



**Acadia
Center**

144 Westminster Street
Suite 203
Providence, RI 02903-2216
401.276.0600
www.acadiacenter.org

February 18, 2016

Cynthia Wilson-Frias, Deputy Chief of Legal Services
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

Re: Request for Comments on a Docket to Investigate the Changing Distribution System

Dear Ms. Wilson-Frias,

Acadia Center respectfully submits the following comments in response to the Rhode Island Public Utilities Commission Request for Comments on a Docket to Investigate the Changing Distribution System issued on February 5, 2016.

Acadia Center is a non-profit, research and advocacy organization committed to advancing the clean energy future, and is at the forefront of efforts to build clean, low carbon, and consumer-friendly economies. Reliable information, comprehensive advocacy, and problem solving through innovation and collaboration characterize Acadia Center's approach.

Optimizing distribution system expenditures

In its February 5th Memorandum, the Rhode Island Public Utilities Commission ("PUC") rightfully identifies the challenges of optimizing ratepayer expenditures on the state's electric distribution system to meet multiple and varied objectives, including reliability, affordability, and minimizing environmental impacts. In the past, programs to achieve each of these objectives have largely operated and been assessed independently: substations and feeders are constructed to maintain reliability; rate relief and arrearage management aids affordability; incentives for renewable energy projects reduce greenhouse gas emissions from power generation. Now, new energy technologies and strategies- such as energy efficiency, active load management, storage, time-varying rates, and rooftop solar- present opportunities to cost-effectively achieve multiple objectives. For example, Rhode Island has long recognized that energy efficiency is the least cost resource to optimize the electric energy system. Energy efficiency improves capital utilization, minimizes infrastructure needs, and assists consumers to manage and lower their bills. The PUC has identified the opportunity to shape a more optimized- not larger- energy system and should strive for comprehensive reforms that will ensure that the state's utilities give due consideration to creative new ways to manage and optimize demand as well as reduce, defer, or avoid capital investments in traditional grid infrastructure by strategically deploying Distributed Energy Resources ("DERs").

There are a number of interdependent reforms needed to achieve the PUC's objective of a least cost energy system that advances the state's environmental and consumer priorities. Acadia Center's UtilityVision identifies reforms to utility regulation needed to move towards a fully integrated, flexible, and low carbon electric grid.¹ The categories of reforms are: integrated distribution system planning; aligning utility incentives with consumer and environmental goals;

¹ Acadia Center's UtilityVision is available at: <http://acadiacenter.org/document/utilityvision/>

updated roles for regulators, utilities, and stakeholders; and recommendations for fair pricing and consumer protection for all. The comments below focus on comprehensive planning, barriers presented by the current utility business model, and the need for cost-benefit calculations to reflect the public interest.

New technologies and DERs are dramatically increasing the ability to optimize energy consumption in the electric energy system. Traditionally, the solutions to problems such as overloaded facilities, low voltage, stability response, and other contingencies have been transmission and distribution capital projects: new circuits, new substations, or larger conductors. As technologies improve the range of alternative, cost-effective tools for reducing peak demand and optimizing grid performance has grown to include targeted energy efficiency, demand response, time-varying electric rates and automated appliances, and electric vehicles that can also serve as energy storage.

The Rhode Island PUC has already institutionalized a process by which National Grid, the primary distribution utility, systematically identifies and deploys these DERs to reduce peak demand and optimize grid performance in order to defer more expensive grid investments and deliver consumer savings. This process is currently being demonstrated by National Grid's DemandLink pilot in Tiverton and Little Compton. This pilot, and others from around New England and New York, represent a significant step towards an optimized energy system that is lower cost and cleaner. However, it still remains the case that the financial incentive structure that drives investment decisions rewards equity investment in transmission, distribution, and natural gas infrastructure and therefore systematically under-develops and deploys DERs to optimize grid utilization and reduce infrastructure expenditures. Utilities are not rewarded for improving the performance, or power utilization factor, of the grid, nor are they expected to maximize the benefits of energy efficiency, renewable energy, and other distributed energy resources. As a result, utilities have little incentive or institutional capacity to plan for, or even coordinate, how to strategically implement DER to provide capacity.

