

# Rhode Island PUC Docket No. 22-49-EL

## Office of Energy Resources’ Position Statement

### Contents

Realizing Customer-Driven Benefits from AMF .....	2
Time-Varying Rates.....	2
Promoting Customer Use of the Home Area Network.....	3
Integration of AMF with Energy Efficiency Planning and Offerings .....	5
Third Party Data Access .....	6
Solar Marketplace .....	7
Meter Replacement Process.....	7
Pre-Sweep Reporting.....	8
Billing Arrangements for Distributed Energy Resource Customers.....	8
Implications of AMF for Distributed Energy Resource Interconnection.....	9
Equity.....	10
Meter Replacements for Renters .....	10
Opt-Out Rates for LMI Customers .....	10
Conclusion.....	10

Dear Commissioners:

The Rhode Island Office of Energy Resources (OER) respectfully submits these comments and requests for consideration regarding Rhode Island Energy’s Advanced Metering Functionality (AMF) Business Case and Cost Recovery Proposal, filed in Docket No. 22-49-EL.

Subject to the requests made below, OER supports the AMF Business Case Proposal by Rhode Island Energy (the “Company”), echoing the opportunity investing in AMF represented as part the climate objective to modernize the state’s electric grid in the McKee Administration’s Rhode Island 2030 plan. The proposal returns a robust benefit-cost ratio well above one across a variety of assumptions such as the inclusion or exclusion of certain benefits, customer participation rates, and different energy value projections. More importantly, AMF is an enabling technology that will allow critical future improvements, including the introduction of Time Varying Rates (TVR), more efficient and effective incorporation of variable generation resources, and improved system planning and reliability. Rhode Island will struggle to meet its clean energy and climate obligations without these needed investments over the next few years.

OER recognizes the concerns over costs and rate impact investments such as AMF may have, and that these will need to be carefully evaluated in the decision-making process for this effort, but we believe AMF deployment will provide long-term benefits through the incremental investment in a more robust, capable, and enabling technology that will provide benefits to ratepayers.

## Realizing Customer-Driven Benefits from AMF

OER believes that AMF will be a critical tool as Rhode Island works towards its climate reduction goals. AMF is an *enabling* tool, however; on its own, its value is limited. RIE characterizes numerous types of benefits that it anticipates will follow the deployment of AMF. Approximately 44% of these benefits are contingent upon changes in customer behavior. Thus, realizing the full potential of AMF requires successfully engaging customers in opportunities enabled by AMF.

Category	NPV (\$m)
Energy Insights - direct customer savings	\$44.0
Energy Insights - other benefits	\$110.7
Whole House TOU/CPP - Opt-In (20%)	\$84.1
EV/TVR Benefit - Opt-in (20%)	\$79.5
Sum of above subset of AMF Benefits	\$318.3
Total AMF Benefits	\$729.2
% of benefits	44%

*Source: Book 2 - AMF Business Case - Section 11*

## Time-Varying Rates

The implementation of AMF-dependent TVR is central to RIE’s AMF plan. More generally, the use of TVR to shift consumption patterns will be critical for Rhode Island to cost-effectively achieve its 2021 Act on Climate emissions reduction targets, particularly as the state derives increasing percentages of its generation from variable resources and as building and transportation electrification place new demands on the electric power system. The Amended Settlement Agreement approved by the Commission at its Open Meeting on August 24, 2018 in Docket Nos. 4770 and 4780 stipulates that “proposals in relation to time varying rates will be subject to consideration by the Commission in a separate docket.” Still, OER respectfully encourages the Commission to prioritize a prompt, thoughtful implementation of TVR.

According to Figure 8.1 of the AMF Business Case, RIE anticipates that “Future AMF Functionality,” would commence at the end of 2025, at the earliest. On Bates page 149 of the Business Case, the Company states that it “has made a commitment to return to the Commission in the future with a proposal for TVR,” and the Company models benefits attributable to TVR commencing in 2026. The Company’s filings do not appear to include commitments for a date by which they would file and implement a TVR, however.

