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ACADIA CENTER COMMENTS

INTRODUCTION

Acadia Center respectfully submits the following comments in response to the Rhode Island Division of Public Utilities and Carriers and Office of Energy Resources' Notice of Inquiry into the Electric Utility Business Model and Request for Stakeholder Comment issued May 1, 2017 in the Power Sector Transformation initiative.

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. Acadia Center's approach is characterized by reliable information, comprehensive advocacy, and problem solving through innovation and collaboration.

Acadia Center's responses flow from our EnergyVision report, which sets forth an ambitious pathway for states to pursue in order to achieve an economically productive, consumer-oriented, and low carbon energy future.¹ EnergyVision integrates four key strategies: (1) utilize market-ready technologies to electrify buildings and cars; (2) modernize the way we plan, manage, and invest in the electric power grid so that it facilitates new technologies, decentralized energy systems, and consumer control; (3) make continued progress toward a clean electric supply through increased investments in local renewable power; and (4) maximize investments in energy efficiency so that energy consumption is as efficient as possible.

Acadia Center sees the Power Sector Transformation initiative's overarching aim of developing a more dynamic regulatory framework to enable Rhode Island and its utilities to advance a cleaner, more affordable, and reliable energy system for the 21st century and beyond as a transformative step forward for state-level energy policy and one that is fully in line with our EnergyVision strategies. The state's energy future is dependent upon an ambitious, effective, and comprehensive response to the historic challenges and opportunities presented by the Power Sector Transformation. We accordingly commend the Division of Public Utilities and Carriers, the Office of Energy Resources,

¹ Acadia Center, 2014. "EnergyVision: A Pathway to a Modern, Sustainable, Low Carbon Economic and Environmental Future," (available at: <http://acadiacenter.org/document/energyvision/>).

and the Public Utilities Commission for initiating the Power Sector Transformation and seeking stakeholder engagement.

In February, 2015, Acadia Center released UtilityVision², a framework for reforms to utility regulation to move towards a fully integrated, flexible, and low carbon electric grid that empowers and protects consumers. The three categories of reforms are: (1) comprehensive, proactive, and coordinated planning for the electric grid; (2) updated roles for regulators, utilities, and stakeholders; and (3) fair pricing and consumer protection for all. In our recommendations below, we have sought to answer select questions that most implicate our EnergyVision and UtilityVision reports. Specifically, Acadia Center offers comments and recommendations in response to the Notice of Inquiry's questions regarding: 1) consumer protections; 2) how the utility should be compensated for functions it performs; and 3) the role of performance based regulation and metrics.

I. Recommendations on Consumer Protections

The current regulatory system provides numerous safeguards for consumers that should be maintained. Effective protections should be extended to new markets so that market participants operate in a fair, responsible, and consumer-friendly manner. Protections ranging from winter shut-off restrictions to licensing and code of conduct for companies that approach consumers are among the wide range of consumer protections needed. In particular, the regulator consumer protections that must be maintained include, but are not limited to:

- *Disconnection protections*, including seasonal, temperature-based, and vulnerable household protections. Requirements for personal contact with a household member before disconnection are critical to ensure health and safety. Consumers should be provided with reasonable payment agreements as an alternative to disconnection for nonpayment.
- *Ensure safe interactions with the market*, by overseeing the business practices of third-parties who interact directly with consumers.

II. Recommendations on Utility Compensation

The core structure of Rhode Island's current utility business model inhibits the transition to a modern, distributed energy grid. The primary way the utility earns revenue is by making capital investments on which the utility earns a specified rate of return set by regulators. This system gives utilities incentives to build or upgrade traditional infrastructure projects. However, this model is increasingly at odds with new technologies that can optimize the

² Acadia Center, 2015. "UtilityVision: Reforming the Energy System to Work for Consumers and the Environment," (available at: <http://acadiacenter.org/document/utilityvision/>).

energy system and with public policy goals to increase energy efficiency and consumer adoption of distributed energy technologies. Increasingly, Rhode Island's energy needs can be met by local energy resources and smart energy management, instead of more traditional infrastructure. But because a new system of financial incentives has not yet been created, utilities earn far less- or nothing at all- for facilitating lower cost, clean energy solutions.

