STATE OF NEW YORK

PUBLIC SERVICE COMMISSION

In the Matter of Distributed System Implementation Plans **Case 16-M-0411**

Comments on Initial DSIPs

Natural Resources Defense Council, Pace Energy & Climate Center, Solar Energy Industries Association, Vote Solar

September 12, 2016

Introduction

On July 26, 2016, the New York State Public Service Commission (the Commission) issued an order inviting interested parties to file comments on the Initial Distributed System Implementation Plans (DSIPs) submitted by New York's investor-owned electric utilities.[1] The Commission instructed parties to submit initial comments on the Initial DSIPs by September 12, 2016, and reply comments by September 26, 2016.

The Natural Resources Defense Council (NRDC), the Pace Energy and Climate Center (Pace), the Solar Energy Industries Association (SEIA) and Vote Solar appreciate the opportunity to provide these comments on the Initial DSIPs. This document builds upon many points raised in previous filings from Clean Energy Organizations Collaborative

[1] Case, 14-M-0101, State of New York Public Service Commission (NY PSC), Notice of New Case Number and Soliciting Comments on the Initial Distributed System Implementation Plans (July 26, 2016).

(CEOC)[2] members, and was prepared with the assistance of Synapse Energy Economics, Inc.[3]

Guidelines for the Initial DSIPs were set by a prior Commission order, which directed each utility to file "an individual utility Initial DSIP addressing its own system and identifying immediate changes that can be made to effectuate state energy goals and objectives."[4] A core element of the Initial DSIPs is providing improved information to utility customers and third parties to create a transactive platform for energy innovation and customer choice. As stated by the Commission, "In the context of the DSIP, improved information means greater transparency and visibility of electric system planning and operations. Greater transparency to market participants, both of system needs and of operational modes that can meet those needs, will encourage innovation and will support efficient private capital investments. Improved visibility is also critical on the utility-facing side of planning and operations to improve efficiency and resilience."[5] In other words, the Initial DSIPs are intended to both provide significant data for consumers and third parties in order to move toward a more efficient, integrated and responsive electric distribution system.

The development of the DSIPs is a complex undertaking, and when performed according to the vision established by the Commission, represents a major first step in executing a significant departure from how utilities have approached planning in the past. This is true both in terms of the information being developed and in how utilities engage stakeholders in planning. We understand that the Commission views the development and implementation of DSIPs as an iterative process, and that the DSIP Guidance sets forth significant new requirements on the utilities. We are also keenly aware that this is the time for REV to move into the execution phase of implementation. We applaud the Commission for directing the utilities to develop the DSIPs and also recognize the significant efforts by the utilities to fulfill the requirements laid out in the DSIP

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[2] The Pace Energy and Climate Center and the Alliance for Clean Energy New York co-convene an independent group called the Clean Energy Organizations Collaborative on REV-related matters. This collaborative is made up of national and state-based environmental organizations, clean energy companies and organizations, renewable energy industry trade associations, consumer groups, energy efficiency providers, and academic centers. CEOC seeks to ensure environmental outcomes that are consistent with New York's overall pollution reduction goals; break down existing barriers to clean energy services; and inform its members on market and rate design issues.

[3] In order to better respond to the Commission's request for comment on the initial DSIP filings, NRDC, Pace, SEIA and Vote Solar pooled resources with the Advanced Energy Economy Institute (AEEI) to hire Synapse Energy Economics, Inc. to review the initial DSIP filings. The parties then built upon Synapse's review and analysis to each further develop their own comments.

[4] Case 14-M-0101, NY PSC. Order Adopting Distributed System Implementation Plan Guidance, at 3 (April 20, 2016) [hereinafter "DSIP Guidance Order"].

[5] NY PSC, DSIP Guidance Order, 2.

Guidance. We also understand that different utilities possess different capabilities and data with respect to fulfilling the DSIP Guidance requirements. While in our comments we critique and identify deficiencies in the DSIPs, we are mindful of where we are and what must be done. This is a critical moment for clear guidance and continued progress, and it is in the spirit of realizing the Commission's vision that we offer the following assessment of the Initial DSIPs.

The Initial DSIPs should provide the Commission and other stakeholders with a clear vision and a blueprint that enables distribution utilities to evaluate options for future resource investments and initiatives, along with sufficient evidence and analysis to justify and explain the blueprint. To this end the DSIPs should include certain key elements such as sound load forecasts; a comprehensive assessment of the potential for energy efficiency, controllable loads, renewable generation, advanced inverters, energy storage and electric vehicles; a clear description of how these Distributed Energy Resources (DERs) and traditional utility resources such as transformers, capacitors, voltage regulators, sectionalizers and reconductoring are selected using the Benefit Cost Analysis (BCA) framework outlined by the Commission; a clear description of how the utilities will create opportunities for autonomous investments in DERs, and procure or otherwise obtain DERs through price signals and contractual processes from customers and third parties; scenario analyses and risk assessments to ensure a robust understanding of risks and opportunities ; and a " least cost/best fit resource strategy " that includes the policies, processes and resources that will best serve utility customers and meet the Commission's REV goals. Finally, each updated individual DSIP should include an action plan that clearly lays out all the steps the utility will undertake and facilitate to increase the penetration of DERs in its service territory.[6]

The Commission has requested that commenters address seven questions.[7] Our comments address each of these questions in order and focus on the Initial DSIPs submitted by New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation (collectively, NYSEG), Con Edison, and National Grid.[8]

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[6] We recommend that these plans include a prioritization of non-wires alternatives over traditional T&D infrastructure investments, wherever feasible. Non-wires alternatives may include energy efficiency, controllable loads/demand response, renewable generation, advanced inverters, energy storage and electric vehicles.

[7] NY PSC, Notice of New Case Number and Soliciting Comments on the Initial Distributed System Implementation Plans.

[8] These comments do not address the Orange and Rockland and Central Hudson DSIPs, due to limited time and resources.

Summary

Findings

The Initial DSIP filings represent a step forward in that they present useful information about New York utilities' current practices and capabilities. They also provide useful information about the utilities' intentions to improve their capabilities in areas including forecasting methodology, information provision, and the procurement of Non-Wires Alternatives (NWAs).

However, the Initial DSIP filings suffer from some significant deficiencies, do not comply with several important requirements from the Commission's DSIP Guidance Order, and are not fully consistent with the New York REV goals or even the New York State Energy Plan goals. The Initial DSIPs suggest that the utilities are not yet proactively implementing or procuring distributed energy resources (DER) to the extent warranted by the Commission's directives and goals in the REV proceedings. Furthermore, the Initial DSIPs do not provide third-party vendors and customers with sufficient information to effectively implement DERs on their own.

These deficiencies are described in more detail below, particularly in response to Questions 4 and 6. We focus on deficiencies that are not being addressed in the supplemental DSIP process. The most problematic deficiencies are summarized as follows:

- The DSIPS do not provide sufficient information about how price signals will be utilized to enable voluntary response from DER providers to meet grid needs.
- The DSIPs do not provide sufficient information regarding the process for procuring NWAs through requests for proposals (RFP)—information needed by the Commission, stakeholders, and potential bidders.
- The DSIPS do not propose sufficient solutions for facilitating bi-directional power flows and enabling higher penetration of DER on the existing distribution system.
- The DSIPs do not provide either third parties or customers sufficient information to evaluate the best locations for DER in the near term.
- The DSIPs do not provide a clear framework for dynamically evaluating the need and potential for distributed energy resources in the utilities' service territories.
- The DSIPs do not utilize the Commission's BCA Framework or the utilities' BCA Handbooks in a comprehensive manner to identify the location, timing and required performance of DERs as a cost effective alternative to traditional utility distribution resources, or provide customers and third parties with information needed to plan for the deployment of DERs.

- The DSIPs do not meet the requirements of the BCA Framework order to assess (1) investments in Distributed System Platform; (2) procurement of DER through competitive solicitation; (3) procurement of DER through tariffs; and (4) energy efficiency programs.
- The DSIPs do not describe the process for integrating cost-effective DERs at a system-wide scale, i.e., DERs that can provide cost-effective energy, capacity and ancillary service solutions at the wholesale market level. .
- The DSIPs do not meet the Commission's explicit expectation articulated in its Order approving the utilities ETIP budgets that the DSIPs will include energy efficiency efforts beyond those funded in the utilities ETIPS filings.
- The load forecasts in the DSIPs do not meet the Commission's standards for load forecasting.
- The DSIPs include inadequate and unreasonably conservative assumptions of the autonomous uptake of DERs in the load forecasts. This results in overly-high load forecasts, which may result in redundant distribution upgrades that are more expensive than necessary to provide reliable service.
- The DSIPs do not adequately take into account the opportunity to use advanced inverters to provide voltage and reactive power support. IEEE has documented that advanced inverters can offer dynamic support of circuit voltage.[9]

Recommendations

We recommend that the Commission direct the utilities to address all these deficiencies in the Supplemental DSIP and in individual Revised Initial DSIPs. It is particularly important that the utilities expeditiously provide realistic forecasts of future autonomous DER deployment by technology in their service territories, and account for the energy and peak demand savings from those resources in their load forecasts. With the current forecasts, the DSIPs indicate that the utilities will be supporting *significantly less energy efficiency* and other DERs than they have implemented in the past, and thus run the risk of *making redundant investments in their distribution systems* to meet needs that may be met by other means ; and will therefore *impose higher costs* than necessary on customers.

