



systems.”<sup>6</sup> NRDC strongly support these objectives. NRDC also agrees with the purpose of the proceeding, which is to “establish a clear set of needed grid capabilities, establish targets for deployment of those capabilities, identify required investments to effectuate those targets, and identify the anticipated customer benefits and savings achievable from meeting those targets.”<sup>7</sup>

A key finding of the Plan is that reporting is inconsistent due to a lack of detailed and specific reporting requirements and outcome- or goal-oriented reporting. The Plan recommends performance metrics to track utility progress toward Distributed System Platform (DSP) capabilities. Performance metrics define the information that utilities, regulators, and other stakeholders can use to monitor and improve the performance of grid investments and the ability of utilities to leverage those grid investments for ratepayer and system benefits. We agree with the Plan’s recommendations regarding the need to establish performance metrics and urge the Commission to develop a comprehensive and consistent set of performance metrics for all utilities and a standardized template for utilities to report these metrics. In these comments, we provide a list of recommended performance metrics for consideration by the Commission and other parties. We based our recommended performance metrics on our review of performance metrics for related efforts in other jurisdictions.

Our comments begin with brief summaries of the Potential Study and the Plan. We then suggest objectives for DSP related to grid services and grid flexibility based upon State and Commission priorities, as defining these objectives is a necessary precursor to establishing performance metrics. Then, we provide a matrix of recommended performance metrics that align with each of the objectives, similar to those in place in several leading jurisdictions. We also

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<sup>6</sup> State of New York Public Service Commission. Case 24-E-0165. Proceeding on Motion of the Commission on Grid of the Future. Order Instituting Proceeding. April 18, 2024. Page 3.

<sup>7</sup> *Ibid.*

recommend that the Commission establish a process to enable the use of the Total System Benefits (TSB) metric in New York and discuss this proposal in detail.<sup>8,9</sup> Lastly, we provide recommendations regarding next steps, including a process for developing performance metrics and standardized reporting templates and potential timing.

## **II. Summary of Filings**

### **A. Grid Flexibility Potential Study**

The Potential Study provides an assessment of the cost-effective, achievable potential for grid flexibility in New York in 2030 and 2040. The Potential Study modeled 16 grid flexibility options for each investor-owned utility plus the Long Island Power Authority system, focusing on dispatchable, behind-the-meter resources with full-scale deployments or rigorous piloting.

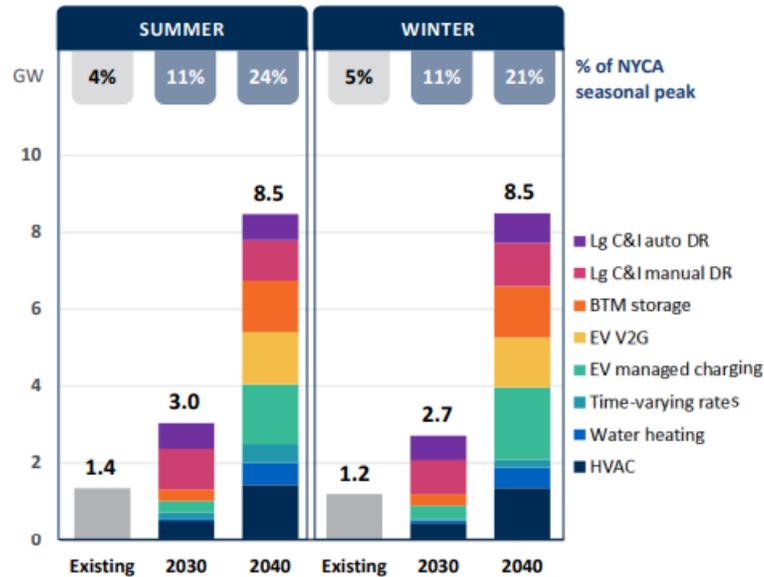
The analysis found that the grid flexibility potentials in 2030 and 2040 are substantially higher than New York’s current capability. In 2030, the cost-effective grid flexibility potential is 11 percent of NYISO’s summer and winter peak demand forecast, representing 3.0 GW and 2.7 GW of potential respectively. In 2040, the cost-effective grid flexibility potential is 8.5 GW of the NYISO summer and winter peak demand forecast, or 24 and 21 percent of these forecasts respectively. Figure 1 provides the breakdown of New York’s grid flexibility potential in 2030 and 2040 by source.

