Advancing the Clean Energy Future

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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 Distribution System Planning and Request for Stakeholder Comment issued June 2, 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 Carries, the Office of Energy Resources,

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

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

In February 2015, Acadia Center released UtilityVision,[2] 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) the strategic focus on utility planning; 2) increasing visibility into distribution system planning; 3) transparency; and 4) planning processes.

Many of our comments and recommendations below draw on Acadia Center's analysis of the Distributed System Implementation Plans (DSIPs) submitted to the New York Public Service Commission (PSC) by the two largest electric utilities in New York: Consolidated Edison and National Grid. While it is too early to draw best practices or lessons learned from New York's Reforming the Energy Vision (REV) Initiative, it is worth considering how the PSC and utilities are approaching the challenge of achieving New York's climate and energy goals. Acadia Center's summary and analysis of the DSIPs is submitted with these comments as Appendix 1.

I. Comments on the Strategic Focus of the Electric Utility

The New York REV seeks to shift the strategic focus of the electric utility to optimizing the electric grid- rather than the historical focus of building up the grid for reliability with conventional infrastructure. Specifically, the PSC directs the utilities to "maximize option value of the distribution system for consumers through better planning, system operations and management and vastly scaled integration of DER- without making unnecessary investments."[3] With a strategic focus on maximizing the option value of the distribution system, the utility will necessarily seek to improve overall system efficiency; reduce the need for redundancy while increasing system reliability and affordability; defer or eliminate the need for long-lived traditional infrastructure investments; and recognize and incorporate the value of all available resources. The elements identified in the NOI- forecasting, power flow analysis,

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

[3] State of New York Department of Public Service, October 15, 2015. Case 14-M-0101- Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, "Staff Proposal: Distributed System Implementation Plan Guidance," p. 2.

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condition assessments, solution identification, and hosting capacity analysis- will be essential to a more integrated planning process that is focused on maximizing option value. Acadia Center provides further details on forecasting; solution identification; and hosting capacity analysis as follows.

Forecasting

Utilities use various forecasting models to make informed decisions about investments and projects that will help relieve the future needs of the energy grid. These models make predictions about the energy consumption and demand based on historical data and current trends. DER adoption can have a significant impact on future energy system needs. It will be increasingly important for utilities to adequately forecast DER impacts and adjust the models accordingly as consumer adoption of DER increases. For example, ISO-New England has improved its forecasting practices and methodologies by including energy efficiency and solar PV and in 2017, changing the way they predict uncertainty of future energy efficiency savings. ISO-New England's process has resulted in more accurate forecasts reflecting lower or even negative growth rates for electricity consumption and peak demand than previously forecast (see Appendix 2). Updated forecasting practices and methodologies will help all stakeholders understand how investments in energy efficiency and DER contribute to a more cost-effective grid over time. Acadia Center recommends that Rhode Island regulators seek detailed and specific plans on how the distribution utility will evolve its forecasting methodology to incorporate current and anticipated DER impacts, including a discussion of how the utility will generate long range DER forecasts and ensure the accuracy of DER and load forecasts.

Solution Identification

Utilities have historically relied on traditional types of transmission and distribution infrastructure projects to meet system needs. Under a conventional approach, utilities have responded to a projected load growth in a given area by upgrading or replacing system equipment. Through the state's experience with System Reliability Procurement,[4] Rhode Island has recognized that local DER (often referred to as non-wires alternatives, or NWAs, in this context) can be used to defer or substitute for traditional infrastructure projects and deliver energy and economic benefits to consumers. Additionally, Rhode Island's recently approved Standards for System Reliability Procurement acknowledge that limiting the use of NWAs to load relief problems will miss opportunities to address a wider range of

[4] Rhode Island Public Utilities Commission, Docket No. 4655. National Grid's 2017 System Reliability Procurement Report. http://www.ripuc.org/eventsactions/docket/4655-NGrid-SRP2017(10-17-16).pdf

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electric distribution system needs.[5] Acadia Center recommends that Rhode Island's distribution utility should update its planning processes to fully reflect the new Standards for System Reliability Procurement, which involves considering the potential for NWAs more holistically and should continue to evaluate the suitability of NWAs to address a broad range of system needs. NWAs are likely to be increasingly competitive solutions to grid constraints as data-gathering and other technologies improve and utilities can exert more control and better manage the impact of DERs.