Additionally, the utilities should include detailed road maps for increasing substation level hosting capacity in support of DER implementation goals. Facilitating bidirectional power flows – in effect, increasing hosting capacity – is critical to the realization of a decentralized generation future, and should be a primary area of focus in the DSIPs. The DSIPs should describe a more sophisticated methodology for identifying and retrofitting

[9] Smith, Dugan, and Seal, EPRI, *Smart Inverter Volt/Var Control Functions for High Penetration of PV on Distribution Systems* (2012).

existing distribution substations to facilitate bidirectional power flow, and also propose a means of socializing the costs to a broader group of stakeholders with a more holistic view of cost causation.

For these reasons, the deficiencies that we identify herein must be addressed as soon as is practical. The Commission should not wait for these deficiencies to be addressed in the next DSIPs, which are due to be filed on June 30, 2018.[10] We propose the following series of milestones for the utilities to meet as they work to remedy the deficiencies in their Initial DSIPs:

- January 1, 2017: Each utility files with the Commission a study of the technical potential for distributed energy resources including an implementation plan for prioritizing NWAs over traditional T&D infrastructure within its service territory.
- February 1, 2017: Each utility files with the Commission a study of the economic potential for distributed energy resources including proposed sourcing mechanisms within its service territory, based upon the technical potential study and application of the BCA framework.
- March 1, 2017: Each utility files with the Commission a strategy for creating pricing, policies and procurement plans for DERs that it expects will be cost effectively deployed within its service territory, based upon the economic potential study and the utility, customer and third party actions necessary to procure those DERs.
- April 1, 2017: Each utility files with the Commission a revised initial DSIP that addresses all of the deficiencies outlined herein, and others identified by the Commission.

Response to Question 1: Was the material presented in the Initial DSIPs beneficial to understanding current utility practices and capabilities?

The utilities have generally improved the transparency of current utility practices and capabilities.

Most Initial DSIPs provide useful information about the ways in which the characteristics of the utilities' service areas affect their capacity to effectively integrate DERs. For Con Edison, these characteristics include unusually high population densities and the

[10] NY PSC, DSIP Guidance Order, at 64.

predominance of a network grid design.[11] National Grid faces DER challenges associated with limited penetration of interval meters, the prevalence of distribution lines operating at low voltages, and limited opportunities for two-way communication with distribution equipment.[12] NYSEG's service area is characterized by low-density communities, a radial distribution system featuring single-phase circuits, and major gaps in both physical and electrical data.[13] Understanding these characteristics is useful in that they provide an indication of the types of technical challenges that need to be investigated and addressed in order to ensure that DERs can be successfully integrated. In addition, they indicate where DERs may be less able to provide system benefits.

The utilities also present helpful descriptions of the types of utility data that are newly available online. Con Edison's account of the network-level data now available on its website (including historical 8760 load data; peak and minimum 24-hour load duration curves relative to station capacity; and forecasted network growth rates) gives a better sense of its current information-provision capabilities.[14] The same goes for National Grid's description of its publicly accessible System Data Portal and NYSEG's explanation of the current status of its Distribution Analysis Portal.[15]

In addition, the Initial DSIPs were beneficial to understanding current utility forecasting practices. Con Edison provides a particularly detailed explanation of how it currently forecasts peak load, sales, and DERs.[16] National Grid and NYSEG also offer useful explanations of their top-down forecasting methodologies.[17] These descriptions form a useful starting point for understanding the utilities' current practices, where these practices are deficient, and how they can be improved (as discussed below).

Response to Question 2: What is your overall assessment of the Initial DSIP filings?

The Initial DSIP filings represent a step forward in that they present useful information about New York utilities' current practices and capabilities, and the utilities' intentions to

[11] Case 16-M-0411, Con Edison, Initial Distributed System Implementation Plan, at 4, 81-84 (June 30, 2016) [hereinafter "Con Edison, Initial DSIP"].

[12] Case 16-M-0411, National Grid, Initial Distributed Implementation Plan, at 5, 36 (June 30, 2016) [hereinafter "National Grid, Initial DSIP"].

[13] National Grid, Initial DSIP, at 5, 36.

[14] Con Edison, Initial DSIP, at 133.

[15] National Grid, Initial DSIP, at 41-42; Case 16-M-0411, New York State Electric and Gas (NYSEG), Initial Distributed System Implementation Plan, at 50 (June 30, 2016) [hereinafter "NYSEG, Initial DSIP"].

[16] Con Edison, Initial DSIP, at 21-64.

[17] National Grid, Initial DSIP, at 44-45; NYSEG, Initial DSIP, at 50-51.

improve their capabilities in areas such as forecasting methodology, information provision, and the procurement of NWAs.

However, the Initial DSIP filings suffer from some notable deficiencies, do not comply with several important requirements from the Commission's DSIP Guidance Order, and are not fully consistent with the New York REV goals or the New York State Energy Plan goals. The Initial DSIPs indicate that the utilities are not proactively implementing or procuring DERs to the extent warranted by the Commission's directives and goals in the REV proceedings. Furthermore, the Initial DSIPs do not provide third-party vendors and customers with sufficient information to effectively implement DERs on their own. These deficiencies are described in more detail below, particularly in response to Questions 4 and 6.

Response to Question 3: What aspects of the Initial DSIPs did you find most beneficial and why?

As discussed in our response to Question 1, the sections of the utilities' Initial DSIPs that describe the information now available in online utility data portals are particularly beneficial. These descriptions generally enable interested utility customers and third parties to more rapidly and accurately identify the sections of the grid that are most amenable to cost-effective DERs.

Also beneficial are Initial DSIP sections in which utilities identify opportunities to coordinate with DER providers to offer additional benefits to customers and the electric grid. For example, Con Edison states that it sees significant potential for helpful collaboration in dispatching large-scale DER on peak days, aggregating DER to provide load reduction and facilitate NWAs, and tapping DER to provide Volt/VAR and other ancillary services.[18]

Given the state of the utilities' current forecasting methodologies, we found the Initial DSIP components that address plans for improving forecasting methodologies to be useful. Particularly informative was National Grid's description of its plans to develop a model that integrates "top down" and "bottom up" components to generate probabilistic 8760 load forecast profiles at every level of the electric system hierarchy.[19]

DER integrators have found the DG Red Zone Maps useful for identifying areas of the distribution system that may not be suitable for some DER applications. Specifically, the identification of 4kV areas is useful for siting CDG/RNM projects. Still, we recognize

[18] Con Edison, Initial DSIP, at 154.

[19] National Grid, Initial DSIP, at 45-49.

that the data underlying these maps is distorted by an artificially inflated interconnection queue. So while the maps may be effective for identifying Red Zones based on voltage class, the poor reliability of the DG queue data detracts from the intended use of the maps.

Finally, while the DSIPs' discussion of NWA screening criteria and procurement processes can be improved significantly, the components of the Initial DSIPs that explicitly identify potential NWA projects and the procurement process for developing those projects are beneficial to the extent that they indicate that utilities are taking concrete steps toward the identification and development of DERs as alternatives to traditional investments. For example, while its process of developing NWAs still appears to be in its early stages, NYSEG's descriptions of the Java Station and Station 43 projects that it is looking into indicate that NYSEG is moving in the right direction.[20]

Response to Question 4: Do the DSIPs provide information that will help to better inform investment decisions?

Solicitation of Non-Wires Alternatives from Third Parties

The Initial DSIPs vary greatly in the degree to which they clarify the third-party NWA procurement process. However, none of the DSIPs we reviewed effectively address the procurement of cost-effective DER from a system-wide perspective, and none provide examples of benefit-cost analyses (BCAs) that would help inform investment decisions.

Having already taken significant steps toward implementing its Brooklyn-Queens Demand Management (BQDM) project, Con Edison is able to point towards the BQDM Request for Information (RFI) as a template for the type of information that it will provide to potential NWA investors through future RFIs.[21] The BQDM RFI provides information including a map of the targeted network, energy and demand data for the load pockets where relief is required, and a chart depicting the time of day in which future peak overload is forecasted to occur.[22] All of this information will help to inform the decisions of potential DER investors. The BQDM process has also provided some object lessons in how solicitations should be structured to encourage developer participation. Con Ed should propose lessons learned from the BQDM process that would

[20] NYSEG, Initial DSIP, at 55-56.

[21] Con Edison, Initial DSIP, at 131.

[22] Consolidated Edison.. Request for Information: Innovative Solutions to Provide Demand Side Management to Provide Transmission and Distribution System Load Relief and Reduce Generation Capacity Requirements (July 15, 2014), available at www.Con Edison.com/energyefficiency/Documents/Demand_Management_Project_Solicitation-RFI.pdf.

guide future solicitations relating to the timing of solicitations, how specific incentives are targeted to specific technologies and communicated to those sectors, and the response times developers require to answer solicitations

Con Edison's DSIP also effectively describes the utility's process for evaluating DERs using its BCA Handbook.[23] This process includes the identification of locations where forecast load growth exceeds capacity, the application of set NWA suitability criteria to potential distribution projects, and the use of BCAs to evaluate DER portfolios.

The National Grid and NYSEG DSIPs provide much less information regarding the process for procuring NWAs. National Grid provides a general description of its process for procuring NWA solutions for its Village of Baldwinsville project, but it fails to indicate the type of information that it expects to provide to third parties when soliciting NWA bids.[24] In fact, National Grid appears to suggest that it will be passing off the management of the NWA procurement process to third parties, without prescribing what that process will look like. NYSEG acknowledges that its RFPs for NWAs will require providing information such as the amount of load reduction and associated timing being requested to defer traditional utility solutions.[25] However, it does not provide a clear indication of what the full NWA procurement process is expected to look like, instead indicating that it will be working to develop its NWA process over the next several years.[26] Details about both the information that will be provided in RFPs and the nature of the overall procurement process are critical to inform investor decision-making, and should be contained within all DSIPs.