---

*OER Request #1: The Commission’s AMF order should consider including a requirement for the Company to file a proposal to implement TVR by March 31, 2024.*

---

As noted above, the Company's filings indicate its intent to complete the rollout of AMF infrastructure before introducing (and perhaps before filing a proposal for) TVR. OER acknowledges that there may be some benefit to implementing TVR across the state at the same time. Specifically, such a rollout would ensure that all customers move to a new rate structure at the same time. Still, OER believes that rolling TVR out on a staggered basis as AMF installations occur, merits consideration.

This approach would offer several potential benefits. First, not waiting until AMF meters have been installed statewide would allow Rhode Island to begin to benefit from TVR sooner, perhaps by a year or more. Second, introducing TVR to subsets of customers (preferably, by municipality) as AMF meters are installed would afford the Company the opportunity to incorporate the experience of initial TVR customers, adjusting messaging or other implementation details as subsequent groups of customers are enrolled in TVR. Finally, having some customers on TVR while others remain on current rate plans would make it possible to evaluate the impacts of TVR by comparing different cohorts of customers, a technique similar to the approach used to calculate savings under the Home Energy Reports energy efficiency offering.

OER acknowledges that there may be technical challenges to a staggered AMF rollout, although it is our expectation that the ability to leverage the expertise and billing systems of the Company's Kentucky and Pennsylvania affiliates could make a staggered rollout practical. Additionally, the spread of community choice aggregation in Rhode Island provides a useful precedent for introducing rates that are specific to a community. Similar outreach and communication channels could be used to rollout out TVR to portions of the state.

---

*OER Request #2: The Commission should consider a staggered rollout of TVR to enable Rhode Island ratepayers to start benefitting from TVR as soon as possible. This would require the Commission to direct the Company to promptly file a TVR proposal (which would include an option for a staggered rollout), as outlined in Request #1.*

---

### Promoting Customer Use of the Home Area Network

As noted above, AMF is an enabling tool. Similarly, while TVR can produce benefits by changing customer behavior, realizing its full potential will require customers to be able to access information about their consumption and critical peak events easily, and to be able to enable "smart" devices to respond to price signals embedded in TVR rates. The testimony of Mr. Bonenberger, AMF Book 1 at 13:13-14, states that Rhode Island customers will be able to "adopt technologies that can automate their responses to time varying rates to make it easy for them to participate." Still, many AMF deployments fail to realize the opportunity for engaging customers: a 2020 report by the American Council for an Energy-Efficient Economy (ACEEE)<sup>1</sup> discussing the use of smart meters to achieve energy efficiency, demand reduction, and TVR found that "utilities are largely missing the opportunity to utilize AMI data." In its response to OER 1-1(c), the Company states that there are approximately 1,300 customer-owned, HAN-connected devices in the territory of its Pennsylvania affiliate (which has

---

<sup>1</sup> <https://www.aceee.org/sites/default/files/publications/researchreports/u2001.pdf>

approximately 1.4 million customers<sup>2</sup>) and 50 such devices in the territory of its Kentucky affiliate (which has approximately 429,000 customers<sup>3</sup>).

The Company should be expected to achieve higher engagement with its Rhode Island AMF rollout. We acknowledge that customer use of HANs is evolving, as is the technology itself (as evidenced by the use of a Zigbee-based HAN in Pennsylvania and Kentucky vs. Wi-Fi in Rhode Island). Still, ensuring that customers can easily identify, purchase, and use products that connect to their HAN to provide greater visibility into energy consumption and to automate the response of appliances and plug loads to price signals will amplify the benefits of AMF and TVR. To accomplish this, the Commission should require the Company to adopt specific criteria for devices that would be eligible to connect to the HAN, encourage the Company to align energy efficiency offerings to take advantage of the availability of a HAN, and require the Company to regularly report on the number of incremental and total devices connected over time.

