

Advancing the Clean Energy Future



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April 8, 2019

Ms. Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit St., Suite 18
Concord, NH 03301

Re: Docket No. IR 15-296

NHPEC APR 19 AM 10:53

Dear Ms. Howland:

Attached please find the original and six copies of Acadia Center's response to the Staff Recommendation on Grid Modernization, filed in the above-referenced docket.

Sincerely,

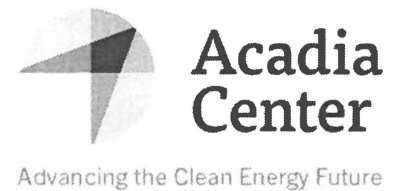
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Docket No. IR 15-296

Acadia Center Comments on Staff Recommendation on Grid Modernization

April 8, 2019



Need for Grid Modernization

The rules and regulations that drive decision-making about our energy grid are out of sync with technological advances and consumer expectations for a clean, reliable energy system. Clean, local energy resources like energy efficiency, distributed renewable generation, and energy storage are tools that can solve grid problems instead of relying only on building expensive infrastructure projects. Sophisticated metering technology can support innovations in how consumers pay and are paid for electricity, rewarding them for optimizing their energy generation and consumption. Updated rules, planning processes, and financial incentives can enable the adoption of technologies critical to meet New Hampshire's environmental goals and enhance consumer choice.

The recommendations included in the January 31, 2019 Staff Recommendation on Grid Modernization are one part of a comprehensive regulatory framework that integrates how parts of the new energy system can work to put the consumer at the center of the modern grid. Acadia Center served in the Working Group established by the Commission in Order No. 25,877. We applaud Staff's efforts to provide a more detailed roadmap, as the March 2017 Working Group report to the Commission contained several non-consensus areas. Acadia Center largely agrees with the Staff recommendations on rate design and utility planning but has concerns over the process that Staff has recommended to resolve and adjudicate areas of disagreement.

Procedural Issues

Staff clarified in the March 25th technical session that they envision convening working groups after a Commission order to approve Staff recommendations, in order to flesh out details on several topics where there is not currently consensus. Staff has identified such areas as potentially including, "rate design, cost-effectiveness analysis methodology, utility cost recovery, utility and customer data access, hosting capacity analysis, locational value analysis, metering, customer education, strategic electrification, DER pricing structure, consolidated billing, cybersecurity, and annual reporting requirements". (pg. 78) Acadia Center concurs with concerns raised by several parties in the technical session that these are central issues that require adjudication and the Staff timeline does not provide adequate time for the utilities to develop their IDPs after receiving any ruling on these issues from the Commission.

We believe that it would be more productive for the Commission to include in its initial order the items delineated in the Working Group report:

- Resolution of any Working Group non-consensus issues in the report
- Address any gaps identified and issues not addressed in the report
- Any additional guidance on the Commission's grid modernization-related goals and priorities
- Any guidance on integration of grid modernization with other related dockets (e.g. net metering, energy efficiency)
- Address subsequent IRP filing requirements in relation to the grid modernization filings
- Schedule for utilities to file initial GMPs
- Delineate a stakeholder input process to develop common assumptions for the GMP filing

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Integrated Distribution Plans (IDP)

Acadia Center fully supports combining the current Least Cost Integrated Resource Plan, filed pursuant to RSA 378:38, and the recommended grid modernization planning into an Integrated Distribution Plan. These topics overlap substantially, and regulators and stakeholders should use the IDP to provide the utility with up-front guidance with regard to future resources, grid enhancements and major capital expenditures. This guidance should provide utilities with greater flexibility and incentive to adopt emerging and innovative technologies and practices.

In the modern grid, customers are both sources of supply and demand. Traditionally, utilities and regional grid planners focused on maintaining the power grid for one-way flow of power from fossil-fuel generators over miles of lines to homes and businesses. To support growing energy demand in certain locations and maintain reliable service, utilities used infrastructure tools like new circuits, new substations, power lines, and larger conductors. Increasingly, states are seeking to shift the strategic focus of the electric utility to optimizing the electric grid—rather than the historical focus of building up the grid with conventional infrastructure. Cleaner and more cost-effective customer-side tools like energy efficiency, active load control, distributed generation, and demand response can be used instead of—or in combination with—traditional infrastructure projects for reliability. Transitioning to an IDP will help advance a new focus on improving overall system efficiency; reducing the need for redundancy while increasing system reliability and affordability; deferring or eliminating the need for long-lived infrastructure investments; and recognizing and incorporating the value of all available resources. Although this is a complex transition, reforms should focus generally on

- Implementing integrated distribution system planning that includes a wide range of new technologies and customer-side resources and uses distributed energy resources (DER) proactively to avoid future grid issues;
- Designing and investing in the grid to move towards an open, and flexible system that enables seamless DER integration; and
- Establishing a comprehensive cost-benefit framework and stakeholder processes for decision-making that reflects the broad public interest.