System-Wide Distributed Energy Resources

While all of the Initial DSIPs address the NWA procurement process at some level, none describe the process for procuring cost-effective DER at a system-wide scale. NWAs present specific opportunities where DERs may provide an extra level of value by helping to avoid impending distribution upgrades. But many DERs are cost effective even in the absence of any avoided distribution cost, i.e., regardless of where they are located. Energy efficiency investments, in particular, often pay for themselves purely on the basis of avoided generation and capacity costs. Utilities should make clear that they will not ignore these broadly economical resources to focus on location-specific NWA opportunities. DSIPs should contain information clarifying the process for procuring cost-effective system-wide DERs throughout each utility's service territory.

[23] Con Edison, Initial DSIP, at 145.
[24] National Grid, Initial DSIP, at 53.
[25] NYSEG, Initial DSIP, at 60.
[26] NYSEG, Initial DSIP, at 57.

In addition, DSIPS should include forecasts of the amount of DER expected from each potential source, including but not limited to ETIPs, utility programs funded through the applicable rate case proceeding, NWA procurement processes, demonstration projects, demand response programs, and autonomous customer and third party investments (including those facilitated through net metering, the anticipated Value of DER interim and successor tariffs, other rate designs intended to spur DER investments, and DERs facilitated through platform service revenues). While the amount of DER investment that will be generated through some of these sources such as the anticipated Value of DER tariff remains subject to uncertainty, utility estimates will nevertheless prove useful in order to take into account the full range of procurement and investment-facilitating activities and identify gaps between the potential for these resources and anticipated outcomes, which may require additional policy action. Currently there is no single resource that summarizes the anticipated outcomes from all of these proceedings. Accordingly, providing a single summary that allows for systematic planning that takes into account all proceedings is one of the most critical functions that the DSIPs should serve.

Benefit-Cost Analyses

The Initial DSIPs are also lacking in that they generally fail to discuss the application of a benefit-cost analysis for DERs. The BCA Framework Order envisions that the utilities' DSIPs will contain an identification of each utility's system needs and an identification of needs that could be met through DER or other alternatives, as well as plans for soliciting those alternatives in the marketplace. These alternatives would be assessed using the BCA Framework principles in a transparent manner.[27]

The BCA Framework Order requires the utilities to conduct BCAs on four categories of utility expenditures: (1) investments in Distributed System Platform (DSP) capabilities; (2) procurement of DER through competitive selection; (3) procurement of DER through tariffs; and (4) energy efficiency programs.[28] None of the DSIPs we reviewed presented information from BCAs of these types of expenditures.

While each utility presents a BCA for advanced metering infrastructure (AMI) investments, other areas are lacking. If the utilities have not yet conducted BCAs for the four categories of investments identified by the Commission, they should outline a plan for when such analyses will be conducted, how the results will be communicated, and how the results will inform the procurement of DERs or future capital investments.

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[27] *Id.* at 4.

[28] Case 14-M-0101, NY PSC, Order Establishing the Benefit Cost Analysis Framework, at 1-2 (January 21, 2016).

Sufficient Timing for Making Decisions

In general, all utilities could improve the DER investment environment by identifying load relief needs earlier and streamlining the process for soliciting NWAs. The utilities appear to agree that the current solicitation process typically takes 10 to 20 months, and that it takes another 20 to 40 months to implement NWA solutions.[29] Thus, load relief needs must be identified from 30 to 60 months (2.5 to 5 years) in advance in order for NWA solutions to be considered. But Con Edison indicates that it typically only identifies overloaded feeders and forecasts a year in advance.[30] Even a 5-year planning process may not be sufficient given the current timelines for implementing some NWAs.

Reducing the time between the identification of a potential NWA opportunity and the implementation of an NWA project could greatly increase the extent to which DERs are treated as viable replacements for traditional distribution system investments. While the utilities should be applauded for their initial efforts to identify system needs earlier,[31] they should also be directed to make further progress in this area. The utilities should propose timeline revisions that would align DER solicitation schedules with the process for identifying a majority of infrastructure investment needs.

Autonomous Customer and Third-Party Investments

The Initial DSIPs include some information that will help to inform the autonomous[32] investment decisions of customers and third parties, but fall short of providing a level of detail sufficient to guide DER investment decisions.

The Initial DSIPs generally provide a great deal of useful information regarding plans for transmission and distribution system upgrades and capital expenditures.[33] The DSIPs also provide detailed accounts of plans for advanced metering and grid modernization investments.[34] All of this information will help to guide investors interested in evaluating the viability of DER projects.

Those sections of Initial DSIPs that address rate design plans are also informative and useful for investment decisions. NYSEG's indications that it intends to design and test an array of new, time-varying rate designs is a positive first step toward both greater system

[29] Con Edison, Initial DSIP, at 144; National Grid, Initial DSIP, at 56.

[30] Con Edison, Initial DSIP, at 140.

[31] Con Edison, Initial DSIP, at 136,140; NYSEG, Initial DSIP, Attachment B.

[32] We use the term "autonomous" to refer to third parties and customers making DER investment decisions in the absence of utility DER initiatives or programs.

[33] Con Edison, Initial DSIP, at 71-127.

[34] National Grid, Initial DSIP, at 82-120; Con Edison, Initial DSIP, at 191-193; NYEG, Initial DSIP, at 114-136.

efficiency and greater awareness of the likely value of DERs in NYSEG's service territory.[35] The same goes for Con Edison's statements that it intends to take steps to further implement time-varying rates and educate customers about their benefits.[36] While any impact on the financial viability of DERs will depend on the details of future rate designs, the signs of movement toward efficiency-inducing, time-varying rates are positive.

Nevertheless, none of the Initial DSIPs we reviewed provide a clear account of how New York's Value of DER process will feed into the procurement of DERs. The utilities do indicate that the Value of DER proceeding is directly related to the DSIP process, and that the proceeding will be used to inform compensation mechanisms for DERs.[37] In addition, Con Edison makes broad statements to the effect that the value of DER "is relatively low in most electric distribution systems," and is especially low in networks of the variety found in New York City.[38] However, none of the utilities indicate the mechanism or algorithm that will be used to incorporate location-specific findings regarding the value of DERs into the process for obtaining and compensating DERs. In the planning process, understating the value of DER is a means of justifying overinvestment in traditional T&D and far too little DER. Greater clarity in this area will be necessary for potential DER investors.

Third parties and customers both require timely utility data on existing infrastructure, DERs, and electricity usage in order to make informed DER investment decisions. As noted in our response to Question 1, utilities have made significant improvements in the rapid provision of certain information to customers and third parties through online data portals. However, there are several areas in which utility efforts to provide necessary information are lacking.

One area where improvements are needed is in the provision of DER hosting capacity data. The Commission has ordered utilities to establish hosting capacity maps that are available to DER providers through their Initial DSIPs,[39] but the utilities' DSIPs vary in the degree that they comply with this requirement. Specifically:

- NYSEG fails to meet the Commission's requirement, arguing that a lack of accurate load profiles and other system data has prevented it from developing

[35] NYSEG, Initial DSIP, at 86, 125.
[36] Con Edison, Initial DSIP, at 65, 199-200.
[37] Con Edison, Initial DSIP, at 18; National Grid, Initial DSIP, at 18.
[38] Con Edison, Initial DSIP, at 9.
[39] NY PSC, DSIP Guidance Order, at 43.

reliable initial hosting capacity results.[40] This failure to provide data creates a significant data gap for DER investors, and is inconsistent with the Commission's directive that "although not all the information requested may be currently and completely available, it is imperative that the utilities provide the data and information that is presently available."[41] We recommend that NYSEG provide the data that it does have available, and take steps toward the collection of data that it currently does not have.

- Con Edison and National Grid have both released useful initial hosting capacity maps, but those maps have not yet achieved the level of timeliness and detail required by potential investors. National Grid indicates that the data on its System Data Portal will be updated approximately every six months.[42] Con Edison states that its initial hosting capacity maps will be static, and will be updated annually.[43] Given the rapidly changing nature of the current grid, a map that is up to a full year out-of-date may not be of much use to DER providers and electricity consumers. We recommend that the hosting capacity maps be updated monthly, if not more frequently.

- National Grid is currently still in the initial phase of its hosting capacity analysis, in which it provides distribution indicators, but not hosting capacity evaluations or integrated DER value assessments.[44]

We recommend that all utilities advance the capabilities of their hosting capacity tools as quickly as is practicable. We also recommend that these tools inform an assessment of how AMI investments and other distribution investments are impacting hosting capacity over the long term. These assessments will be essential to driving policy analysis in related proceedings.

Customer Information

Beyond the deficiencies in publicly available data, several Initial DSIPs contain concerning elements regarding the sharing of customer information with third parties. The Commission has ordered that Initial DSIPs include an explanation of how third parties can obtain customer energy use information, eventually including near-real-time

[40] NYSEG, Initial DSIP, at 48.
[41] NY PSC, DSIP Guidance Order, at 19.
[42] National Grid, Initial DSIP, at 43.
[43] Con Edison, Initial DSIP, at 149-150.
[44] National Grid, Initial DSIP, at 51.

usage data.[45] However, not every utility has complied with this directive, and several utilities have proposed to limit data sharing in certain ways. Specifically:

- National Grid's DSIP fails to meet data sharing requirements. The company does discuss its plans "to provide a broad set of new energy information services and tools to its customers."[46] It also states that it plans to work with third parties in some areas, including the integration of communicating appliances, energy monitors, and thermostats in a single platform.[47] However, National Grid neglects to identify plans for providing third parties with detailed customer information.