Hosting Capacity Analysis

Proactive steps to smoothly integrate DER will be essential to increasing system efficiency, as well as to creating an environment that encourages their addition to the grid. Key factors include analysis of hosting capacity – the amount of DER that can be accommodated without adversely impacting power quality or reliability under current configurations – and streamlined distributed generation interconnection procedures. Best practices suggest that hosting capacity should be calculated at the most granular level possible and the information should be regularly updated and available for DER providers to make informed decisions. Interconnection processes should be clear, efficient, and accessible to reduce barriers for generators to connect to the grid. Acadia Center recommends that distribution system planning should include analysis of the expected impacts of DER on system operations and load management, and the utility should be thinking proactively about how to handle these impacts. In addition to predicting and preparing for managing DER on the system, Rhode Island's distribution utility should be developing strategies to increase the quantity and value of DERs.

II. Comments on Visibility into Distribution System Planning

The New York DSIP experience is novel in that it has required utilities to make their internal decision-making more transparent. This evolution of distribution system planning has the potential for creating a collaborative environment that produces a constructive transition. What the DSIP process has done well in New York includes:

- Provide insight into key decision-making processes of utilities, especially regarding the use of DER in addressing system needs;
- Provide a baseline for current data-gathering capabilities as well as capabilities regarding load forecasting and accommodating DER;
- Involvement of stakeholders on various key issues.

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[5] Rhode Island Public Utilities Commission, Docket 4684. Proposed Revisions to the Standards, available from: http://www.ripuc.org/eventsactions/docket/4684-EERMC-RevStandards-Clean_4-7-17.pdf

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Some areas where Rhode Island regulators and utilities could improve on the New York experience include:

- Utilities should be expected to develop the capabilities to gather and provide valuable data on hosting capacity, DER forecasting, and DER impacts on the grid;
- Regulators and utilities should work together to determine the level of detail and specificity that is feasible, reasonable, and useful for the public and third-parties, and timelines for providing that information;
- The utility should describe its process for reassessing various processes, such as forecasting and strategic DER deployment, as technologies and data-gathering capabilities improve;
- Stakeholders should have opportunities for fair and meaningful engagement.

III. Comments on Distribution System Planning Transparency

Transparency in distribution system planning is key for enabling market development of DER and for encouraging a smooth transition to the modernized energy grid. System operators, planners, designers, third-party DER developers, market participants, regulators, customers, and other stakeholders are important users of customer and system data. Access to data- system data and customer data- could help customers make more informed decisions with regard to their energy choices and maximize the value of their DER investments. Customers who able to access their energy usage data on a real-time basis are more likely to proactively take steps to invest in energy efficiency measures and smart energy management technologies. This information can empower customers to participate in DER offerings, including energy efficiency and demand management programs, and to take advantage of time-of-use rates. Customer portals should present this information in a clear and accessible manner.

System data, in particular, information on the location and characteristics of grid needs, is crucial for third party DER providers to geographically target their DER proposals. Likewise, the ability to access customer data- with the proper privacy and security protections in place-could allow clean energy companies to tailor offerings to customers, or for customers themselves to take action on their energy use. Customer and system data availability should increase over time as monitoring and control technologies advance and DER adoption accelerates. Experience in New York would suggest that two of the most important aspects of ensuring data transparency are the level of granularity of the data and the frequency of updates.

Distribution system data is important to system operators and planners to improve reliability, resiliency, and service quality, and support system planning. Data like voltage, current, power factor, and real and reactive power can support day -ahead and real-time grid operations. Data on substation and feeder characteristics; coincident and non-coincident peak loads; load profiles; and forecasts of peak demand, energy, and DER penetration and output profiles are relevant to distribution system planning. DER providers will also have data that will be important to the utility, such as advanced notice for scheduled outages and technological capabilities, like the use of smart inverters and their

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functionalities. While system data can be measured at various levels (substation, feeder, circuit), advanced metering will allow data to be collected at lower levels.

With regard to specific datasets, data regarding load and DER forecasting and hosting capacity analysis is particularly important. Hosting capacity data needs to be location specific and at the most granular level possible. Hosting capacity maps may be a useful way to express this data. Several third-party DER providers and other stakeholders in New York have emphasized the importance of this type of data in addition to having access to locational value data which could include several datasets that provide information on grid needs and planned investments, among others. [6] Hosting capacity maps, locational value of DER, forecasting data, and circuit loading (customer type and mix) are all vital for third-party developers to be able to identify when and where DER projects are most likely to be beneficial and cost effective. The New York utilities point out that raw data is often insufficient to provide a useful picture to developers, and the utilities distinguish between basic data and value-added data, which has been interpreted and explained.