The IDP should serve to integrate resources such as demand response, active load management, and energy storage—both consumer-sited and utility-sited—into utility planning processes. It should:

- Ensure that utility forecasting practices and methodologies accurately reflect current and anticipated investments in energy efficiency and other distributed energy resources;
- Set expectations for utilities to develop the capabilities to gather and provide valuable data on hosting capacity, forecasting, and the impacts of distributed energy resources on the grid by requiring, for instance, smarter circuit monitors and foundational investments like advanced metering infrastructure (AMI), if the costs are justified by benefits;
- Establish a process to enhance transparency and visibility into utility planning processes and utility capabilities, such as: investment plans, current and proposed projects, forecasting outcomes and methodologies, system needs analyses and decision-making processes, and benefit-cost analyses' results and assumptions;
- Examine smart inverters as a requirement for distributed solar PV systems to improve grid management and to allow solar systems to operate under a greater range of grid conditions;

- Require the provision of high-quality, publicly available maps that are updated regularly and include information on the grid's hosting capacity—the amount of distributed energy resources that can be accommodated without adversely impacting power quality or reliability, and areas of constraint where adding distributed resources would particularly benefit the grid;
- Standardize interconnection processes for distributed generation and establish a grid connection guarantee; and
- Mandate evaluation of cost-effective DER by utility and regulator prior to approving transmission and distribution (T&D) investments in existing procedures.

A long term vision for utility planning could either resemble the Distribution Resource Planning (DRP) adopted in California, where utilities lead the charge to integrating DER through planning and investment, or the market-based reforms envisioned in New York, which transitions the utility to the role of market coordinator.

Staff in its report recommends that the IDP improve reliability, improve resiliency, increase operational efficiency, reduce costs and increase affordability, empower customers to use electricity more efficiently and lower electricity bills, enable DER integration, achieve operational excellence, provide competitive services, and reduce carbon emissions and environmental impacts. Acadia Center supports these general guidelines and also the specific content of the IDP proposed in section 5.2 of the Staff Report. In particular, the hosting capacity analysis and locational value analysis are crucial and we applaud the effort by Staff to integrate non-wires alternatives procurement into the IDP.

The recommended procedure for mapping (needs first, then attributes and functionalities, followed by gaps, and allowing each distribution system to vary based on needs), is a reasonable approach and allows flexibility for the different demands of service territories.

Consumer Protections

While innovative rates and technologies can provide consumers with enhanced control and costs savings, the Commission should ensure that clear consumer protection measures are in place to guard against potential risks. These protections should provide reasonable low-income discount rates and holistic protections from short-term special cost recovery measures for low-income customers, establish arrearage management programs, and promote safe interactions with the market with standards for third-parties who interact directly with consumers.

Staff recommends maintaining remote disconnect functionality in advanced meters. Acadia Center believes that any remote disconnect functionality must be subject to consumer protections that maintain disconnection protections, including seasonal, temperature-based, and vulnerable household protections. Requirements for personal contact with a household member before disconnection for nonpayment are critical to ensure health and safety. Consumers should be provided with reasonable payment agreements as an alternative to disconnection for nonpayment. Advanced metering should not be used to deny vulnerable populations the protections they currently have.

Consumer Engagement and Participation in Planning

Acadia Center strongly supports the recommendations in the Working Group report, which states that the Commission should establish a stakeholder engagement process that allows all interested stakeholders to provide input to be considered at key junctures throughout the plan development process including pre-planning, project identification and consideration, and project prioritization. Furthermore, Acadia Center and other non-utility stakeholders recommended consideration of the formation of a consumer advisory committee to ensure

stakeholders have a meaningful role. Staff instead recommends relying on a more traditional role for stakeholders, through working groups, testimony, and an undefined stakeholder review process after the submittal of the IDP plans.