- Con Edison does discuss its general plans for sharing customer data, but it also raises a variety of objections to increased data sharing, and suggests that it may need to start implementing "access and subscription management solutions" in its sharing of system data.[48]

- NYSEG has similarly expressed its intention to charge fees for providing customers or third parties with any data that is more detailed or frequent than some minimum level.[49]

While the utilities' concerns about cost sharing and data security may be valid, it is important to keep in mind that data sharing is a critical component of the market-based, DER-fostering distribution system envisioned in REV. Charging high data access fees and overstating the challenges inherent in data sharing could result in under-informed DER investors, and unnecessarily reduced DER penetration.

The format of the data that utilities intend to provide to customers and third parties will also impact the degree to which DER investors are well informed. It is incumbent on utilities to provide access to needed data as expeditiously as possible in order to better facilitate alternatives, and developers should work constructively with utilities to identify their data needs. National Grid indicates that the data that it is now providing on its System Data portal will generally be raw, may include gaps, and will likely require "scrubbing" prior to effective use.[50] This statement suggests that much of the data on the System Data Portal will be in such a state as to be unhelpful for the vast majority of National Grid customers. NYSEG, on the other hand, suggests that it intends to only give

[45] NY PSC, DSIP Guidance Order, at 59-62.
[46] National Grid, Initial DSIP, at 71.
[47] National Grid, Initial DSIP, at 74.
[48] Con Edison, Initial DSIP, at 16-17, 235.
[49] NYSEG, Initial DSIP, at 78.
[50] National Grid, Initial DSIP, at 42.

vetted, reliable results of planning analyses to DER providers, rather than raw system data.[51] It is worth further considering the balance between providing data quickly and comprehensively, and providing data in a digestible format. Our view is that DER providers are generally sophisticated enough entities that it is more important to get them up-to-date and complete data than it is to provide them with carefully reviewed and formatted information. The opposite is likely the case for most customers.

Response to Question 5: Were there any areas of a particular utility's Initial DSIP that should be replicated by other utilities?

We suggest that utilities replicate those Initial DSIP components highlighted in the above responses to Questions 1 and 3. These include DSIP sections describing unique characteristics of each utility's service area, improvements in information provision, current and planned forecast methodologies, the degree to which NWAs may avoid capital investments, and opportunities for coordination between utilities and DER providers.

In general, Con Edison's Initial DSIP is more comprehensive than the other DSIPs we have reviewed. We encourage utilities to replicate the sections of Con Edison's Initial DSIP addressing beneficial locations for DER development,[52] the integration of DERs into capital investment planning,[53] and current delivery infrastructure capital investment plans.[54] Con Edison's beneficial location section is particularly useful in that it identifies the degree to which it expects specific substations and load pockets to face overloading.[55] Con Edison's discussion of integrating DER into the capital budgeting process is especially helpful because it addresses both Con Edison's current treatment of NWAs with respect to each budgeting category and the utility's efforts to expand NWA opportunities in several expenditure categories.

Response to Question 6: Are there any deficient areas within the Initial DSIP filings that you believe are not going to be addressed as part of the Supplemental filing?

The companies provided inadequate information in several areas, particularly with regard to the potential for and the implementation of DERs.

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[51] NYSEG, Initial DSIP, at 76.
[52] Con Edison, Initial DSIP, at 129-146.
[53] Con Edison, Initial DSIP, at 114-121.
[54] Con Edison, Initial DSIP, at 71-128.
[55] Con Edison, Initial DSIP, at 136.

Forecast of Demand and Energy Growth

The Commission has stated that Initial DSIPs should include granular 8760 hourly demand and energy forecasts for the next five years.[56] The Commission has also urged utilities to adopt probabilistic forecasting methods.[57] The Initial DSIPs fall far short of these standards:

- NYSEG's DSIP is particularly deficient in the area of demand and energy forecasts. Though it provides information about its intention to improve its forecasting methodology, NYSEG provides no current forecast information.[58]

- National Grid's Initial DSIP does not provide sufficient detail regarding its current forecasts. Instead, it offers a single chart of peak demand accompanied by one explanatory sentence, and points interested readers to the most recent published forecasts in its System Data Portal.[59] This approach does not appear to be compatible with the Commission's guidance. In addition, the forecast available through National Grid's System Data Portal only provides peak demand point estimates that depend on conservative DER forecasts.[60]

- Con Edison includes 5-year demand and energy forecasts in its Initial DSIP, as well as a link to more granular network area peak and minimum load curves, and historical 8760 hourly load data. However, the locational forecasts presented by Con Edison are difficult to work with in aggregate. While system forecasts are presented in tabular format, each load area forecast is presented in graphical format in a separate file, with the area growth rate noted in the top corner. A more useful presentation of the results would be a single spreadsheet or database file that contains the hourly minimum and peak load profile for each load area, and the application of the growth rate to those load profiles to produce forecasts of how the load profiles will grow over time. Further, it would be helpful to know the season when each load area generally peaks, since the technologies available to reduce load will vary by season.

In addition, none of the utilities' load forecasts contain scenario analyses or sensitivities, which would enable stakeholders to understand how the forecasts may change if

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[56] NY PSC, DSIP Guidance Order, at 29 and Attachment 1:5.

[57] NY PSC, DSIP Guidance Order, at 12, 29.

[58] NYSEG, Initial DSIP, at 51, 61.

[59] National Grid, Initial DSIP, at 7, 46.

[60] National Grid, 2016 Electric Peak (MW) Forecast Fifteen-Years: 2016 to 2030, available at http://ngrid.maps.arcgis.com/apps/MapSeries/index.html?appid=4c8cfd75800b469abb8febca4d5dab59&folderid=8ffa8a74bf834613a04c19a68eefb43b.

underlying key parameters change.[61] Each forecast also depends on understated DER forecasts, as is discussed further below.

Analysis of DER Resources

The Commission's DSIP Guidance Order states that "A key element of enhanced distribution planning will be the ability of utilities to forecast available and potential DERs, including resource location and their operating characteristics. This will include scenario analyses that recognizes both high-load and low-load DER penetration and growth scenarios."[62] Accurate DER forecasts are a necessary component of accurate load and energy forecasts, and are critical for driving DER investment. The Con Edison, National Grid, and NYSEG DSIPs are all inadequate on these important points, as they generally do not include useful forecasts of DER availability or potential. We recommend that the utilities prepare revised DER forecasts that include reasonable estimates for future DER growth, as well as a lower bound and an upper bound to each estimate. An upper bound forecast would display achievable DER potential, a lower bound could be based on current queues and approved budgets, and a central estimate might convey the energy and demand savings possible from DER if current savings levels are continued or moderately increased. This central estimate should take into account all sources of DER investment, as outlined in the System-wide DER Resources section above.[63]

Con Edison DER Forecasts

Con Edison's DSIP stands out for devoting a significant portion of its Initial DSIP to forecasting DER penetration over the next five years.[64] We acknowledge and appreciate Con Edison's efforts in this regard. However, these forecasts are consistently conservative for several reasons:

- First, Con Edison projects its savings from Demand Side Management (DSM) efforts only "as far out as programs are funded or highly likely to be funded." Any potential savings beyond "funding certainty" are excluded from the Initial DSIP forecasts.[65] This approach excludes the possibility that third parties will provide any DSM, and models only the scenario in which funding does not materialize for additional DSM programs. While this is certainly a possibility, it is not a likely scenario, and therefore should not be the only scenario modeled. In approving the utilities initial ETIPS filings, the Commission specifically responded to CEOC's

[61] Con Edison, Initial DSIP, at 21-43.
[62] NY PSC, DSIP Guidance Order, at 13.
[63] *See* page 8 above in the response to Question 4.
[64] Con Edison, Initial DSIP, at 43-70.
[65] Con Edison, Initial DSIP, at 47; *see also* Con Edison, Initial DSIP, at 51, 53.

concern about the lack of annual energy savings targets in these ETIPS by stating that the Commission expects DSIPS to "include energy efficiency efforts beyond those funded by the budgets authorized" by the Commission."[66]