The existing rules and financing incentives compel utilities to pick higher cost infrastructure investments when better choices for consumers and the environment may be available. An updated utility business model should seek to level the playing field for non-capital strategies (both utility-owned solutions and third-party investment), and incentivize the utility to engage in activities that would otherwise threaten its bottom line. Performance incentive mechanisms and revenue caps that encompass capital and operational expenditures are two key tools that regulators should consider utilizing to align utility profit with Rhode Island's public policy goals.

A handful of states are beginning to adopt new mechanisms for utilities to raise revenue. These innovations are in the early stages of adoption and implementation and there is not enough data or experience for Acadia Center to recommend them, but they are worth monitoring. In the New York Public Service Commission's "Order Adopting a Ratemaking and Utility Revenue Model Framework," the Commission describes three new earnings opportunities for New York utilities: 1) Platform Service Revenues; 2) Non-Wires Alternatives; and 3) Earnings Adjustment Mechanisms.³ The Platform Service Revenues and Non-Wires Alternative revenue approaches are described in this section, and Earnings Adjustment Mechanisms are described in section III of these comments.

Under the Platform Service Revenue concept, market participants pay fees to the utility for new services and products. In National Grid's recently filed rate case in New York, the utility proposes a Platform Service Revenue associated with the creation of a Residential Solar Marketplace.⁴ The Residential Solar Marketplace is described as an online marketplace that will provide consumers with individualized guidance on solar technology provided by EnergySage and access to a network of local solar providers. National Grid proposes to receive a portion of the fee that solar providers pay to EnergySage to acquire customers through the marketplace. If revenue from the market place is higher or lower than forecast, the utility will share the difference with customers on a 50/50 basis.

³ New York Public Service Commission Case 14-M-0101, May 2016, "Order Adopting a Ratemaking and Utility Revenue Model Policy Framework."

⁴ New York Public Service Commission, Docket 17-E-0238, "Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service."

In a step to level the playing field for non-wires alternatives (NWA) to compete with traditional infrastructure investments, New York Public Service Commission issued an Order on January 25, 2017 approving a shareholder incentive to reward Con Edison for deploying distributed energy resources (DER) to defer or avoid traditional transmission and distribution projects and deliver net benefits to ratepayers. The PSC approved a shared-savings model that uses a benefit-cost framework to determine the difference between the net present value of DER and the traditional infrastructure solution. The PSC found that this reward structure effectively signals the utility to find the most cost-effective grid solutions for ratepayers and advances additional energy and environmental goals.⁵ The California Public Utilities Commission is taking similar steps to resolve the conflict between bringing more DER online and ensuring they do not harm utilities' profits. In December 2016, Commissioner Florio issued an Order creating a model to financially incentivize utilities to adopt NWA. The Order will incentivize the deployment of cost-effective NWA that displaces or defers utility spending on infrastructure by offering the utility a reward equal to 4% of the payment made to the DER customer or vendor.⁶

As stated above, whether these innovations in how utilities raise revenue will be successful in achieving their intended outcomes and creating new values for consumers is an open question. Acadia Center recommends that Rhode Island regulators monitor the implementation of these reforms to the utility business model.

III. Recommendations on Performance Based Regulation and Metrics

One major function of public utility regulation is to align the incentives of regulated utilities with the goals of the public. By rewarding rapid expansions of the utility's capital base, cost of service regulation worked well to meet the goals of providing universal access to safe, affordable, and reliable service. Now, our energy system is transitioning and dynamic efficiency (*i.e.* forward looking investment efficiency) is least well-served by the current framework for

⁵ New York Public Service Commission, Case 15-E-0229, Petition of Consolidated Edison Company of New York, Inc. for Implementation of Projects and Programs that Support Reforming the Energy Vision, Order Approving Shareholder Incentives. January 25, 2017.

<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=47911>

⁶ California Public Utilities Commission, Decision 16-12-036, Rulemaking 14-10-003, Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Distributed Energy Resources. December 22, 2016.

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M171/K555/171555623.PDF>

ratemaking.⁷ New technologies and grid management tools offer non-infrastructure approaches that are potentially less costly and better aligned with consumer-and environmentally-friendly outcomes. In this dynamic environment, cost of service regulation limits regulators' ability to respond to present and future industry trends and challenges.