The needs for system and customer data should be nonetheless carefully balanced against customer privacy, cost of data collection of sharing, and cybersecurity concerns with regard to the disclosure of critical infrastructure information (CII). Customer privacy standard for an aggregated energy data should provide a reasonable expectation of customer privacy by not revealing or permitting determination of individual-specific energy use. Users of any customers or system data may also be subject to a non-disclosure agreement and other terms and conditions safeguarding the appropriate use of sensitive information.

Acadia Center further recommends that where utilities are not able to provide sufficiently detailed and granular data, utilities should provide information on their current data-gathering capabilities as well as concrete plans for improving their capabilities and providing the required data. Generally, datasets should be updated regularly and frequently for them to be useful for third-party planning and investment. Ideal update frequency would vary according to utilities' capabilities, including the availability of AMI infrastructure, and the type of data. As utilities gain the appropriate capabilities, customers would benefit from as close to real time energy usage as possible while

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[6] Several parties submitted comments on the Initial DSIP filings by utilities expressing the need for more access to better data including locational value data, forecasting data, and hosting capacity data. Comments were submitted on September 12, 2016 by SolarCity, NY-BEST, the Energy Storage Association (ESA), Sealed, Inc., Interstate Renewable Energy Council, and joint comments by the NRDC, Pace Energy & Climate Center, Solar Energy Industries Association, and Vote Solar.

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hosting capacity maps may only need to be updated quarterly or monthly. In New York, utility capital investment plans, load forecasts, and reliability statistics will be updated annually.

IV. Comments on Distribution System Planning Process

Much of the information that was requested for the New York DSIPs directly relates to the same DSP elements listed by the Rhode Island Power Sector Transformation Initiative. Several important pieces of this have already been discussed and should be made available to all users including forecasting methodologies, plans for seeking NWA solutions, hosting capacity analysis and mapping, plans and information regarding interconnection processes, and plans for increasing the quantity and value of DER.

Other plans and processes that may be useful for users include:

- Advanced Metering Infrastructure deployment plans
- Investment plans for delivery infrastructure
- Customer data management, customer portal, and cybersecurity plans
- Information Technology improvement plans
- Systems operations practices
- Volt/VAR optimization plans
- Benefit Cost Analysis calculations
- Electric Vehicle infrastructure development plans
- Information on ongoing and future DER pilot projects

These categories of information are valuable for all users including market actors, regulators, policymakers, and other stakeholders. Providing this information is a first step towards transparency of the inner workings and structure of utilities' decision-making processes and motivations. All this information needs to revolve around how DER is to be incorporated into the grid and into all planning processes to achieve a modernized, flexible, resilient, low-carbon energy grid.

Conclusion

The traditional energy grid built to reliably and safely deliver energy to consumers has successfully served its purpose for decades, but today's energy needs are more demanding. The paradigm shift toward a more integrated, resilient, flexible, adaptable, and efficient grid that meets the needs of energy consumers and supports the state's clean energy

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goals is the next logical step. Acadia Center commends the Power Sector Transformation for initiating this investigation into the structure and needs of a modernized energy grid.

Distributed System Implementation Plans in New York

Summary and Analysis

June 12, 2017

Background – What are the DSIPs?

On February 26, 2015, the State of New York Public Service Commission ("PSC" or "Commission") outlined a vision for transforming the state's energy grid to a more dynamic and integrated Distributed System Platform ("DSP"). The DSP is a key step towards achieving New York's broader climate and energy goals as outlined by the Reforming Energy Vision ("REV") initiative. The Commission envisions a modernized energy grid that is highly efficient and resilient, produces fewer air emissions, and relies increasingly on distributed resources and load management practices. At the core of the Commission's vision for the DSP is greater transparency and visibility of how utilities operate the grid and plan for system needs. The Distributed System Implementation Plans (DSIPs) fulfill this part of the DSP vision by pulling together and making available electric utilities' plans, processes, and capabilities for implementing REV and fulfilling the DSP.