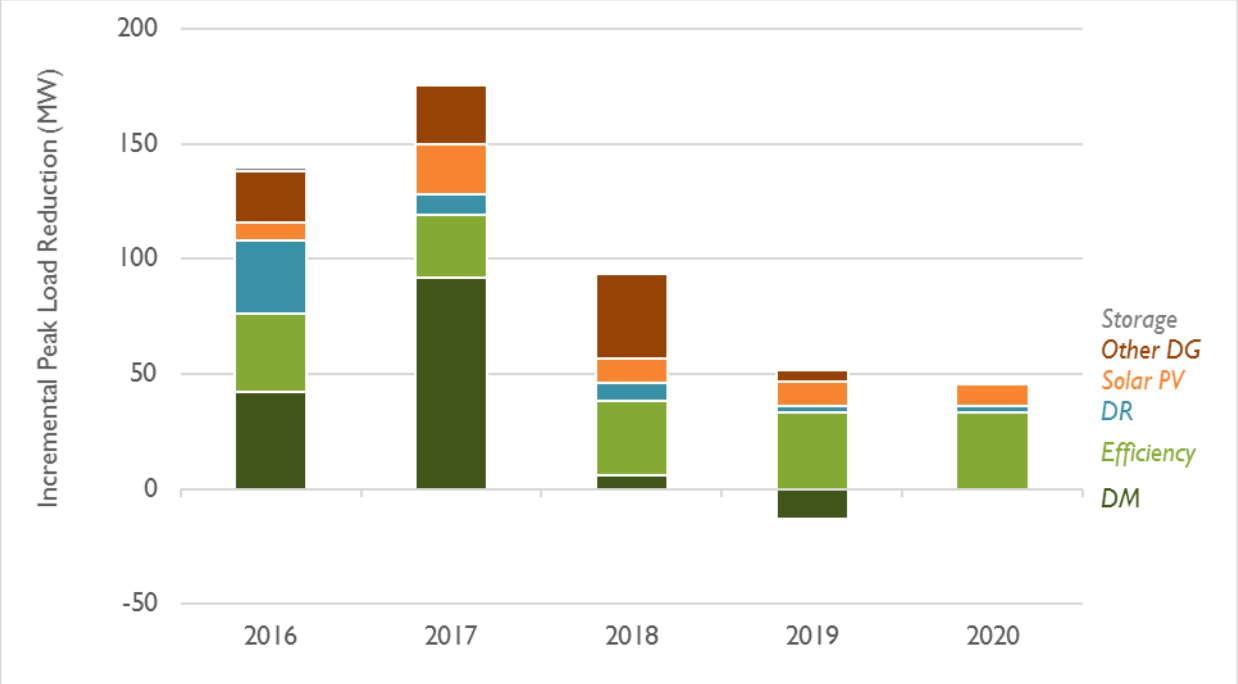
- Second, Con Edison further lowers its DSM savings forecasts by applying uncertainty factors to energy efficiency savings and excluding several Demand Response programs from its forecast.[67]

- Third, the utility's projections of distributed generation and energy storage depend heavily on current interconnection queues. Few additions beyond the projects currently in the interconnection queues are forecasted, despite the fact that continued growth in distributed generation and storage is highly likely.[68]

Con Edison's conservative assumptions result in highly pessimistic 5-year forecasts of peak load and energy savings from DERs. As shown in Figure 1 and Figure 2, Con Edison forecasts that incremental DER savings within its system will decrease by 67 percent in terms of peak load and 64 percent in terms of energy between 2016 and 2020. Such forecasts are unrealistic and are not based on any assessment of the potential for cost-effective DERs.

[66] Case 15-M-0252, NY PSC, Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets for 2016-2018, at 28 (January 22, 2016).
[67] Con Edison, Initial DSIP, at 47-48, 54.
[68] Con Edison, Initial DSIP, at 54, 58, 61.

Figure 1. Con Edison DER Incremental Peak Load Reduction Forecast



Source: Con Edison Initial DSIP

To take one example, Con Edison forecasts that its energy efficiency programs will achieve annual incremental savings of between 0.36 and 0.38 percent of sales from 2017 through 2020.[69] This is a significant drop-off from the 0.51 percent savings that Con Edison expects to achieve in 2016.[70]

The experiences of utilities in neighboring states show that far more savings are possible. For example, Con Edison's projected energy efficiency program savings are only a small fraction of the 2.93 percent annual savings that utilities in Massachusetts expect their cost-effective efficiency programs to achieve from 2016 through 2018.[71] It is hard to imagine that cost-effective efficiency opportunities are more than 85 percent lower in Con Edison's service territory than they are in a neighboring state.

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[69] Con Edison, Initial DSIP, at 29.

[70] *Id.*

[71] National Grid, Eversource, Cape Light Compact, Columbia Gas, Berkshire Gas, Liberty Utilities, Unitil, and Blackstone Gas, 2016-2018 Massachusetts Join Statewide Three-Year Electric and Gas Energy Efficiency Plan (October 30, 2015). *See also* Synapse Energy Economics, *Aiming Higher: Realizing the Full Potential of Cost-Effective Energy Efficiency in New York*, at 4, Figure 2 (April 22, 2016)[hereinafter "Synapse Energy Economics, *Aiming Higher*".

Similarly, Con Edison's forecasts of low and declining distributed photovoltaic (PV) growth might make sense if the potential for cost-effective PV was nearly exhausted. However, this is not the case. Con Edison forecasts that distributed PV will generate 147 gigawatt-hours (GWh) of electricity in 2020.[72] NYSERDA's 2014 Efficiency and Renewable Potential study shows 642 GWh of economic PV potential for New York City alone in 2020.[73] Factoring in Con Edison's Westchester territory would reveal even greater PV potential.

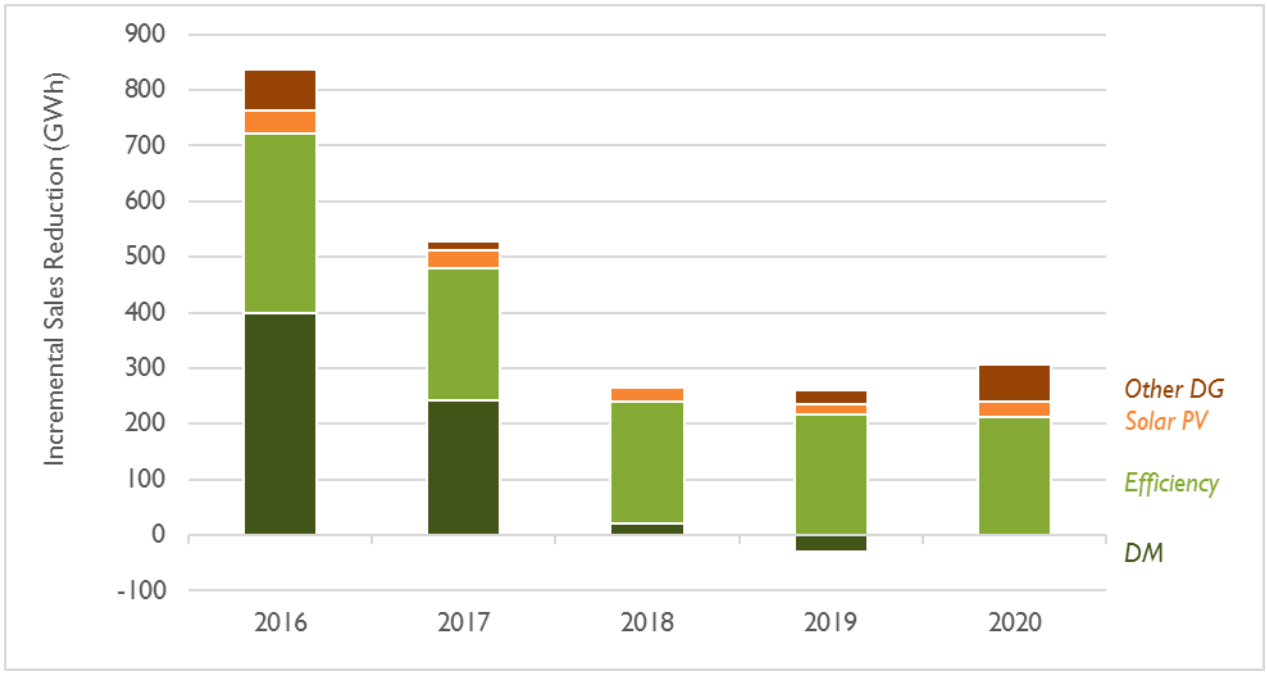
In addition, Con Edison currently forecasts that Demand Management (DM) programs will cease to provide load reductions after 2018, as there are no filed and approved program goals after this point. However, the potential for DM to provide load reductions clearly will not end after 2018. DM programs could be continued by the utility or by third-party providers in the future, if budgets are approved.

A forecasting approach that does not include realistic projections of DER growth is incompatible with the DER-oriented future envisioned by REV. While such an estimate could serve as a lower bound for future DER penetration, it should not be used as a point estimate that directly informs load and energy projections.

[72] Con Edison, Initial DSIP, at 58.

[73] NYSERDA. Energy Efficiency and Renewable Energy Potential Study of New York State, Volume 3 at 72 (April 2014), available at https://www.nyserda.ny.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/14-19-EE-RE-Potential-Study-Vol3.pdf

Figure 2. Con Edison DER Incremental Sales Reduction Forecast



Source: Con Edison Initial DSIP

National Grid DER Forecasts

National Grid does not provide any DER forecasts in its Initial DSIP. The Initial DSIP does point to National Grid's System Data Portal, which contains forecasts of the impact of energy efficiency and distributed PV on system peak demand.[74] These forecasts, like Con Edison's, provide very conservative point estimates that fail to account for reasonably achievable increases in DERs. National Grid assumes that PV growth in its territory will ramp up to meet near-term statewide targets, but will begin tapering off by 2019, and will fall off dramatically by 2025.[75]