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<sup>8</sup> NRDC introduced Total System Benefits in comments by Natural Resources Defense Council, Regional Plan Association, Association for Energy Affordability, Urban Green Council, and New Yorkers for Clean Power in CASE 14-M-0094 - Proceeding on Motion of the Commission to Consider a Clean Energy Fund and CASE 18-M-0084 - In the Matter of a Comprehensive Energy Efficiency Initiative Comments on March 27, 2023.

<sup>9</sup> Chhabra, Mohit. 2022. “One metric to rule them all: A common metric to comprehensively value all distributed energy resources.” *The Electricity Journal*. 35 107192.

Figure 1. Grid Flexibility Potential in New York (GW)



Source: *New York's Grid Flexibility Potential, Volume I: Summary Report, p. 7.*

The Potential Study also found that by 2040, the portfolio of grid flexibility measures could avoid \$2.9 billion in annual power system costs, \$2.0 billion of which come from avoided generation capacity costs.<sup>10</sup> Avoided energy and transmission and distribution capacity costs make up the rest of the grid flexibility value stack.

Lastly, the Potential Study identified several barriers that hamper New York's ability to realize its grid flexibility potential and proposed a series of solutions to address these barriers.

The top five barriers identified are:

1. burdensome or restrictive permitting processes;
2. lack of consideration of DERs during distribution grid planning;
3. time-consuming regulatory processes for designing and approving new initiatives;
4. slow and expensive interconnection requirements; and
5. complexity of programs and difficulty in monetizing the full value of grid flexibility.<sup>11</sup>

<sup>10</sup> Grid Flexibility Study Phase 1 Final Report - Vol. I - Summary Report. Page 8.

<sup>11</sup> *Id.*, 10.

## **B. Grid of the Future Plan**

The first iteration of the Plan, prepared by DNV for NYSERDA and the New York Department of Public Service (DPS), provides a set of recommendations for enhanced requirements for the Distributed System Implementation Plans (DSIP).<sup>12</sup> To develop the recommendations, DNV analyzed the 2023 DSIP updates to assess the extent to which they complied with existing DPS guidance. DNV found inconsistency in reporting, due in part to a lack of detailed and specific reporting requirements. It also found that the emphasis was on process, instead of outcome- or goal-oriented reporting.<sup>13</sup>

DNV also conducted a regulatory landscape analysis that identified headwinds and tailwinds toward DSP implementation. Based on the regulatory analysis, the Plan presented a framework of capabilities necessary for utilities to develop for implementing DSP and a maturity matrix to measure progress towards each capability. DNV found that, although some progress had been made, many capabilities were not well-integrated across all utilities.<sup>14</sup>

Finally, DNV developed a series of recommendations for future DSIP requirements to fully realize the DSP. Key among these recommendations was for DPS to define clear technology and interoperability standards to promote coordination and interconnection. DNV also noted that requiring specific metrics to track utility progress toward a fully functional DSP would help make future DSIP updates more outcome-oriented.<sup>15</sup>

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<sup>12</sup> DSIPs are biannual filings by each of six investor-owned utilities in which the utilities report on their progress toward creating the DSP.

<sup>13</sup> Grid of the Future Plan - First Iteration. Page 3.

<sup>14</sup> *Id.*, 4.

<sup>15</sup> *Id.*, 6.

### III. Recommended Performance Metrics

Performance metrics serve as accountability mechanisms and enable the Commission, utilities, and stakeholders to objectively measure utility progress towards objectives. Without objectives and performance metrics, the Commission and stakeholders will not be able to track progress. This hindrance could lead to the Commission delaying action or taking no action at all. Table 1 below provides NRDC’s recommended objectives and performance metrics. Each performance metric corresponds to one of the following objectives that are defined to be consistent with State and Commission goals:

1. **Capture grid flexibility potential:** increasing DER deployment and utilizing DERs to provide grid services;
2. **Promote cost-efficient grid investments:** leveraging grid flexibility and grid services to avoid unnecessary infrastructure investments and ensuring proactive planning investments are utilized by customers;
3. **Achieve climate goals:** reducing greenhouse gas emissions;
4. **Improve reliability and resilience:** reducing the frequency and duration of outages; and
5. **Advance energy equity:** ensuring that disadvantaged communities (DAC) can participate in and benefit from grid services programs, while also achieving additional air pollution reductions from electric generation.