In its response to OER 1-1(b), the Company provided general criteria that it “plans to use to identify devices that would be allowed to connect to the HAN.” Later, in its response to MDC 1–15(b), the Company notes that its Kentucky and Pennsylvania affiliates have adopted a ZigBee-based, “bring your own device” approach to allowing customers to connect in-home devices to their meter. The Company also states that it “needs to conduct an analysis of the impacts of connecting a device by Wi-Fi, as well as the types of devices in the market, before it can specify the types if [sic] devices to include.” While these responses are helpful, the criteria described by the Company are too vague. OER suggests that the Commission direct the Company to establish a specific set of criteria to be used to evaluate whether devices could be connected to the HAN and promoted to customers. To the extent possible, these criteria would include references to existing standards and avoid using highly subjective criteria, such as “flexibility and adaptability to meet evolving customer and electric distribution system needs.” This work should be completed before the implementation of TVR, so that customers can use device automation to maximize their ability to respond to price signals, as the Company itself envisions. The initial rollout of TVR will provide a unique opportunity to engage customers on TVR, making the availability of enabling devices at the time TVR is introduced particularly valuable.

---

*OER Request #3: The Commission should consider directing RIE to submit objective criteria to evaluate devices which could access the HAN and a process for identifying eligible devices (e.g., on a regular cadence, in response to manufacturer requests, etc.).*

---

Access to data through the HAN may provide new opportunities for energy efficiency and demand response programs. Energy monitors could enhance behavior-based efforts, and the ability to connect smart appliances and plug load devices via HAN may provide a new means to engage customers in demand response programs. OER acknowledges that connecting devices through the HAN may not be necessary or even the most effective means to engage customers in demand response – current approaches, such as enrolling specified Wi-Fi thermostats directly connected to a customer’s Wi-Fi

---

<sup>2</sup> <https://www.ppelectric.com/site/More/About-Us/Our-Company>

<sup>3</sup> <https://lge-ku.com/about>

network, have a demonstrated track record. Still, with the proliferation of connected devices and the increasing importance of managing load patterns, it will be critical for RIE to take a deliberate, thoughtful, and systematic approach to considering ways that energy efficiency programs maximize the potential value of AMF deployment, generally, and the HAN, specifically. Such an approach might, for example, promote and provide incremental incentives for devices capable of connecting to the HAN. We are not suggesting that the Commission take a prescriptive approach to how such opportunities should be reflected in program design. Instead, OER is highlighting the need to regularly consider the opportunities for such synergies between AMF and energy efficiency/demand response.

---

*OER Request #4: The Commission should consider directing RIE to include, as a component of its annual and three-year energy efficiency plans and potential DSM proposals, a discussion of opportunities for energy efficiency and demand response programs to leverage AMF capabilities, with specific reference to devices capable of connecting to the HAN.*

---

As acknowledged above, HAN technologies, devices, and customer engagement are nascent and evolving. OER appreciates the challenge of encouraging customer adoption of these devices. Still, given the scale of the opportunity, and given that the Company's filings envision the use of these devices, the Company should be required to report on the adoption of these devices.

---

*OER Request #5: The Commission should consider directing RIE to include a count of devices connected to the HAN as an additional metric to be included in the in the Company's proposed annual AMF Program Report.*