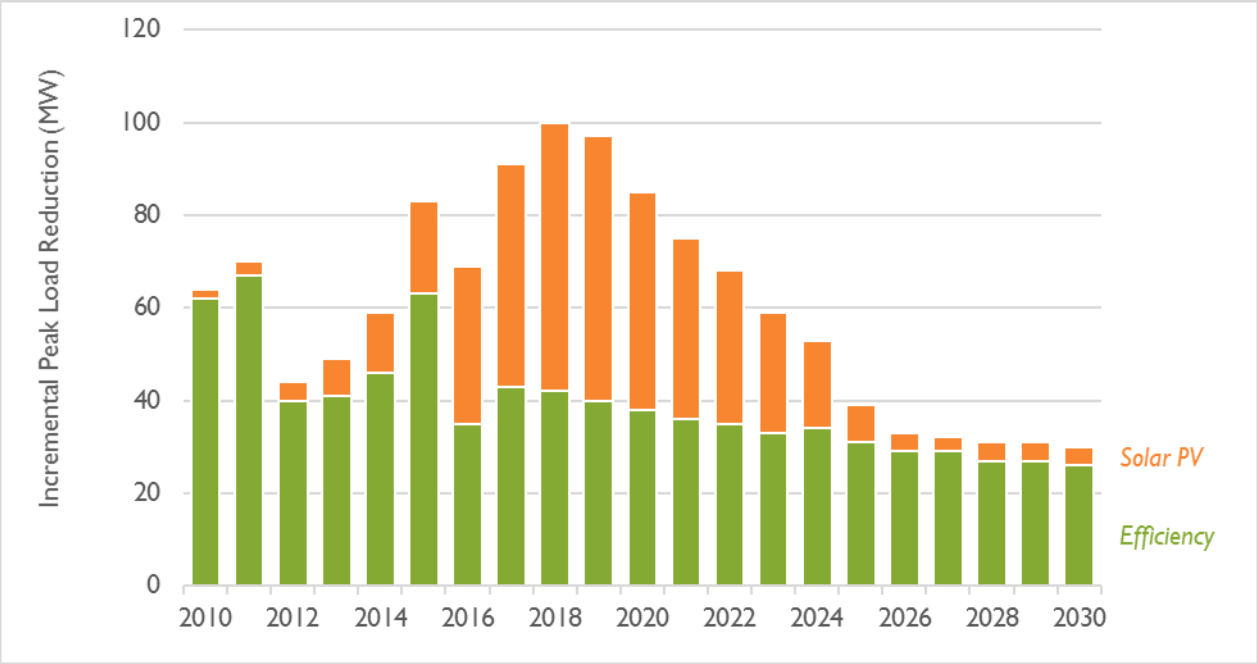
With regard to energy efficiency, National Grid explicitly assumes that future incremental savings will decline by 5 percent each year "to account for increasing costs and uncertainty."[76] National Grid's forecast of energy efficiency savings is significantly below the efficiency savings that it has already achieved in the neighboring states of Massachusetts and Rhode Island.[77] National Grid evidently does not forecast the impacts

[74] National Grid, 2016 Electric Peak Forecast.
[75] National Grid, 2016 Electric Peak Forecast, at 65-68.
[76] National Grid, 2016 Electric Peak Forecast, at 7.
[77] *See* Synapse Energy Economics, *Aiming Higher*, at 4, Figure 2.

of any DERs besides PV and efficiency, and also does not appear to forecast the sales impacts of DERs.

As with Con Edison, National Grid's forecasting methodology results in DER forecasts that do not provide a likely representation of future DER penetrations, nor of the potential savings that could be achieved by DERs. Figure 3 shows that National Grid expects 2030 incremental DER peak demand savings to be 64 percent below 2015 levels.[78] In the near term, National Grid forecasts that 2021 peak demand reductions will be 10 percent below 2015 levels, and 25 percent below 2018 levels. This forecast drop-off in DER buildout is not consistent with the goals of New York REV and does not reflect a reasonable estimate of cost-effective DER availability.

Figure 3. National Grid DER Incremental Peak Load Reduction Forecast



Source: National Grid 2016 Electric Peak Forecast

NYSEG DER Forecasts

NYSEG does not provide any DER forecasts in its Initial DSIP or point to an external location where such forecasts might be found. It is concerning that NYSEG not only fails to indicate a sense of the trajectory of future DER penetration levels, but also appears to not have a handle on the currently operating DERs within its system. NYSEG states that it is currently "working expeditiously to validate the location and capacity of connected

[78] National Grid, 2016 Electric Peak Forecast, at 7.

distributed generation to serve as the appropriate cast-off point for a DER forecast."[79] It further declares that it will need to accumulate more data in its database before it can produce an initial DER forecast.[80]

The timelines in NYSEG's Initial DSIP suggest that the utility may not develop useful DER forecasting methods until some indeterminate time beyond 2021.[81] NYSEG's approach is clearly incompatible with the Commission's directive that utilities use their Initial DSIPs to "provide the data and information that is presently available,"[82] and the Company's timeline for gathering additional data for a DER forecast is unacceptable.

Notably, none of the DSIP forecasts appear to account for the potential of DERs to help meet the New York State Energy Plan goals, or the Clean Energy Standard targets. National Grid claims that energy efficiency programs will be used to "support" the New York State Energy Plan goals for efficiency savings and greenhouse gas reductions, but does not provide any information about how the efficiency programs will provide such support, or the role of DERs in helping the Company meet those goals.[83] Similarly, Con Edison states that energy efficiency "will be a key component to reaching [New York's] Clean Energy Standard," but does not explain how this statement aligns with its forecasts of declining efficiency savings.[84] Utilities should model the level of energy efficiency investment that would be required to constructively meet the load forecasts assumed in the Clean Energy Standard and harmonize their DSIP projections to show how that level might be met. These discussions are already taking place in other regulatory forums, and should be used to inform and harmonize with the DSIP.

One way in which all utilities could immediately improve the usefulness of their DER analyses and projections is to complete DER potential studies, rather than relying on current programmatic budgets and interconnection queues. DSIPs should also provide some assessment of the extent to which third parties are likely to develop DERs within utilities' service territories, and the impact that new rate designs might have in promoting the development of DERs. Such activities would be consistent with the Commission's directives that the utilities solicit data from stakeholders, DER providers, and other data sources when forecasting "expected DER performance and penetrations levels over

[79] NYSEG, Initial DSIP, at 39.
[80] NYSEG, Initial DSIP, at 51.
[81] NYSEG, Initial DSIP, at 50.
[82] NY PSC, DSIP Guidance Order, at 19.
[83] National Grid, Initial DSIP, at 57, 68.
[84] Con Edison, Initial DSIP, at 46.

time,"[85] and that the utilities discuss the programs that they "may implement to increase the quantity and value of DER resources."[86]

Interconnection Requirements & Hosting Capacity

Interconnection Requirements and Hosting Capacity are intrinsically linked, as most interconnection upgrades increase the Hosting Capacity of that particular area in some way. The DSIPs appropriately identify many of the primary barriers to DER integration in the state, but do not provide sufficient detail as to how utilities are dealing with those barriers and facilitating increased penetrations of DER.

- National Grid's Initial DSIP correctly identifies anti-islanding and $3V_0$ protection schemes as the two most prominent interconnection challenges in its territory. However, the approaches described to resolve these issues fall far short of what is necessary to foster the continued adoption of DER on their system. The DSIP proposes several capital-intensive solutions,[87] but does not explore researching root causes or developing lower cost alternatives. This is an example of a business-as-usual mentality being applied to the interconnection process, which contradicts the goals and visions of REV and the utilities as DSPPs.

Electric Vehicles

The initial DSIPs contain relatively little information regarding plans and forecasts for Electric Vehicles (EVs) and Electric Vehicle Supply Equipment (EVSE) in each utility's service territory, and the information that is contained is incomplete or insufficiently explained. No utilities included plans for investing in EVSE infrastructure as part of their initial DSIP. The expectation of the Commission appears to be that EVSE will be fully addressed in the supplemental DSIP.[88] We agree that the supplemental DSIP holds significant potential to advance utility planning for EVSE, but as explained below, a single unified filing of the utilities will not alone adequately address the topic. Rather, as the Commission envisioned, the supplemental DSIP's discussion of EVSE will need to be complemented "by individual utility initiatives."[89] A logical place for these individual utility initiatives to be set forth is in an update to each individual utility's initial DSIP.

The DSIPs we reviewed discuss EVs and EVSE to different degrees. But it is clear that even those DSIPs with the most robust discussion on this front could be significantly

[85] NY PSC, DSIP Guidance Order, at 30.
[86] *Id*, at 31.
[87] National Grid, Initial DSIP, 63, 64.
[88] *See* NY PSC, DSIP Guidance Order, at 25-26.
[89] NY PSC, DSIP Guidance Order, at 26.

improved by applying lessons and principals from the supplemental DSIP once it is released. For example:

- Con Edison's DSIP does provide forecasts of the peak demand impact of EVs,[90] and states that its forecasts are based on "current registrations and expected growth rates."[91] However, Con Edison does not provide any source for those "expected growth rates," so it is difficult to judge whether they are reasonable. In addition, the utility does not offer any details regarding potential investments in electric vehicle supply equipment (EVSE).

- National Grid's Initial DSIP does not provide any information regarding the incorporation of electric vehicles into its energy and demand forecasts. The peak demand forecast on National Grid's System Data Portal does describe various EV scenarios that the utility has modeled, but makes clear that these EV forecasts have not been explicitly incorporated in National Grid's energy and demand forecasts.[92] National Grid's Initial DSIP does address EVSEs, and states that the utility "believes it may help accelerate EV adoption by installing EV charging stations,"[93] but fails to detail any investment plans related to EVSE.

- NYSEG's Initial DSIP addresses neither the impact of EVs on demand forecasts nor the role that the utility might play in helping to develop EVSE.

As part of the supplemental DSIP stakeholder engagement process, we have recommended that the utilities develop a coordinated forecasting methodology, taking into account state and federal policy requirements. Once the supplemental DSIP accomplishes these goals, each individual utility's DSIP should be updated to include this updated forecasting methodology in its DER forecast. The forecasts should account for approximately 860,000 electric vehicles on New York's roads by 2025 to match the state's commitment under the State Zero Emission Vehicle Memorandum of Understanding signed in October 2013.