Performance based regulation (PBR) is being explored as an alternative to address the challenges of cost-of-service regulation. PBR describes several regulatory tools to align utility performance with societal value. Some PBR models are designed to address the economic inefficiencies of cost of service regulation, while others motivate the utility to create new values for consumers.

- **Multi-year rate plans:** Acadia Center supports the concept of a multi-year rate plan. The multi-year rate plan should be based on comprehensive grid planning that merges the traditional world of “poles and wire” with new technologies, modern strategies, and new procurement methods. Multi-year rate plans can be set in terms of either price or revenue caps. Acadia Center recommends a revenue cap, which does not reward utilities for increasing sales, but instead offers the utility an upside if costs are controlled effectively⁸. In the Rhode Island context, the Commission should consider how a multi-year rate plan with a revenue cap and decoupling work together. Acadia Center's high level understanding is that the Commission would set the multi-year revenue cap and then decouple to that cap each year. Acadia Center also recommends that the Commission consider applying the revenue cap across both operational and capital expenses to address the utility's infrastructure bias.⁹ Longer rate plans allow for more experimentation and flexibility than shorter rate plans.¹⁰
- **Setting the revenue requirement:** One challenge of setting a revenue cap for a multi-year rate plan will be establishing a benchmark for an efficient level of utility expenditure to meet the Commission's future expectations. In the context of grid modernization where the utility will be expected to perform new functions, it will be difficult to base a benchmark on a selection of similar utilities, or even to estimate expected inputs. If the revenue cap is set too low, the utility will be unable to provide shareholders with a fair return for their investment. If the cap is too high, ratepayer will overpay. It is also challenging to design

⁷ New York Public Service Commission Case 14-M-0101, May, 2016, “Order Adopting a Ratemaking and Utility Revenue Model Policy Framework.”

⁸ Whited, M., Woolf, T., Napoleon, A., 2015. “Utility Performance Incentive Mechanisms: A Handbook for Regulators.” Synapse Energy Economics, prepared for the Western Interstate Energy Board.

⁹ New York Public Service Commission Case 14-M-0101, May, 2016, “Order Adopting a Ratemaking and Utility Revenue Model Policy Framework.”

¹⁰ Aas, D., O'Boyle, M., 2016. “You Get What You Pay For: Moving Toward Value in Utility Compensation.”

attrition relief mechanisms in a way that

balances the interests of customers and utilities because

regulators and stakeholders do not have full information on the utility's level of efficient costs and in a future that is expected to be very different than the present, it will be challenging to identify a set of peer firms for comparison. There are a number of tools that regulators can consider to mitigate these risks, such as earnings sharing mechanisms, off-ramps, consumer dividends, and shorter rate plans (2-3 years), but most of these mechanisms will blunt the key incentives and performance incentive mechanisms for the utility to be more efficient and reduce costs and will increase regulatory costs. "Performance-based Regulation in a High Distributed Energy Resources Future" by authors from Pacific Economics Research Group and Synapse Energy Economics provides a thorough discussion of these challenges.¹¹

- **Performance Incentive Mechanisms:** In "Utility Performance Incentive Mechanisms: A Handbook for Regulators," the authors from Synapse Energy Economics describe how regulators can guide utility performance by setting performance incentive mechanisms. Among their conclusions, the authors note that performance metrics and incentives make regulatory goals and incentives explicit; offset financial incentives that are not well-aligned with the public interest; and provide greater regulatory guidance to address new and emerging issues, such as grid modernization, and areas where utilities are subject to economic and regulatory cost-cutting pressures. The key point here is that performance incentive mechanisms can be used to create shareholder value for outcomes that would not ordinarily be in the utility's financial interest.