---

### Integration of AMF with Energy Efficiency Planning and Offerings

Building on the above, OER asserts that the interplay and overlap between energy efficiency offerings and AMF provide opportunities for synergies that will benefit customers as well as the need to deliberately avoid siloed action and double-counting benefits. On Bates page 7 of the Company's Business Case, the Company highlights that, with AMF, "customers can benefit through energy insights, personalized energy efficiency..., [and] demand response." Throughout the Business Case, the Company touts the benefits of its proposed Customer Portal. Still, there appears to be a lack of clarity about how efforts related to the introduction of AMF, including the rollout of a Customer Portal, will interact with existing energy efficiency efforts, such as the Company's Home Energy Reports. OER is concerned that AMF and energy efficiency efforts are siloed, possibly due, at least in part, to AMF efforts being primarily driven by PPL employees, while energy efficiency efforts are being overseen primarily by former National Grid employees. These silos compromise the effectiveness of AMF and energy efficiency efforts, yield inefficiencies, and increase the likelihood of double-counting benefits. Given the proposed inclusion of a chapter on Demand Side Management (DSM) updating the least cost procurement standards, we're confident that the Commission is aware of the challenges and importance of integrating energy efficiency and demand side management through AMF and other efforts. This

seamless integration is particularly crucial in all customer-facing activities; siloed approaches will lead to disengaged customers and squandering some of the potential benefits of AMF.

### Third Party Data Access

In addition to enabling customers to easily access and gain insights on their own usage data, customers must also be enabled to share their data with third-party service providers, with reasonable protections in place. In the same way that smart devices can enable a customer to better respond to TVR price signals, customers should also be empowered to work with third-party service providers to help customers explore all of the options available to control their energy usage, including energy efficiency, demand response, distributed generation, and energy storage.

Proposing solutions tailored to a customer's unique circumstances and providing estimates of the impacts on a customer bill will require service providers to be able to access a customer's historical energy usage. The same rationale led to processes that allow competitive energy suppliers to access a customer's historical energy usage, with the customer's authorization.

There are two potential mechanisms through which a service provider could access a customer's usage history. The first would be for a customer to access this information themselves (for example, by using Green Button Connect functionality) and then convey the data to the service provider. The second would be for the customer to provide authorization for the service provider to access the data directly, through a system such as the Company's Energy Supplier Portal. OER asserts that the first option is impractical and would not enable an ecosystem of customers and third-party service providers working together to manage customer energy usage.

In its response to OER 1-2, the Company states that it "has not yet determined specific access eligibility for the Rhode Island Energy Supplier Portal" and that it "will determine specific access eligibility as part of the detailed design phase for AMF implementation." The Company goes on to say that energy brokers and curtailment service providers are able to access its Supplier Portal in Pennsylvania, but that these parties are only able to access installed capacity data, and not customer usage.

Limiting authorized access to customer data to only competitive suppliers may inhibit the development of providers that help customers select, finance, and install energy efficiency and distributed energy resources (DERs). This, in turn, would serve as an impediment to Rhode Island benefiting from the TVR and the granular usage data made available by TVR. Other jurisdictions have acknowledged and embraced the potential benefits from data sharing: New York's Integrated Energy Data Resource (IEDR) Program is a "statewide centralized platform [that] will allow effective access to useful energy data and information from New York's electric, gas, and steam utilities... to support new and innovative clean energy business models that deliver benefits to New York energy customers."<sup>4</sup> Rhode Island can and should adopt a similar vision in order to enable customers to derive the greatest possible benefit from AMF and TVR.

---

*OER Request #6: The Commission should consider directing the Company to expand access to customer usage history through the Company's Energy Supplier Portal*

---

<sup>4</sup> <https://www.nyseda.ny.gov/All-Programs/Integrated-Energy-Data-Resource-Program>

*beyond competitive suppliers, contingent upon a set of requirements and processes described in Request #7.*

---

OER acknowledges the need to balance protecting customer data with the benefit of providing a straightforward means for customers to authorize their data to be shared in order to help them take advantage of solutions provided by service providers. Still, the precedent of allowing competitive suppliers to access customer data, with appropriate customer authorization and protections, can and should be used to design a similar process and protections for other types of service providers. This might require adopting a registration process similar to the one used for competitive suppliers.