We recognize that progress for many metrics is likely contingent upon attainment of certain capabilities. In the Plan, DNV provides examples of these capabilities.<sup>16</sup> In addition to outcome-based metrics (such as the ones we propose), the Commission can require actions by defining a capability for the utilities to achieve, specifying how the Commission will determine

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<sup>16</sup> *Id.*, 40. Table 4-2. DSP Capabilities for Distribution Planning and Network Development.

if the utilities achieve the capability, and setting forth timelines to achieve that capability. One of the Distribution Planning and Network Development capabilities proposed by DNV is Tariff Planning and Submission. DNV defines this capability as “Engagement with relevant regulations and regulatory processes to ensure that planning is compliant and can be implemented,” and examples include rate case templates and benefit-cost modeling.

Additionally, we recognize that some metrics will be easier for the utilities to report than others. In fact, some metrics may be impossible to report on in the near term as the data is simply not available. This may be particularly true for equity-related metrics. Discussions about performance metrics and available data may reveal additional issues with existing data and opportunities for data development.

Our recommended metrics are based on performance metrics adopted in other jurisdictions, particularly Illinois, Minnesota, Hawaii, and Maryland. We selected these jurisdictions as they have well-developed performance metrics, including some metrics that relate to grid modernization activities. Table 1 also shows the sources of each of NRDC’s recommended performance metrics. We note that these jurisdictions do not have all the reliability, resilience, and equity-related metrics that we recommend. We align reliability and resilience metrics with those already established in New York. In addition to equity metrics from other jurisdictions, we recommend equity metrics that are related to the metrics associated with reliability, resilience, and climate objectives. We also include the Total System Benefits metric which we discuss in greater detail in a subsequent section.

Table 1. NRDC's recommended performance metrics and jurisdictions with similar metrics

Objectives	Performance Metrics	Unit	IL	MD	HI	MN
1. Capture Grid Flexibility Potential	DER systems providing grid services, in total and by type	MW	✓		✓	
		#	✓		✓	
		%	✓		✓	
	Summer and winter system peak load reduction from dispatchable and non-dispatchable DERs providing grid services	MW	✓	✓		
		%				
	Summer and winter system peak load reduction from dispatchable and non-dispatchable DERs providing grid services as a share of achievable potential	%				
	Time to interconnect DER systems, by size	Average days	✓		✓	
		Min days				
		Max days				
	Customers enrolled in time-varying rates, by class	#		✓	✓	
		%				
	Total System Benefits from grid flexibility programs	\$				
Total System Benefits from grid flexibility programs as a share of achievable potential	%					
2. Promote Cost-Efficient Grid Investments	Actual and planned grid investments, broken out by category (Asset Condition, New Business, Capacity, Fleet/ Tools/Equipment, Grid Modernization/Non-Wire Alternatives (NWAs))	\$	✓	✓		✓
		%	✓	✓		✓
	Utility System Benefits from grid flexibility programs	\$			✓	
	Projects considered for NWAs	#	✓	✓		✓
		%				✓
	Project selected for NWAs	#		✓		
		%				
	Total cost of NWAs deployed	\$				
	Total additional hosting capacity enabled through proactive planning investments	\$		✓		✓
		MW		✓		✓
	Additional hosting capacity enabled through proactive planning investments being utilized by customers	MW		✓		
		%				