Further and most importantly, each utility should submit proposals to facilitate or invest in EV charging infrastructure and to conduct EV outreach and education. These proposals should be consistent with the agreed-upon set of principles from the supplemental DSIP. While some of the undersigned parties have previously recommended that the demonstration project filing process or a similar procedural vehicle could be used for

[90] Con Edison, Initial DSIP, at 24, 33.
[91] Con Edison, Initial DSIP, at 42.
[92] National Grid, 2016 Electric Peak Forecast, at 13-14.
[93] National Grid, Initial DSIP, at 80.

filing these proposals,[94] they could also be included as part of each utility's updated individual DSIP filings.

These proposals should be subject to stakeholder review and comment. So as to facilitate easy review, these proposals could also be filed as standalone documents, and posted to a Commission-assigned matter number for EV-related actions to enable tracking and commenting by EV stakeholders. This would ensure that utility proposals are reviewed and evaluated in a manner that will promote the Commission's envisioned coordinated statewide approach.

The Commission should evaluate these proposals using the agreed-upon principles from the approved, final supplemental DSIP. For example, the June 17, 2016 letter to Commissioner Zibelman from Sierra Club, NRDC, Pace Energy and Climate Center and others recommends that these principles be:

> (a) effectively using price signals and load management practices to maximize benefits to the system, electricity customers and EV drivers, including facilitating the integration of renewable resources;
>
> (b) providing equitable deployment of services, including commitments to disadvantaged communities;
>
> (c) fostering a competitive market and the engagement of third party vendors of EV supply equipment and services in a manner that supports continued growth of the broader EV charging industry; and
>
> (d) increasing access to EV charging beyond single-family homes with a focus on multi-family dwellings, workplaces, and public high-power "fast charge" locations, in order to improve EV adoption and awareness.

Updating the initial DSIPs to include EV infrastructure deployment, outreach and education proposals, and better EV forecasting methodologies will allow the utilities to make significant progress in achieving the bold vision for electric vehicles set forth in the State Energy Plan and required by the Clean Air Act's Zero Emissions Vehicles program the State has signed onto.

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[94] *See* Case No. 14-M-0101, Comments Regarding Integration of Electric Vehicles (Jun. 17, 2016).

Response to Question 7: What other comments or suggestions do you have regarding the Initial DSIPs?

There are several other elements of the Initial DSIPs that are not deficient by the letter of the Commission's DSIP order, but that raise concerns about the efforts of the utilities to promote DER penetration and the goals of REV. In particular, the Initial DSIPs contain concerning sections regarding the status of interconnection standards, the criteria being used to screen NWAs, and timelines for the development of essential DSIP-related capabilities.

Interconnection Standards

The DSIPs of Con Edison and NYSEG suggest that these utilities are not in compliance with important interconnection standards. Con Edison indicates that it is not fully complying with interconnection requirements laid out by the Commission in its Track One Order. In particular, Con Edison is struggling to automate technical screening and impact study processes. In addition, the utility appears to indicate that it is not complying with the requirement that it share information via a publicly maintained queue.[95] We appreciate the utility's efforts to address these issues. Nonetheless, to the extent that a smoother, more transparent interconnection process enables more efficient DER penetration, Con Edison's delays in complying with the Track One interconnection requirements cut against the spirit of REV.

NYSEG acknowledges that it has been out of compliance with New York's Standardized Interconnection Requirements since 2014.[96] NYSEG also admits that, in 2013, it allowed its interconnection application processing times to reach 31 months.[97] Since then, NYSEG has developed a new interconnection portal that enables most applicants to submit necessary documents online, and has significantly decreased its application processing time.[98] These are positive steps. We encourage NYSEG to continue to work to fix the flaws in its interconnection process to avoid unnecessarily slowing the deployment of new DERs.

Stringent NWA Suitability Criteria

The Initial DSIPs of National Grid and NYSEG indicate that these utilities' NWA screening processes should be reviewed and improved to ensure that alternatives are being appropriately considered. Despite considering hundreds of potential NWAs,

[95] Con Edison, Initial DSIP, at 187.
[96] NYSEG, Initial DSIP, at 83.
[97] NYSEG, Initial DSIP, at 82.
[98] NYSEG, Initial DSIP, at 82.

National Grid has yet to successfully implement a single one.[99] The utility notes a list of challenges that have blocked past potential NWA projects, including projects being "driven by asset conditions," projects having "need dates that were too immediate," NWA having "cost estimates that did not meet the criteria," and projects being "unrelated to electric load."[100] Some of these challenges may be avoidable through improved planning and NWA screening practices, such as the identification of potential NWA opportunities further in advance. It is unclear whether National Grid is taking necessary steps to overcoming these barriers to NWAs. For example, Con Edison has indicated that it is working to expand NWA opportunities in several of its expenditure categories by streamlining its interconnection process and studying potential unaccounted-for benefits of NWAs.[101] National Grid's NWA screening process may benefit from similar efforts.

NYSEG's Initial DSIP presents an array of interim suitability criteria they are currently using to identify distribution projects that may be amenable to NWAs. These criteria include the traditional utility solution costing at least $1 million; the required construction start being far enough in the future (though NYSEG did not specify how far); any improvements not being based on asset conditions; and the NWA project load reduction being less than 20 percent of total peak load.[102] This is a rather restrictive set of conditions for a potential project to pass before it even reaches the stage of consideration on its merits. Con Edison's Initial DSIP presents an example of interim suitability criteria that are more appropriate for initial suitability screening. These criteria require that a potential NWA project address a system expansion need and avoid traditional projects that have not already spent half their budgets, but include nothing about the total cost of the traditional project or the size of the potential load reduction.[103]

Further, the DSIPs do not explain how New York's energy policy goals are being taken into account in the NWA development process. Given the directives from the Commission regarding DERs as NWAs, and given the state's clear energy policy goals for reducing customer costs, developing clean energy resources, and reducing carbon emissions, we recommend that the Commission require utilities to give priority to NWAs relative to conventional distribution infrastructure.

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[99] National Grid, Initial DSIP, at 53.
[100] National Grid, Initial DSIP, at 53.
[101] Con Edison, Initial DSIP, at 116.
[102] NYSEG, Initial DSIP, at 53.
[103] Con Edison, Initial DSIP, at 142.

Access to Data

As discussed above, the initial DSIPs submitted by the utilities make some initial progress on the sharing of customer data, but there is significant room for improvement. Two specific areas where the initial DSIPs fall short and should be revised, both through the supplemental DSIP and in a subsequent update to the initial DSIPs is that they should do more to facilitate building energy benchmarking and access to community-level data.

Facilitating Building Energy Benchmarking

Building energy benchmarking is a critical tool for scaling up energy efficiency in New York's buildings and, as such, the utilities' supplemental and revised initial DSIPs should incorporate practices that facilitate benchmarking to the greatest extent possible. At its simplest, benchmarking is the process of determining the total energy usage in a building using metrics (such as energy use per square foot) and obtaining a score that shows how that usage compares to other buildings of a similar size and type. The value of energy benchmarking is widely documented and validated, and it is a high-value and low-cost intervention. As the foundation of effective building energy management, benchmarking increases the adoption of efficiency investments and results in benefits for key stakeholders.[104] It increases demand for energy efficiency programs and provides utilities with useful information to prioritize program design and identify and engage potential program participants. It also provides building owners with an energy performance baseline, helps them to target their efficiency investments, and allows them to verify savings. In addition, benchmarking provides valuable information to policymakers to help shape building efficiency policies and enables building performance to be a factor in

[104] There are many resources demonstrating how benchmarking and utility delivery of whole building data facilitates the adoption of efficiency measures. *See* Institute for Market Transformation, *The Benefits of Benchmarking* (December 2015) [hereinafter "The Benefits of Benchmarking"], available at http://www.imt.org/uploads/resources/files/PCC_Benefits_of_Benchmarking.pdf). In addition, the Data Access and Transparency Alliance, organized by IMT, the Building Owners and Managers Association (BOMA) International, the Real Estate Roundtable, the U.S. Green Building Council, NRDC and Enterprise Community Partners, works to improve access to building energy data to support benchmarking across the country and has published a *Utilities' Guide to Data Access* (available at http://www.imt.org/news/the-current/new-utilities-guide-to-data-access). The State and Local Energy Efficiency Action Network also has *A Utility Regulator's Guide to Data Access for Commercial Building Energy Performance Benchmarking* (available at https://www4.eere.energy.gov/seeaction/publication/utility-regulators-guide-data-access-commercial-building-energy-performance-benchmarking). Resources addressing the benefit to utilities from benchmarking programs include Creating Value from Benchmarking: A Utility Perspective (available at http://www.imt.org/uploads/resources/files/Creating_Value_From_Benchmarking_IMT.pdf) and the Consortium for Building Energy Innovation's discussion regarding targeting utility efficiency programs using benchmarking data (http://cbei.psu.edu/testing-new-utility-driven-retrofit-programs/). DOE's Energy Data Accelerator has many additional resources, as well (https://www1.eere.energy.gov/buildings/betterbuildings/accelerators/energy.html).

the marketplace. Finally, benchmarking supports the objectives of REV, as it empowers customers with access to usage data, supporting "enhanced customer knowledge and tools for effective total energy bill management",[105] catalyzes efficiency improvements to reduce carbon emissions, and helps to achieve market transformation.