Consumers are not only the pocketbook of the grid; they are increasingly the focus of new energy innovations. Improving the consumer voice in energy grid decisions is critically important. A consumer stakeholder advisory council could provide meaningful input into utilities' long-term grid plans and ensure that consumer and environmental benefits are maximized. The IDP process should include a way for stakeholders to have fair and meaningful engagement in key decision-making processes, especially those regarding the use of distributed energy resources in addressing system needs. This collaborative process would develop criteria and protocols for identifying whether local distributed energy resources can be used to defer or substitute for traditional infrastructure projects and require adoption of this criteria and protocol by utilities, and potentially include a permanent consumer board to provide stakeholder input on ongoing basis.

Cost Benefit Analysis and Cost Recovery

Decisions about the grid should be based on a calculation of cost-effectiveness that is aligned with the state's consumer, energy and environmental goals. Cost-benefit frameworks should be designed or expanded to fully reflect priorities such as reducing energy bills and reducing consumers' energy burden, addressing climate change, enhancing consumer control and choice, and system-wide efficiency.

Utilities are reluctant to make proactive investments in the grid – such as upgrading circuits to connect more roof-top solar, or to deploy advanced metering or communications systems, because it is unclear whether these investments fit the criteria that determine whether the utility can recover its costs and return. A separate cost recovery mechanism for utilities can also enable a transformative investment over a relatively short time frame, rather than wait for it to be a necessary part of reliability upgrades. Acadia Center supports a more transformative approach, as long as investments pass a robust benefit cost test. Establishing a common framework for evaluation of costs and benefits is important. This framework should be robust and should attempt to assign qualitative values even if quantitative values are not possible, and should incorporate an accurate cost of carbon¹. This is important for making the business case for grid modernization and incorporating all the benefits.

To support consumer control, we need the infrastructure to anticipate the market in some cases. For example, upgrading for two-way power flows needs to come before consumers attempt to install DER on a wider scale. In addition, advanced meter functionality must precede rolling out opt-out TVR offering. Otherwise, experience has shown that utilities will oppose increased DER and demand response if their grid isn't ready to accommodate it. The benefits from such grid mod investments will accrue over time as more consumers take advantage of new rates and technologies.

Advanced Meters

In the Working Group report, Acadia Center and other non-utility stakeholders recommended that advanced metering functionality should be deployed where cost-effective using the business case framework or, where not generally found to be cost-effective, in cases in which individuals or groups of customers are willing to pay to upgrade their individual metering system.

¹ The Rhode Island Benefit Cost Test (RI Test) as approved by the RI PUC in Docket 4755, could serve as a model.

Acadia Center still supports this position, and furthermore believes that where AMF is already installed, utilities (in this case, Until) should be required to make use of it with opt-out time vary rates (TVR) and other customer offerings right now. Acadia Center agrees that utilities without AMF should offer opt-in TVR with interval meters to start with, and only roll out AMF when the cost-effectiveness case can be made.

However, we believe that the cost-effective case will still require a degree of anticipating where the market will go, as discussed in the previous section. Staff recommendations on page 53 envision a gradual rollout out of grid modernization. The diagram of the DOE process on page 24 outlines a phased-in transition, focusing on technologies that are most crucial for reliability, resilience and operational efficiency first, and then focusing on distribution assets and grid service, and most importantly in our view, components that enhance consumer control and benefits. However, the smooth line of progress over time is most likely not an accurate depiction. Progress is more likely to be step-wise, and for many customer-side technologies, the technology will need to come before the market is able to fully develop.

Given the expense and the necessity of a communications backbone and back office to support advanced meter functionality (AMF), there is a pivot point after which the consolidated benefits support a more rapid deployment to avoid having to sustain two different infrastructures for two (or more) different sets of meters. Identifying this point is part of why a robust business case analysis is needed. It is also why the Commission needs to be careful in an initial opt-in time frame to not install a large set of nearly-AMF meters that then become stranded costs or worse, cut into the benefits of full AMF deployment and undermine its cost-effectiveness.