The DSIPs are a source of public information and will be updated biannually. The intention of the DSIPs is to provide a comprehensive and holistic view of utilities' statuses and their plans to improve their processes and decision-making. The DSIP process does not include the approval of projects, rate design, or cost recovery mechanisms. The Commission has explicitly affirmed that these issues will be dealt with through other rate cases and other REV-related proceedings.

The DSIPs focus on how the utilities will facilitate, integrate, and manage the increasing presence of distributed energy resources (DER) on the grid. DER include energy efficiency and demand response programs, distributed generation such as solar and wind energy, energy storage, and electric vehicles. The traditional set-up and management of the energy grid is straightforward – electric utilities supply energy to customers through the distribution and transmission system. In the Commission's vision for the DSP, DER will become an increasingly integral part of a modernized, flexible, resilient, low-carbon energy grid. DER represent new, innovative ways of producing and conserving energy and managing energy load.

. The following summary and analysis encompasses a review of the DSIP documents submitted by the two largest electric utilities in New York: Con Edison and National Grid. In addition to individual utility DSIP documents, the utilities as a group collaboratively submitted a Supplemental DSIP. Much of the commentary in this review also applies to this Supplemental DSIP document. This summary and analysis will focus on six core areas: forecasting, increasing penetration of DER, planning for non-wires alternatives, plans for advanced metering infrastructure, electric vehicle supply infrastructure ("EVSE"), and DSP investments.

Forecasting – Improving How Utilities Predict System Needs

Utilities use various forecasting models to make informed decisions about investments and projects that will help relieve the future needs of the energy grid. These models make predictions about the energy consumption and demand based on historical data and current trends. DER adoption can have a significant impact on future energy system needs. It will be increasingly important for utilities to be able to adequately forecast DER impacts and adjust the models accordingly as the DSP is more fully realized and the prevalence of DER increase. For example, it has been shown that inclusion of energy efficiency and solar PV in load forecasts reveals that, in many states, electricity consumption is declining or growing much more slowly than previously forecast. Providing this information will help all stakeholders understand how investments in energy efficiency and local energy resources contribute to a more cost-effective grid over time.

The information provided in the DSIPs indicate that the electric utilities are incorporating DER into forecasting and are beginning to improve their methodologies to better incorporate DER impacts. However, the utilities have not provided detailed plans regarding the evolution of their forecasting processes nor have they provided adequate accounting of expected DER-specific impacts on load forecasts as DERs increase.

The Commission asked for a discussion on how different DER are expected to impact load forecasts. The utilities were specifically required to identify the impact of increased DER on forecasting methodology and to describe how they intend to ensure the accuracy of forecasts as DER increase. They were also expected to discuss plans to provide forecasting data across their service territory to outside stakeholders, including plans for providing more granular data than is currently available.

The utilities describe how DER are currently considered and provide descriptions of their methodologies in the DSIPs. They also provide DER-specific forecasting data and outcomes. They also give some descriptions of how they plan to improve their methodologies and how DER are expected to impact load forecasts and forecasting methodologies.

Acadia Center commends the utilities' efforts to include DER in load forecasting and to work to improve their forecasting methodologies. The initial DSIPs present a good start to making these important calculations and methods transparent. However, the DSIPs will be more useful if future iterations provided more granular forecasting data. The current DSIPs do not make it clear when or how this data will be provided. This information is vital for helping DER providers and their planning needs. Future DSIPs should also provide more specific details on plans for evolving forecasting methodology to better incorporate DER impacts. There should be detailed plans in place for how the utilities plan to generate long-term DER forecasts as well as a thorough discussion about the accuracy of DER and load forecasts. Finally, while the utilities are including DER in their load forecasts, the utilities do not expect DER to have a significant impact on load anytime soon, but they make no clear predictions as to when or how soon DER will increase to the point at which they will have a significant impact. The assumptions behind this assertion should be re-examined and re-evaluated as the DSIP process continues.

Increasing Penetration of DER – Plans to Prepare for and Enable DER

The DSP must be able to provide for smooth DER integration as well as actively create an environment that encourages their addition to the grid. Key factors include analysis of hosting capacity (i.e. the ability of different parts of the grid to host DERs without needing significant upgrades) and streamlined distributed generation (DG) interconnection procedures. Hosting capacity needs to be calculated at the most granular level possible and this information needs to be regularly updated and readily available for DER providers to make informed decisions. Methodologies for calculating hosting capacity need to be uniform across utilities to enhance consistency and reduce confusion across New York. The DG interconnection process should be clear, efficient, and accessible to reduce barriers for generators to connect to the grid.

