of the kind Sense's platform represents, raise different data-access and privacy questions and call for different policy treatment. A data-access framework built solely around the export case risks inadvertently constraining, or misclassifying the requirements of, edge-processing platforms that do not export raw data.

IV. Questions 9-10: Lifecycle, Interoperability, and AMI 1.0/2.0 Coexistence

Sense's software is designed to run across AMI 2.0 hardware from multiple major meter manufacturers, so utilities pursuing next-generation AMI are not locked into a single hardware

[2] Cutter, E., Laundergran J., Sontag, M., Bonner, M.; "Compensating DER for Local Distribution Value While Protecting Affordability: Ensuring DER are a Grid Resource, Not a Cost Driver," July 2026, Energy + Environmental Economics (E3)

vendor to access grid-edge software capability. That portability, however, is not plug-and-play today. Running the same software across different meter manufacturers, different generations, different head-end systems, or different networks requires integration work specific to each combination. There is no industry-standard interface yet[3] that makes grid-edge software instantly portable across those boundaries, and Michigan's guidelines should reflect that reality rather than assume full interoperability exists.

A potentially more important consideration that full interoperability is a baseline expectation of capabilities of the selected meters. To ensure an AMI 2.0 meter can provide these consumer and grid side benefits, it should have high resolution, real time data sampling with a minimum of:

- Continuous sampling of voltage and current waveforms at the application processor level with at least 14,000 samples per second
- Raw energy data to be available to the application processor - not just summary information
- Synchronous voltage and current sampling
- Linear quantization, with 16 bits or greater for current and 14 bits or greater for voltage

It should also have the following minimum levels of computation and memory:

- 1000 DMIPS CPU processing power
- 50 to 256MB RAM memory, depending on software application
- 80 MB to 1GB Flash or other storage, depending on software application

And, it should have the following network capabilities:

- Ability to communicate limited amounts of data over the utility network
- Ability to connect to a home area network for consumer facing functionality

V. Question 11: Customer-Side Resources to Serve Load More Broadly

AMI 2.0 can support customer-side resources serving load more broadly by informing and driving behavioral campaigns to achieve overall load reduction as well as precision load management driven by real-time, on-meter visibility.

Broad, system-level demand response programs can rely on less precise statistical averages and generalized incentives, but become much more accurate and effective with granular load visibility. To truly maximize the flexibility and peak shifting capabilities of customer-side resources, however, grid-edge intelligence is essential. This approach allows utilities to identify specific load categories and conditions driving a localized constraint and address them directly, a much more targeted tool for using customer-side resources to serve load.

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[3] While there is not yet a fully defined industry-standard interface, the Grid Edge Interoperability and Security Alliance (GEISA) is an active industry stakeholder project defining an open, interoperable specification for grid-edge computing environments on smart meters and other devices. GEISA is focused on specifying the common operating environment and the interfaces required to enable interoperable meter-based applications. Security and interoperability driven by open technology and compliance testing ensure utilities can confidently create the best solution for their needs, and continue delivering reliable, safe, cost-effective power while meeting rapidly evolving grid modernization challenges. Vendors embrace the open ecosystem to accelerate innovation, increase security, and improve competitiveness around value-add services of analytics, AI, and grid optimization. The technical steering committee is comprised of representatives from Southern California Edison, Utilidata, and Sense.

When customer-side resources are engaged with granular, real-time visibility in addition to broad behavioral campaigns, AMI 2.0 can support customer-side resources serving load more broadly.

VI. Recommended AMI 2.0 Functionality Guidelines for Michigan

Drawing on the discussion above, Sense recommends the Commission's guidelines for next-generation AMI functionality in Michigan reflect the following:

- **Evaluate meter hardware for application-hosting capacity, not just metrology and communications.** AMI 2.0 guidelines should assess whether meters have sufficient onboard compute, memory, and data sampling to run third-party software directly on the device. This is distinct from data transmission speed and determines whether grid-edge intelligence is possible at all.
- **Assess on-meter software capabilities before requiring external DER data sources.** Michigan should evaluate what a properly deployed, on-meter software layer can already derive from the meter's own electrical signal before assuming aggregator platforms, inverter data, or vendor portals are needed to close DER visibility gaps. External sources should supplement a fully activated grid-edge layer, not substitute for one.
- **Treat "real-time usage data access" as two distinct categories.** Export-based models (raw data broadcast off-meter to third-party clouds) and edge-processing models (intelligence derived on-device) raise different privacy and access questions. A policy framework built only around the export case risks misclassifying or constraining edge-processing platforms.
- **Set minimum technical specifications as a baseline interoperability requirement.** Full plug-and-play portability across meter vendors doesn't exist today; integration work is still required case by case. The more consequential requirement is a hardware floor: continuous waveform sampling at 14,000+ samples/second, 1000 DMIPS processing, 50 to 256MB RAM, and low-latency network capability (under 750ms round trip) to support real-time applications.
- **Pair granular load visibility with behavioral programs to maximize customer-side resource value.** Broad demand response campaigns work off statistical averages. Real-time, on-meter visibility enables precision load management that targets specific load categories driving localized constraints, a materially more effective tool than behavioral campaigns alone.

VII. Conclusion

Sense appreciates the opportunity to contribute to this record and welcomes the opportunity to provide additional technical detail as the Commission's process continues.

Respectfully submitted,

SENSE