The Synapse Energy Economics authors note that performance metrics and incentives can be used in any regulatory context: traditional cost-of-service regulation, performance-based regulation, or in new regulatory and utility models. Performance incentive mechanisms can also take different forms, including cash payments, shared savings, basis point adjustments to the rate of return, or an incentive rate of return on certain project. To put a finer point on the distinctions between these different choices, the authors of "You Get What You Pay For: Moving Toward Value in Utility Compensation," analyze the implications for total costs to consumers and the creation of utility shareholder value under different regulatory models. In a scenario analyzing the implications of different regulatory models on the utility's choice to solve a distribution constraint with a traditional infrastructure investments versus a utility-owned or third-party owned DER solution, the authors find that a revenue cap with a stretch factor provides the greatest distinction between shareholder value created by the traditional solution and the third-party DER solution, which is lowest total cost to ratepayers and offers the greatest shareholder value. The authors also analyzed the implications of an allowed rate of return on procurement of third party DERs and a performance incentive mechanism for reducing peak demand. The authors find that the former model- a rate of return on the operational

¹¹ Lowry, M., Woolf, T. January 2016, "Performance-Based Regulation in a High Distributed Energy Resources Future."

expenses involved with procuring third party DER- is not strong enough to overcome the utility's capital bias under cost-of-service regulation.¹² The later model- cost-of-service regulation with a peak reduction performance incentive mechanism- better aligns shareholder and consumer interests, but the cost-of-service regulatory model makes utility-owned DER a more profitable solution than the lower cost, third party-owned DER solution. The authors conclude that when operational expenditures can avoid capital costs, a revenue cap model does a better job of aligning shareholder and societal interests. The key point here is that the interactions between the regulatory structure and the performance incentive mechanisms need to be aligned towards a clear intended outcome.

With respect to specific performance incentive metrics and mechanisms, Acadia Center recommends that the Commission focus on the creation of new consumer values, such as reducing greenhouse gas emissions, resilience, resource diversity, customer choice, customer satisfaction, and reduced energy burden. The Massachusetts Department of Public Utilities' Order 12-76-B proposes performance metrics to measure progress towards four grid modernization objectives of: 1) reducing the effect of outages; 2) optimizing demand, including reducing system and customer costs; 3) integrating DER; and 4) improving workforce and asset management.¹³ The metrics proposed in Order 12-76-B are a good starting point for consideration. The literature on performance metrics, as well as experience and utility proposals from other jurisdictions, offers additional recommendations that regulators should consider. Acadia Center recommends that the Commission look to the following examples for specific metrics to measure advancements in optimizing demand, integrating DER, environmental performance, and customer engagement and participation.

Metrics for peak demand reduction and system load factor will add value because the current regulatory model does not sufficiently incentivize utilities to pursue system optimization through demand reduction. In New York Public Service Commission Case 17-E-0238, National Grid proposes specific metrics for peak demand reduction and improved load factor that the Commission should consider adopting in Rhode Island.¹⁴ Specifically, National Grid

¹² The authors explain that, to be effective, the rate of return on operational expenditures must be high enough to compensate for the size and length of the investment on which it is earned (as compared to the total potential earnings on a capital expenditure).

¹³ Massachusetts Department of Public Utilities, June 12, 2014. Order 12-76-B, "Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid."

¹⁴ New York Public Service Commission, Docket 17-E-0238, "Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service."

proposes an annual peak reduction metric that will measure net megawatt reductions from a 2016 weather-normalized system peak baseline. National Grid proposes to use the utility's own system peak as the baseline and to normalize the peak for the average weather of the past 20 annual peak days. (An alternative variation might be to adopt percentage reduction in peak load as a metric.) To track improvements in load factor, National Grid proposes to measure improvements in the weighted average load factor at 7 key substations. National Grid will use a baseline of the weighted average of the 2016 load factor at the selected substation and measure annual percentage improvements in that metric.

The examples of metrics designed to measure the integration of DER from Massachusetts, New York, and Illinois are similar. In Massachusetts DPU Dockets 15-120 and 15-122, the Joint Utilities propose to track the total number of grid-connected distributed generation facilities, nameplate capacity, and estimated output of each unit, and type of customer-owned or operated units.¹⁵ In New York, National Grid proposes a metric for DER utilization that is described as the sum of annualized megawatt-hours produced, consumed, discharged, or reduced by incremental DERs. In Illinois, Commonwealth Edison agreed to track the "number of locations and total MWs of customer owned distributed generation connected to the transmission or distribution system, broken down by connection to the transmission and distribution system," as well as load served by distributed resources and time required to connect distributed resources to the grid.¹⁶

Environmental performance metrics can indicate the extent to which the utility and its customers are reducing environmental impacts and are particularly important to tracking progress towards meeting the Commonwealth's climate change goals. [Synapse paper] provides examples from Illinois and the UK. Commonwealth Edison measures reductions in greenhouse gas emissions enabled by smart grid; specifically, changes in marginal emissions due to load shifting and reductions in peak demand, as well as avoided pollution due to reduced truck rolls. Commonwealth Edison also measures improvements in line loss reductions enabled by smart grid technology. Similarly, the UK's RII0 program uses metrics for electricity losses and business carbon footprint to measure environmental performance.