The DSP vision requires that utilities transition from the role of service provider to the role of market coordinator. The Commission asked the utilities to assess the capability of the distribution system to accommodate and host DERs, including identifying specific high-priority locations. Utilities were asked to provide details about the expected impacts over the next five years for each type of DER and outline approaches to increase the quantity and value of DERs. They were also asked to describe their plans to improve the interconnection process for DGs.

The utilities have described their plans for approaching hosting capacity analysis. They have also provided or have made explicit their intent to provide a hosting capacity map which will spatially map out hosting capacity and DER potential in the utilities' respective territories. They have also made clear where that information will be available and how often it will be updated. However, initial plans suggest the data will only be updated infrequently. Greater emphasis on providing up-to-date information is needed considering the importance of this data for DG developers and other third-party DER providers.

The utilities have provided clear plans for improving DG interconnection by creating and maintaining a user-friendly portal, streamlining the process, and automating certain steps. The utilities provide general descriptions of the expected benefits and challenges of each individual type of DER on the system. However, the DSIPs do not provide any detailed analysis of expected impacts on system operations and load management for each type of DER – or of how these impacts will be handled. This is likely indicative of the current data-gathering capabilities of the utilities with regards to DERs.

The utilities are clearly making some effort to predict and prepare for managing DERs on the system and they have taken steps to make more data and information available. However, it is not apparent that they are prepared to be proactive in encouraging the increase of DERs. There are few descriptions, and no detailed plans, of projects and programs the utilities intend to use to increase the quantity and value of DERs beyond what they are already doing now.

Planning for Non-Wires Alternatives – Reforming How Utilities Address System Needs

Utilities have historically relied on traditional types of transmission and distribution infrastructure projects to meet system needs. Under conventional approaches, if energy demand is expected to increase in a given area, utilities will install larger equipment to handle the increased load. Local DERs that are used to defer or substitute for traditional infrastructure projects are known as non-wires alternatives (NWAs). As the energy grid becomes more dynamic and DER levels increase, some traditional projects may be able to be deferred or canceled altogether by NWAs. that may be more cost-effective than utility solutions. Rather than continuing to resolve all system needs by using the default traditional solutions, utilities need to prioritize programs and technologies that can avoid or postpone traditional infrastructure upgrades or expansions.

The Commission asked for detailed information regarding the utilities' experience with evaluating and implementing NWA projects. The Commission also asked for descriptions and locations of specific projects that are being considered or could be considered for NWAs. The DSIPs generally provide discussions on the utilities' approaches for addressing system needs and which categories of projects they consider to be suitable and not suitable for NWAs. Generally, the utilities have determined that NWAs are most suitable for projects aimed at relieving load. Additionally, a consistent concern among the utilities is that NWA projects require more lead-time than traditional projects, i.e. NWAs have been deemed unsuitable for more immediate needs.

In their DSIP, Con Edison provides a thorough discussion of the current opportunities for NWAs and discussed their one main NWA project – the Brooklyn Queens Demand Management (BQDM) project. In this case, the use of a combination of NWAs and traditional utility solutions is deferring a substation and expansion project that would have been required due to load growth in the Brooklyn and Queens Boroughs. The deferral of traditional investments in this case is resulting in over half a billion dollars in savings. National Grid describes why they have thus far been unable to implement NWA projects and asserts that they have considered and are considering NWAs for a variety of projects.

Con Edison's success in implementing the BQDM project is a great example of how NWAs can be used to address system needs in a cost-effective manner. However, this case should not be understood to support the idea that NWAs are only suitable for load relief projects. Limiting the use of NWAs to load relief problems will miss opportunities to address a wider range of electric distribution system needs. The utilities need to be considering the potential for NWAs more holistically and should continue re-evaluating the suitability of other types of projects. NWAs are likely to be increasingly good solutions to grid problems as data-gathering and other technologies improve and utilities can exert more control and better manage the impact of DERs.

Future DSIPs should provide updated assessments of the types of projects suitable for NWAs. They should also describe how utilities are making efforts to reduce the lead-time required for NWA implementation. The long lead-time the NWA process requires should decrease as the process becomes more standardized and utilities are more familiar with processing and implementing NWA projects.