Rate Design

Acadia Center supports Staff recommendations that the IDP include a proposal for rate design. Acadia Center's principles for rate reform begin with general long-standing principles for rate design from the canonical 1961 book by James Bonbright, *Principles of Public Utility Rates*, which can be summarized as: 1) simplicity, understandability, and feasibility; 2) effectiveness at yielding revenue requirements, revenue stability, and rate stability; 3) Fairness in apportionment of costs and avoidance of undue discrimination; and 4) efficiency in discouraging wasteful use. In addition, Acadia Center proposes four modern rate design principles that are more specific to provide clear guidance to Commissions and other policymakers:

- Monthly customer charges should be no higher than the cost of connecting a customer to the grid and related customer service;
- Other components of electricity rates can be reformed to align customer incentives with cost drivers and the value customers can provide to the electric system;
- Self-generation consumed directly on-site should be treated the same as reductions in usage; and
- Ratepayers must be able to understand significant reforms to their rates and have a basis on which to respond and manage bills

Staff recommendations generally follow the recommendation made by the Working Group, and support the principles outlined above. Acadia Center agree that utilities without AMF should offer opt-in TVR with interval meters for now, and supports the long-term vision that opt-out TVR represents the goal for all customers. Acadia Center also applauds Staff support for maintaining low customer charges. This principal is fundamental as high fixed charges violate well-established regulatory principles, reduce incentives for energy efficiency and clean local generation, and result in higher bills for low-usage customers, who are disproportionately low income no demand charge for residential customers. Staff's recommendations on coincident peak demand charge and the

use of TVR for net-metering/generating are also in line with Acadia Center's modern rate design principles.

Performance Metrics

Performance incentives mechanisms (PIMs) for utilities have been used for many years, and these can be refined to include emerging performance areas such as system efficiency, grid enhancements, energy efficiency, distributed generation and environmental goals. By increasing the portion of revenue requirements recovered through performance incentives, while reducing the portion of revenue requirements that a utility recovers from the rate base, PIMs help to shift the financial incentive away from capital investments and towards achieving performance goals. In the long run, states and regulators should consider transitioning away from reliance on rate base revenue and give consideration to using transition charges as the energy system moves and resizes to a distributed model.

Performance metrics are another area where Staff has requested additional comments from stakeholders and envisions a possible working group to further discuss details. In the Grid Modernization Working Group Final Report, the group recommends that performance-based and/or outcomes-based metrics would be proposed in the utilities' Grid Modernization Plan, and reviewed and approved by the Commission. Data would then be collected to inform establishment of performance-based and/or outcomes-based mechanisms, which could be implemented after tracking grid modernization targets for a long enough period to establish a baseline.

Staff recommends keeping traditional infrastructure metrics (SAIDI, SAIFI, CAIDI) and developing incremental grid mod and distribution investment metrics. As an example of incremental new metrics, Staff mention total number of customer outage minutes avoided due to grid mod investments and reduction in peak demand due to grid mod investments. Performance metrics would be evaluated and based on an individual utility's existing infrastructure and operational architecture, including processes that currently integrate distribution assets with the necessary control, as well as data availability. As IDPs are proposed, additional metrics that accurately represent incremental grid mod investments, as well as all distribution investments, will need to be developed and will vary from utility to utility.

Acadia Center agrees that the potential PIMs highlighted by Staff would be appropriate. In the future, the incremental grid mod PIMs should be integrated with traditional PIMs so they are evaluated in a consistent manner and the incentives to not work against each other. The future target for PIMs should be to apply to all utilities, bringing their functionality and benefits to consumers into alignment, and function across the silos established by regulatory proceedings.

When designing performance incentive mechanisms, Acadia Center recommends that the Commission consider the following five principles developed by Commissioner Anthony of the Rhode Island Public Utilities Commission².

- Principle 1 – A PIM can be considered when the utility lacks an incentive to better align utility performance with the public interest
- Principle 2 – Incentives should be designed to enable a comparison of the cost of achieving the target to the potential quantifiable and cash benefits.

² Memorandum: Principles for Performance Incentive Mechanisms. Available at <http://www.ripuc.org/eventsactions/docket/Open%20Meeting%20Notice%203-18-19.pdf>

- Principle 3 – Incentives should be designed to maximize customers' share of total quantifiable verifiable net benefits
- Principle 4 – An incentive should offer the utility no more than necessary to align utility performance with the public interest
- Principle 5 – The utility should be offered the same incentive for the same benefit. No action should be rewarded more than an alternative action that produces the same benefit. (rather than prescribing activities)

Conclusion

It is time to for New Hampshire to construct a fully integrated, flexible and low carbon energy and grid network. Acadia Center urges the Commission to direct utilities to enact the rate design reforms and integrated planning process detailed in the Staff report. However, the Commission should take care to fully clarify and adjudicate on gaps and unresolved issues identified by Staff before utilities begin the IDP process. Thank you for the opportunity to comment.

For more information:

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