In order to look more fully at the reforms needed to optimize Rhode Island's energy system, Acadia Center recommends that the PUC consider some of the key challenges in advancing an integrated distribution grid, namely:

- Ensuring that utility distribution planning is fully integrated and coordinated with energy efficiency and distributed generation programs to avoid over-investment in infrastructure;
- Understanding the full range of potential for DER to reduce consumer expenditure on distribution infrastructure and maintenance;
- Taking steps to change utility incentives to focus on delivering energy services rather than maximizing capital investments and identifying ways to encourage utilities to be partners in delivering a lower cost and more diversified energy system;
- Developing rates and price signals to direct investments in DER where they are more effective; and,
- Building a process to evaluate a range of traditional and DER options and scenarios on the basis of common standards and level criteria, such as costs, benefits, risks, and public policy goals. Acadia Center elaborates on this factor below.

Consistent and comprehensive valuation of energy resources

In the February 5th Memorandum, the PUC asks for comment on costs and benefits that can be evaluated across the energy system. Acadia Center commends the PUC for investigating this issue: comprehensive and consistent

valuation of the processes regulated by the PUC will help level the playing field, correct for systematic under-deployment of DER, and ensure that reliable grid operations and public policy objectives are achieved at the least cost. Acadia Center recommends that the PUC consider a wide range of benefits and costs, including but not limited to:

- Electric delivery costs;
- Generation supply and capacity costs (including demand-reduction induced price effects);
- Changes in fuel prices;
- Reliability benefits;
- Impact on reducing peak demand;
- Savings from switching to electric end-uses for heating and transportation; and
- Changes in greenhouse gas emissions.

Specifically, many of elements necessary for proper characterization of benefits on the electric system are identified and quantified in the “Avoided Energy Supply Costs for New England” study.² This includes: natural gas prices; fuel oil prices; embedded and non-embedded environmental costs; electric capacity prices; wholesale electric energy prices; transmission and distribution costs; and market price suppression effects.

In order to achieve a cost-effective distribution grid that advances consumer and environmental goals, the cost-benefit framework should not be limited to costs and benefits to the distribution system. The cost-benefit framework should capture impacts to the energy system broadly, including costs and benefits realized by utilities, consumers, and society.

Estimated costs may include, but not be limited to, utility capital investments; operations and maintenance; program administrator expenses; returns, incentives, and other rewards; and customer costs. Acadia Center recommends that costs and benefits be transparently quantified and monetized. Where benefits cannot be reasonably quantified, the PUC should consider a qualitative impact analysis.

Decisions about the grid should be based on a calculation of cost-effectiveness that is aligned with Rhode Island’s consumer, energy, and environmental goals, and the existing cost-benefit frameworks should be expanded to fully reflect priorities such as reducing energy bills and reducing consumer’s energy burden, achieving Rhode Island’s greenhouse gas reduction targets, enhancing consumer control and choice, and system-wide efficiency.³

Conclusion

The Rhode Island PUC has identified a critically important challenge of optimizing energy expenditures in order to achieve reliability, environmental, and affordability goals. It is becoming increasingly viable to meet this challenge

² The report is available online at: <http://ma-eeac.org/wordpress/wp-content/uploads/2015-Regional-Avoided-Cost-Study-Report1.pdf>

³ Synapse Energy Economics “Benefit-Cost Analysis for Distributed Energy Resources,” prepared for the Advanced Energy Economy Institute provides additional details on designing a cost-benefit framework that is consistent with state policy goals. The report is available at: <http://www.synapse-energy.com/sites/default/files/Final%20Report.pdf>

with clean, cost-effective, and flexible DERs. Applying a consistent cost benefit framework across the energy system will provide the PUC with valuable perspective on the economic and consumer impact of different investment choices and guide decision-making. Acadia Center respectfully urges the PUC to consider the cost benefit framework within a wider scope of changes to utility planning and financial incentives needed to fully optimize the state's energy system.

Thank you for the opportunity to provide these comments.

Sincerely,

Abigail Anthony
Director, Grid Modernization and Utility Reform
aanthony@acadiacenter.org
401.276.0600