Advanced Metering Infrastructure – Utilities' Plans to Enhance Information-Gathering

Perhaps the largest obstacle to achieving a dynamic, resilient, DER-integrated energy grid is how little data utilities can gather and share regarding the operation of the grid. Historically, metering systems only needed to fulfill very limited functions, namely, measuring the amount of energy a customer uses within a month. As the grid moves to a networked model, metering and communications technologies will empower consumers to make more informed decisions about energy usage, help policymakers make energy programs more effective, and enable utilities to more accurately (and in real-time) measure energy produced by distributed sources such as solar and wind. Advanced Metering Infrastructure (AMI) will allow utilities to gather more detailed data about energy use by customers. The ability to send and receive more information will enable DERs to have valuable interaction with the grid, and utilities will be better able to predict, control, and optimize the benefits of new technologies.

The Commission required utilities to provide summaries of the utilities' most up-to-date five-year AMI roll-out plans. The utilities both provided the results of their Benefit Cost Analysis for multiple plan options. Both found that full deployment of AMI provides the highest benefit to cost ratio. Con Edison referred to previous filings[1] and provided very basic descriptions of their plans for full deployment of AMI. National Grid provides a thorough summary in the DSIP and includes their full plan for roll-out in an Appendix.

The full deployment of AMI will greatly increase utilities' data-gathering and load management capabilities with regards to DERs. AMI will improve the accuracy of forecasting, as well as improve management of and

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[1] Con Edison filed an AMI proposal on November 16, 2015; the PSC authorized the proposal with contingent requirements on March 17, 2016.

understanding of the impacts of increasing DER, and provide many other benefits as well. In the DSIPs, the utilities acknowledge and account for the benefits of AMI and present supportive plans and cost-benefit analyses. Future DSIPs, however, should be consistent in including more details about their plans for deploying AMI rather than referring to other filings. Con Edison, for instance, should at least include their previously approved AMI plan as an appendix to their DSIP. The intention of the DSIPs is to provide a comprehensive source for this information that will be useful for all interested parties. The level of information currently provided is not substantial or complete enough to benefit stakeholders.

Electric Vehicle Infrastructure – Utilities' Plans to Enable EV Development

The State of New York has established clear goals for increasing the number of plug-in electric vehicles on the road. The increasing number of these vehicles will result in greater need for infrastructure, such as charging stations, to support those vehicles. The Commission has established an expectation that the utilities plan for and actively enable the deployment of electric vehicle supply equipment (EVSE).

The Commission directed the utilities to describe their current and future plans for EVSE deployment, including engagement with consumers and other stakeholders. The Commission specified the expectation that early planning for EVSE should include collaborative initiatives "that can set the stage for accelerated market growth."

In the DSIPs, the utilities have described past, current, and planned EVSE pilot projects. Pilot projects are essential for testing ideas and gathering data before full-scale deployment. For instance, some pilot projects are being used to help utilities gather data on how EVSE is used on a day-to-day basis, which provides insights into the impacts on system load. The DSIPs provide detailed information about these projects but do not, however, provide information about any specific plans for going beyond pilot projects. The Supplemental DSIP produced by the Joint Utilities includes a plan to develop and publish a joint EV Readiness Framework which will assist individual utilities in their efforts to increase EV adoption and support EV markets. This framework is an important step but the utilities have not articulated sufficiently detailed plans for how they intend to engage in the development of the EV market, enable EVSE deployment, or engage with customers.

Distributed System Platform Investment

The traditional energy grid system is structured around one-way power flow from power plans, traveling over transmission and distribution lines, for use in homes and businesses. The REV envisions multi-directional power flows, greater consumer engagement, and third party participation. In the REV, the Commission is directing the utilities to increasingly take on the role of coordinators of the energy market, rather than functioning purely as energy providers and infrastructure developers.

In the DSIPs, the utilities present investment plans to help them transition to their new role. Both utilities present plans to invest in AMI. The utilities also need to invest in systems and technologies that provide information that enables new entrants to participate in a networked and responsive grid. Specifically, utilities should upgrade communications and metering systems, data analytics and data management systems for DERs, and invest in grid operations like voltage control and protective relays. DERs increase system flexibility, but also create more variability in energy use and supply that the utilities will need to handle. These new systems and capabilities will be important for enhancing data-gathering, load management, and integration of DERs, which will in turn increase grid reliability and efficiency. In addition, customer engagement must be improved through understandable billing and secure data exchange platforms.