Customer engagement metrics can measure the extent to which customers are engaging in demand-side programs and adopting new clean energy technologies, which can reduce the costs of the energy system, give customers more control over their bills, and reduce greenhouse gas emissions. The Department should consider metrics that track participation in, or uptake of, energy efficiency, demand response, distributed generation, customer-sited storage, and electric vehicles by customer type (large commercial and industrial, low income, residential, and small business). In the Massachusetts DPU Order 12-76-B, the Department proposes a metric to track the number of customers on a

¹⁵ Massachusetts Department of Public Utilities, September 2015, Docket 15-120, "Petition of Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid for Approval of Grid Modernization Plan," and Docket 15-122, "NSTAR Electric Company and Western Massachusetts Electric Company each d/b/a Eversource Energy Petition for Approval of Grid Modernization Plan."

¹⁶ Whited, et al.

time-varying rate, and the number of customers using a web-based portal to access energy usage information or to enroll in energy information programs. Commonwealth Edison in Illinois tracks metrics similar to those proposed by the Department, and also tracks the change in energy consumption for customers that have viewed the web portal by usage levels, customer class, and low income customers. In their New York filing, National Grid proposes several indicators of customer engagement, including a metric for Demand Response Retention to track the number of customers who remain enrolled in direct load management programs from one year to the next, and two indicators of customer engagement and follow-through with the clean energy marketplace. National Grid also proposes an energy intensity metric to track the reduction in energy intensity on a billed-usage-per-customer basis for residential, commercial and industrial, and low income customers against a baseline trajectory of projected energy intensity from 2017 through 2020 (normalized for weather, economic development, and strategic electrification).

Conclusion

Regulatory models combining decoupling, multi-year rate plans, revenue caps and performance incentive mechanisms present an opportunity for the Commission to align the utility's incentives with Rhode Island's goals for climate change, clean energy, affordability, resilience, diversity, and consumer choice and empowerment. In its traditional structure, performance based regulation rewards utilities primarily for cost savings. In contrast, the Commission should focus on performance based regulation models that incentivize the utility to create new consumer values by considering the full range of new grid solutions and implementing those that have the greatest benefits to consumers and the environment. A new regulatory model's success should be judged by its ability to reduce overall cost to consumers and create a clear distinction in shareholder value creation between infrastructure investments and clean, consumer-friendly DERs.

The success of a multi-year rate plan, revenue cap, and performance incentive mechanisms is dependent on their design and implementation. Particularly, setting the revenue cap (and attrition relief mechanism) too high or too low will have undesirable effects on ratepayers and the utility, and in a context of grid modernization, past experience and comparable utilities may not offer reliable estimates of future investment levels. Given the scale of change under consideration, a gradual transition towards a new regulatory model would be warranted. The authors from Synapse Energy Economics and America's Power Plan offer several transition strategies. A gradual process of adopting performance incentive mechanisms could start by identifying the relevant areas of utility performance, developing metrics for tracking and reporting, setting performance targets, and then adding financial rewards or penalties. The Commission could also consider applying a revenue cap to a specific subset of expenditures, and increasing the scale and scope of earnings regulated under the new model over time.



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Rhode Island is thinking through the steps necessary to advance an energy system that looks very different from the one we have today- one that would guide infrastructure investments and policies to a more consumer and technology-friendly, decentralized system that can put the state on a path to deep greenhouse gas emissions and greater consumer empowerment. Acadia Center thanks the Rhode Island Division of Public Utilities and Carriers, Office of Energy Resources, and Public Utilities Commission for taking a comprehensive approach to tie together the utility business model, rate-making, customer-side energy resources, and planning. Acadia Center is thankful for the opportunity to provide these comments and recommendations aimed at modernizing the way we plan, manage, and invest in the power grid to empower consumers to have more control over their energy future.