---

*OER Request #7: The Commission should consider convening a working group to develop a set of criteria and registration requirements for service providers that have a valid interest in accessing customer usage history; this working group should also establish a process for authorizing the conveyance of this data to these third parties.*

---

## Solar Marketplace

On p. 49 of the testimony of Mr. Warnock and Ms. Reder in Book 1, the Company proposes to provide “an integrated marketplace for customer research of solar PV adoption.” In response to OER 1-5, the Company says that the full cost of the solar marketplace is included in its AMF filing, and that the Company will not receive any additional revenue from “a marketplace provider, solar installers, or other entities.” While OER is supportive of efforts to promote customer adoption of DERs, OER does not believe that it is appropriate for the Company to construct a solar marketplace if that marketplace includes referrals to specific installers or projects. Even if the Company is not receiving referral fees or other revenues from the solar marketplace, OER asserts that a utility-sponsored marketplace promoting specific installers or projects is not the best means to drive down prices and does not contribute to higher quality installations. OER supports efforts by the Company to provide education to customers on solar opportunities, short of a marketplace promoting specific projects. OER would be happy to engage the Company directly on opportunities to provide effective solar education.

---

*OER Request #8: The Commission should direct the Company to not develop a solar marketplace that includes links or referrals to installers, developers, or projects.*

---

## Meter Replacement Process

OER acknowledges the technical complexity of the work proposed in the Company’s AMF proposal and appreciates the detailed, thoughtful implementation plan the Company has provided, informed by lessons learned from previous efforts. Given that customers often turn to OER to help resolve challenging issues the customers encounter with their electricity provider, OER has an interest in ensuring a rollout that proceeds as seamlessly as possible. Below, we offer narrow recommendations that we believe will further improve the Company’s meter swap process.

## Pre-Sweep Reporting

OER anticipates that it will receive calls from customers involved in the type of challenging meter swaps that we understand the pre-sweep process is intended to identify, especially when this results in customers losing power for a prolonged period of time (i.e., longer than five minutes). In its response to OER 1-7, the Company expressed an ability to share information on issues identified during pre-sweeps but noted that it may not be able to share this information before the meter swap has been completed. OER appreciates the collaborative working relationship that the Company engages in across numerous segments of the energy sector and anticipates the Company's reasonable efforts to share status reports on progress in the deployment of AMF including the number of customers likely to be impacted by a more challenging meter replacement through the pre-swap process in advance of the meter replacement, to allow OER to anticipate and prepare for the increased call volume that will likely follow.

In response to OER 1-8 and OER 1-9, the Company notes that most residential swaps will require a loss of power and de-energizing of small solar PV systems typically lasting less than five minutes for the duration of the meter exchange. The Company states this interruption has not raised concerns with Pennsylvania or Kentucky customers given its brevity. OER agrees that the short interruption is unlikely to raise significant issues and stresses the value of being as specific as possible in customer communications. Some customer communications included in Appendix F of Book 2 do provide approximate meter installation times, but OER suggests this messaging could be further improved by better defining a "brief interruption of power." We believe that this could reduce the number of calls expressing concern over how long customers may lose power. OER suggests that the Company update the notification materials to be circulated 45 days, 21 days, and 1 day prior to a meter exchange to explicitly indicate the anticipated outage time of under five minutes, while still noting the possibility of longer outages.

---

*OER Request #9: The Company should be directed by the Commission to report on the count of expected challenging meter swaps in advance of the replacement of these meters and update customer communications to provide greater specificity in customer communications around expected duration of power interruptions.*

---

## Billing Arrangements for Distributed Energy Resource Customers

OER notes that it has received numerous calls specifically related to credit allocations for virtual net metering customers that have gone through a meter swap. Specifically, credit generation and transfers for these customers appear to not automatically resume after the new meter is installed. We raise this issue and ask that the Company ensure that its meter swap process addresses DER billing arrangements, especially those for virtual net metering customers. If the Company has any doubts about its ability to consistently ensure these billing arrangements are accurately maintained through the AMF implementation process, OER asks that the Company proactively communicate with these customers and ask that they check to ensure that their bills continue to be rendered as expected.