Across the country, benchmarking is an increasingly prevalent policy mandate and energy management tool. In addition to being used by many building owners (when the information is available), it is required by ordinance or statute in at least 15 cities, one county, and two states.[106] New York City is a national leader, with a local law requiring benchmarking of large buildings for the past five years and counting. Properties in New York City reporting in all years from 2011 to 2013 – covering over 650 million square feet – showed significant performance improvements, with Total Source Energy Use dropping by 6 percent over three years.[107] In addition, under Governor Cuomo's 2012 Executive Order 88, state-owned and managed buildings over 20,000 square feet are required to benchmark.

To facilitate benchmarking to a greater extent in New York State, utilities should deliver, upon request, aggregated whole-building monthly energy use information to all building owners if the building includes two or more meters and if additional conditions are satisfied (such as providing notices to included customers). To ensure that such information is provided in the most effective manner possible, utilities should implement systems to enable the direct and automatic upload of whole-building usage information in the formats needed for use in standard benchmarking systems, including EPA's Energy Star Portfolio Manager.[108] Implementing such systems would improve the quality of data, drastically reducing data entry errors inherent in manual data entry, and would reduce the cost of obtaining such data for building owners, especially in terms of time. Twenty-four of twenty-nine utilities outside of New York State providing whole-building energy benchmarking data to customers have enabled automatic transfer to Portfolio Manager.

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[105] Case 14-M-0101, Order Instituting Proceeding, at 2 (April 25, 2014).

[106] Numbers as of December 2015. *See The Benefits of Benchmarking*, at 7.

[107] New York City's Energy and Water Use 2013 Report, at 7, Figure 1, (August 2016), available at http://urbangreencouncil.org/sites/default/files/nyc_energy_water_use_report_2016.pdf). The results in New York are in line with results from evaluations of benchmarking with EPA's Energy Star Portfolio Manager, which showed a 7% reduction in energy use from 2008 to 2011 in a study of over 35,000 benchmarked buildings. *See* Benchmarking and Energy Savings, available at https://www.energystar.gov/sites/default/files/buildings/tools/DataTrends_Savings_20121002.pdf).

[108] See "Web Services" functions that enable utilities to automatically deliver usage information into customer-specific accounts in Energy Star Portfolio Manager and other systems: http://portfoliomanager.energystar.gov/webservices/home;jsessionid=322D9AE568DC072B3A5618348F850D30.beta-esws-dist-2 .

Utilities that currently use Energy Star Web Services to automatically exchange data with Portfolio Manager include: PG&E, Seattle City Light, Puget Sound Energy, Clark Public Utilities, Southern California Edison, Southern California Gas, Sacramento Municipal Utility District, San Diego Gas & Electric, Xcel Energy, Pepco, Pacific Power, PECO, Rocky Mountain Power and Commonwealth Edison.[109] We recommend that essential whole building information be provided at no cost.

In their supplemental and revised initial DSIPs, the utilities should also distinguish building owners from other users of customer energy data and from the general category of third parties and vendors and ensure that data aggregation policies are in place to preserve and promote access to whole-building data for energy management and benchmarking. The utilities should adopt a reasonable aggregation threshold of two or three meters to promote the availability of more complete benchmarking data and easier access for more building owners. Their policies to provide summary information can be tailored to resolve any privacy risks and considerations of the included customers (e.g., tenants in the buildings), following the models of Con Edison and numerous utilities around the country.[110] Whole building summary data contains no individual customer information. If the building total is aggregated usage from several customer meters, it is very difficult for the owner to use the information to "re-identify" the usage of any included customer. Building owners also commonly have direct access to the meters of tenants in the building, and thus can typically obtain a monthly total of specific tenants simply by visually reading the meter. To the extent that there are any residual risks present to customers from unusual fact patters, such risks can be mitigated with additional measures, such as utility-provided notices to "included" customers that the owner is obtaining whole-building usage, a registration process for building owners seeking whole-building usage information, and enforcement of customer complaints. We understand that utilities in New York City, which have operated programs to share usage information with owners to comply with benchmarking requirements, have experienced very few, if any, complaints or reports of owner misuse. Overly strict aggregation thresholds add no material protections for customers and only work to reduce the ability of owners to make use of the whole-building information. For a discussion of specific reasonable terms and conditions that could be used, *see* "How Utilities Can Give Building Owners the Information Needed for Energy Efficiency while Protecting Customer Privacy," *Electricity Journal*, November 2015.

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[109] https://www.energystar.gov/sites/default/files/tools/Web_Services_Fact_Sheet_01202016_508_1.pdf.

[110] "Guide to Data Access and Utility Customer Confidentiality," Energy Data Accelerator (January 2016) https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/Guide%20to%20Data%20Access%20and%20Customer%20Confidentiality_0.pdf.

The utilities should also ensure that their processes for building owners to obtain individual tenant usage information is streamlined, accomplishing the needed information exchange with reduced paperwork burdens, time delays, and costs. They should implement modern systems for customers to convey permission to information recipients and for utilities to validate that permission has been granted. Such processes include electronic and online approvals and accepting permission in lease agreements. In addition, the utilities should reform any requirements that customers deliver paper-based forms or "wet signatures." Situations when customer permission is required to deliver usage information include owners of large affordable housing buildings who need unit-level usage information for utility allowance models that reward efficiency investments.

Facilitating Access to Community-Level Data

Access to community-level data for regions and local jurisdictions is critical to the success of REV. Moreover, such data is equally important in facilitating the development of local climate and clean energy plans, as well as other important state initiatives, such as the New York State Clean Energy Communities program. Through the NYSERDA Utility Energy Registry work group and other efforts, we are hopeful that a standard reporting form, with quality controlled and consistent data to allow for easy geographic comparisons between different utility territories will be available. The availability of such community-based aggregated data will be a valuable tool for the Commission, NYSERDA, local governments, and interested stakeholders to track and measure progress under both the Clean Energy Fund and the utilities' energy efficiency programs, especially market transformation efforts, as well as to facilitate program adjustments and target future assistance.

Vague and Distant Timelines for Important Developments

The Initial DSIPs of NYSEG and National Grid contain several statements expressing an intention to improve systems and processes over timeframes that are distant, uncertain, or both. NYSEG lists many of its DSIP initiatives as extending well into the period that it refers to as "DSP 2.0," which encompasses all years beyond 2021. It will be important to track these commitments to ensure that NYSEG follows through on them in a reasonably prompt manner. Some of these stated goals include the following:

- Developing reliable DER forecasts, and including DER explicitly in load and resource forecasting[111]
- Implementing automation consistent with Volt/VAR Optimization[112]

[111] NYSEG, Initial DSIP, at 25, 50.

- Providing system-wide data to all distributed system market participants[113]
- Incorporating storage and microgrid into planning processes[114]
- Fully rolling out a data portal platform and energy savings store[115]
- Implementing a self-serve platform to help registered developers market and connect DERs[116]

National Grid's Initial DSIP includes similar commitments to make improvements that will better facilitate the goals of REV. It will be important to track National Grid's progress on these promises to ensure that it follows through on them. Some of these stated goals include:

- Changing design practices to facilitate DER interconnection: National Grid is "considering" making several changes to its standard design practices to facilitate the increasing penetration of DERs. These changes include building all new substations to 15 kV standard clearances, making all new grid devices compatible with future telecommunications, and rebuilding substations to 15 kV when addressing asset conditions in 5 kV areas.[117] These modifications are important to enabling the more widespread development of DERs, and National Grid does not provide sufficient clarity about its intentions to implement these changes.
- Introduction of storage evaluation into planning: National Grid is currently pursuing an "internal education effort to introduce storage evaluation into system planning."[118] Since storage is a growing DER resource, developing storage evaluation capabilities should likely be a near-term priority for National Grid.
- System Data Portal improvements: National Grid anticipates streamlining and automating its data reporting process so that information is made available on the portal in a timelier fashion. At present, the system is largely manual, and National Grid will only be refreshing much of its data once every six months.[119]

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[112] NYSEG, Initial DSIP, at 27.
[113] NYSEG, Initial DSIP, at 45.
[114] NYSEG, Initial DSIP, at 57.
[115] NYSEG, Initial DSIP, at 67.
[116] NYSEG, Initial DSIP, at 71.
[117] National Grid, Initial DSIP, at 128-29.
[118] National Grid, Initial DSIP, at 76.
[119] National Grid, Initial DSIP, at 42-43.

- Forecasting methodology improvements: National Grid plans to develop most elements of its new forecast methodology within three years, and to have completed the new methodology within five years.[120]

- Hosting capacity analysis development: National Grid intends to advance its hosting capacity analysis through four stages. In the current Stage 1, the company provides distribution indicators, but not hosting capacity evaluations or integrated DER value assessments.[121] National Grid states that it will be making its first set of Stage 2 hosting capacity evaluation maps available by January 2017, and that full deployment of evaluation maps should be complete by the end of 2017.[122]

- Online distributed generation interconnection functionality: National Grid is creating a new online system that will enable a fully automated distributed generation interconnection application process. The company expects distributed generation application functionality to come online in late 2016, with further improvements to follow.[123]

- Investments to make interval data widely available: National Grid plans to deploy feeder monitoring stations and substation RTUs to make interval data available for all circuits by 2024.[124]

[120] National Grid, Initial DSIP, at 49-50.
[121] National Grid, Initial DSIP, at 51.
[122] National Grid, Initial DSIP, at 52.
[123] National Grid, Initial DSIP, at 61-62.
[124] National Grid, Initial DSIP, at 73.