Conclusion

The DSIP process is critical to implementing REV and achieving New York's climate and energy goals. It is a first step towards a new energy grid and a novel way of planning the grid. The DSIPs offer a transparent and comprehensive view of how utilities are preparing for and making the way for DER. As DER increases, it will become ever more important to maintain that transparency and ensure that the transition to the DSP is as smooth and efficient as possible.

The utilities will need to continually evolve their forecasting methodologies, particularly their methodologies for forecasting DER. They will also need to plan beyond accommodating DER to the proactive encouragement of DERs on the system. This will include using DER solutions to resolve issues with the grid. NWAs are a unique opportunity to decrease or limit costs for utilities, and therefore consumers. Utilities will need to continually re-assess NWA suitability criteria as technologies, systems, and processes improve for procuring and managing DERs. A major technological step that will aid each of these issues is the deployment of AMI across the entire energy grid. The completion of full AMI deployment will require time and money but the enhanced data and control capabilities will greatly advance the development of the DSP and will benefit all stakeholders - utilities, customers, and third-parties alike. Utilities also have a crucial role to play in enabling EVSE and the EV market.

As the energy grid evolves and DERs become more prevalent, utilities will increasingly take on the role of coordinators of the energy market, rather than purely being service providers. The DSIPs will facilitate this process by maintaining transparency and providing information so that DER providers and other third-party interests can actively participate in the creation of a modernized, responsive, resilient, low-carbon energy grid. The next iteration of the DSIPs, expected to be filed in June 2018, will provide insight into the progress of this important transition.

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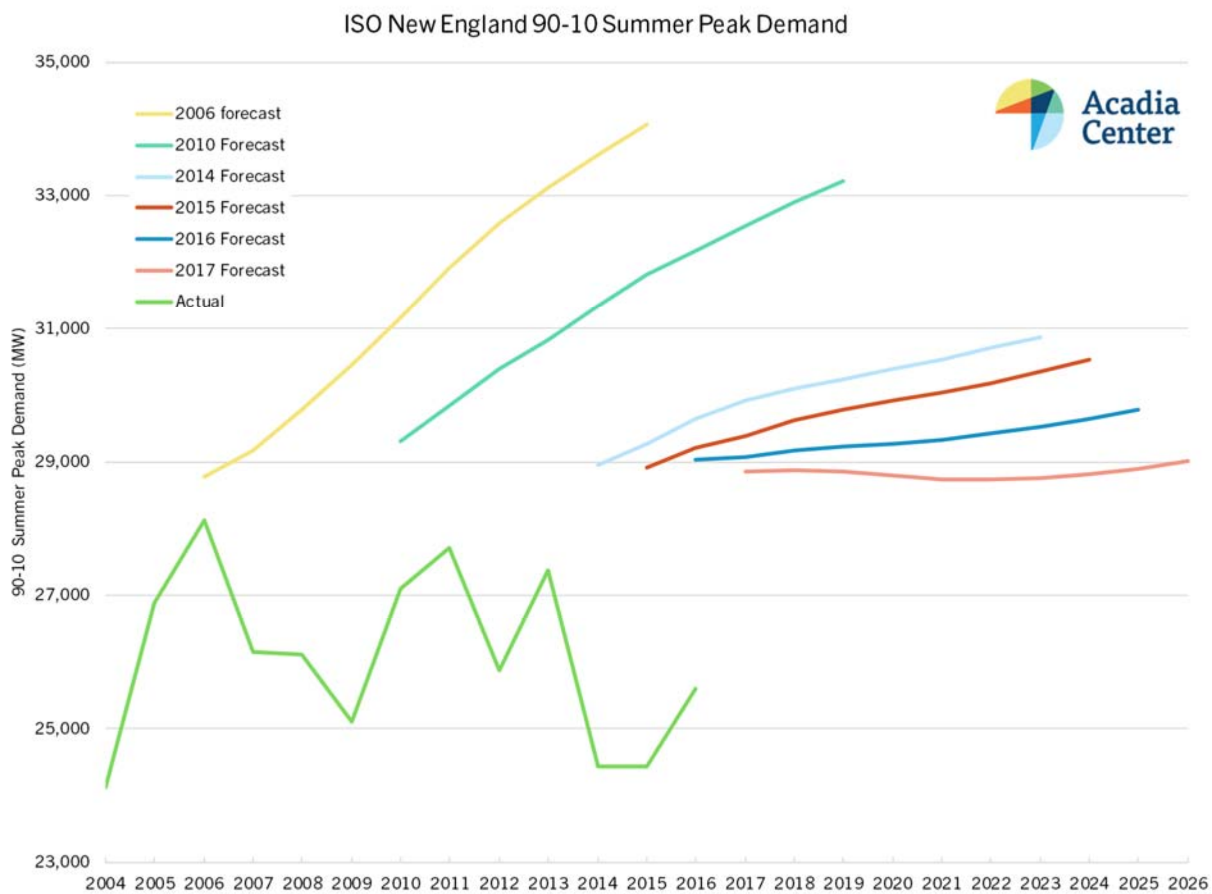
ISO-New England Forecasts