---

*OER Request #10: The Commission should consider directing the Company to review its process to ensure that billing arrangements associated with DERs (especially virtual net metering projects) are carried forward after a customer's meter is replaced.*

---

## Implications of AMF for Distributed Energy Resource Interconnection

The Company's plan rightly highlights some of the benefits of AMF for interconnecting DERs. Some of the anticipated benefits are contingent upon functionality included in the Company's Grid Modernization Plan (which, in turn, is contingent upon AMF), while other benefits appear to be specific to the implementation of AMF. Here, we focus our comments on benefits enabled solely by AMF deployment.

The Company's response to OER 1-13 provides a description of one specific way that access to data enabled by AMF could increase hosting capacity. Specifically, the Company illustrates how its "current analysis method" compares DERs' maximum rated output to minimum load conditions regardless of whether the *time* of minimum load conditions occur at the same time DER output approaches its nameplate capacity. The Company also illustrates how adding a time dimension to this analysis (i.e., examining the timing of load and DER fluctuations) could reduce the frequency with which the Company determines that upgrades are required.

Also, in its response to OER 1-13, the Company asserts that "it is unlikely that any changes will be necessary to the interconnection process" and that AMF data will "replace assumptions that have to be made without such data." The Company also states that it has not produced estimates for the degree to which AMF implementation could increase hosting capacity. OER appreciates the technical challenges associated with trying to provide an estimate and therefore is not seeking a specific target for increased hosting capacity. Still, we believe that the change in process illustrated by the Company's response to OER 1-13 is significant enough that it warrants a specific commitment from the Company. OER also suggests that it would be appropriate for the Company to provide additional details on what reliability metrics the studies will be based on (e.g., would the Company use a one day in ten year threshold, or some other metric?).

---

*OER Request #11: The Commission should consider including in its AMF order a requirement for the Company to update its interconnection study process to consider the timing of load and DER output, as illustrated in its response to OER 1-13.*

---

Interconnection timelines are a key challenge to the installation of DERs in Rhode Island. Given the availability of superior data and system upgrades included in the AMF filing, OER expects that the Company will reassess its capability to move customers through the interconnection process more quickly.

## Equity

OER believes that the introduction of AMF will provide an *opportunity* for low and moderate income (LMI) customers and other energy justice populations to benefit. The design of future TVRs will be critical to ensuring that this opportunity is realized. For the AMF implementation process, OER offers the following comments related to equity.

### Meter Replacements for Renters

Generally, OER is supportive of how the Company plans to serve renters through its proposed AMF deployment. As described in its response to OER 1-11, the Company notes that the customer of record on the account (which is likely the same person responsible for paying the bill) is authorized to decide whether or not to opt out of AMF. Still, OER anticipates that some tenants who wish to receive an AMF meter may face challenges from a building owner or manager that chooses not to or fails to provide access to meters for replacement. If the Company has a renter flag in its billing system, reporting on AMF out-outs by renter would help identify systemic barriers to AMF adoption by renters.

---

*OER Request #12: The Commission should require the Company to include in its annual AMF Program Report opt-out rates by tenancy (renter vs. owner-occupied), to the extent that such data is available.*

---

### Opt-Out Rates for LMI Customers

Similarly, given the potential benefits afforded by AMF to LMI customers, OER requests reporting on AMF opt-out rates for customers being served under the low-income discount rate (A-60).

---

*OER Request #13: The Commission should require the Company to include in its annual AMF Program Report opt-out rates for customers taking service under the low-income rate (A-60).*

---

## Conclusion

OER views the implementation of AMF to be a central component of a clean, resilient, and affordable energy system for Rhode Island. Given the dependency of other critical improvements, such as the introduction of TVR, on AMF, OER supports the swift deployment of AMF. Subject to the observations and recommendations included in this document, OER finds the Company's AMF implementation plan to be well thought-out and beneficial to the Company's customers. Therefore, OER respectfully requests that the Commission approve, while considering OER's requests, the Company's AMF filing.