Analysis of Historical Peak Demand Forecasts

June 14, 2017



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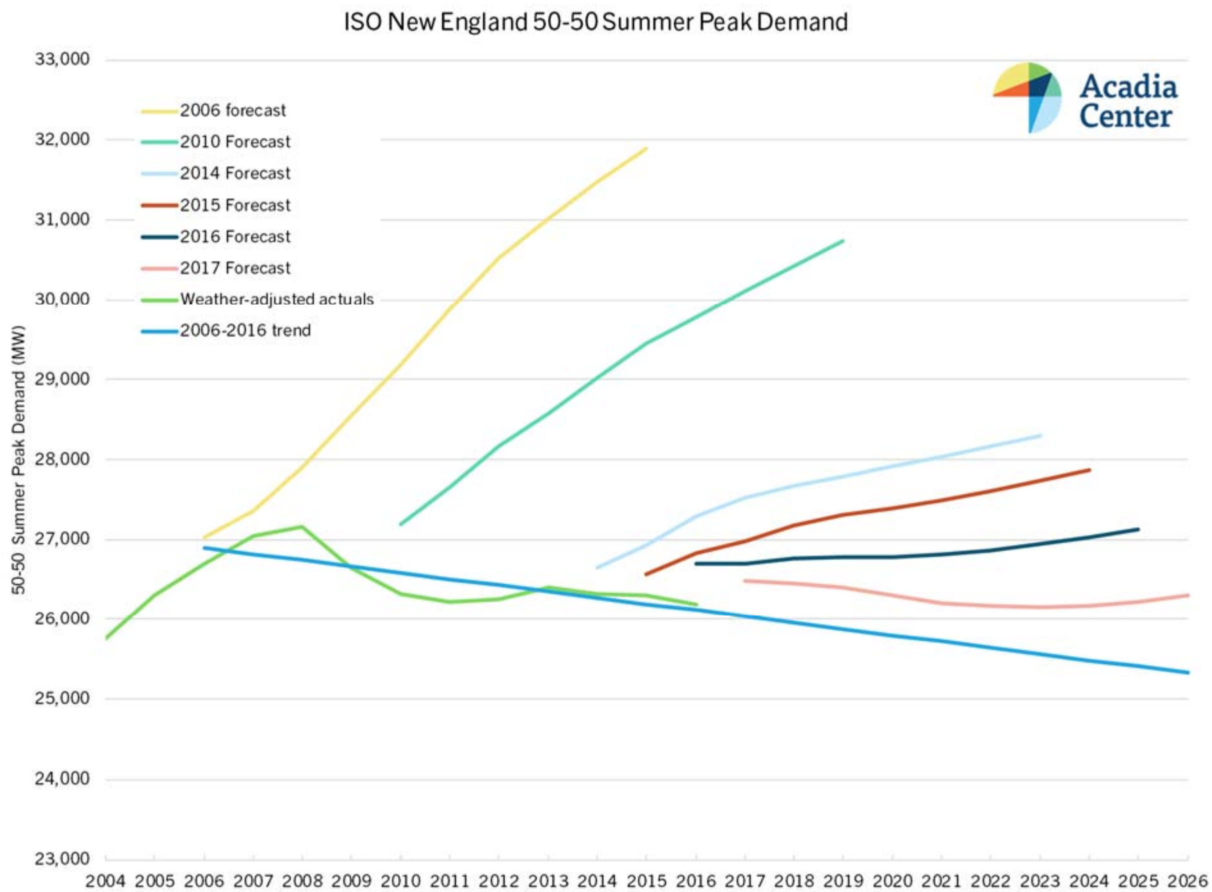

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