Objectives	Performance Metrics	Unit	IL	MD	HI	MN
3. Achieve Climate Goals	(Avoided GHG emissions from grid services programs) / (MW DERs providing grid services)	Metric tons/MW		☑		☑
4. Improve Reliability and Resilience	SAIFI and CAIDI, for overload-caused outages	SAIFI	☑			
		CAIDI				
5. Advance Energy Equity	Investment in grid services programs, for DACs and non-DACs	\$		☑		
		\$/customer				
	DERs providing grid services, for DACs and non-DACs	MW		☑		
		MW/customer				
	Customers served by grid services programs, for DACs and non-DACs	%			☑	
	Constrained feeders, for DACs and non-DACs	#		☑		
		%		☑		
	SAIFI and CAIDI for overload-caused outages, for DACs and non-DACs	SAIFI				
		CAIDI				
	(Avoided GHG emissions from grid services programs) / (MW DERs providing grid services), for DACs and non-DACs	Metric tons/MW				
Grid service program rate and bill impacts for LMI and non-LMI participants and non-participants	\$					

Sources:

- *Illinois: Petition for Approval of a Multi-Year Rate Plan pursuant to 220 ILCS 5/16-108.18, Illinois Commerce Commission Docket No. 22-0487/23-0082, Order Requiring Ameren Illinois Company to file an Initial Multi-Year Integrated Grid Plan and Initiating Proceeding to Determine Whether the Plan is Reasonable and Complies with the Public Utilities Act. Available at: <https://www.icc.illinois.gov/docket/P2022-0487/documents/345318/files/602917.pdf>.*
- *Maryland: ESP Metrics, Consolidated 4/28/2025.*
- *Hawaii: In the Matter of Instituting a Proceeding to Investigate Performance-Based Regulation, Public Utilities Commission of the State of Hawaii Docket No. 2018-0088, Decision and Order No. 37787. Available at: <https://shareus11.springcm.com/Public/DownloadPdf/25256/4ca1cb0d-700d-ee11-b83b-48d377ef808/381464d5-540e-ee11-b83b-48d377ef808>.*
- *Minnesota: In the Matter of Xcel Energy's 2023 Integrated Distribution Plan, Minnesota Public Utilities Commission Docket No. E-002/M-23-452, Order Accepting 2023 Integrated Distribution Plan and Modifying Reporting Requirement. Available at: <https://www.edockets.state.mn.us/documents/%7B90BDFB91-0000-C212-9EBA-FEC602C284D2%7D/download?contentSequence=0&rowIndex=32>.*

#### **IV. Total System Benefits**

In this section, we expand on the Total System Benefits (TSB) metric, given that its use is less well-understood. We explain why New York should use the TSB metric to evaluate DER and grid services program benefits relative to costs. Unlike the other metrics listed in Table 1 above, the TSB metric goes beyond measuring utility performance to enable comprehensive valuation of benefits provided by DERs to the grid based on utility avoided cost. This valuation facilitates direct comparison between the full range of benefits different types of DERs can provide. The TSB metric can serve as a critical tool to optimize planning and procurement processes for DERs and help unlock New York's DER potential.

##### **A. Fragmented DER valuation and procurement creates inefficiencies**

Fragmented DER procurement, each with its own methods of measurement and valuation, causes at least three inefficiencies: (1) it leads to incomplete valuation of DERs; (2) it prevents multiple DERs from competing to provide value and thereby ignores the interactive effects between multiple DERs; and (3) fragmentation causes unnecessary administrative burden.

The same DER can achieve multiple ends and should be valued accordingly. For example, a heat pump water heater can electrify gas end uses (decarbonization and energy efficiency), replace an inefficient electric water heater (energy efficiency), and shift load by pre-heating water in line with electric grid needs (demand flexibility/load shifting). Similarly, a smart thermostat can reduce electric demand during times when supply is constrained (demand response) and reduce annual energy consumption (energy efficiency). Including these technologies in programs focused solely on energy efficiency, for example, risks undervaluing their full system benefits and leads to underinvestment in resources that could provide significantly greater value if evaluated through a comprehensive, multi-benefit framework.

Fragmented DER implementation also prevents multiple DERs with the same value from competing against each other as implementation fails to account for the interactive effects between DERs. This leads to missed opportunities and/or unnecessary spending. If the objective of a regulatory planner is to cost-effectively avoid the need for building new capacity and to reduce total energy use, then that planner could apply energy efficiency, distributed generation, and demand response in various combinations to meet that goal. Ideally, a planner would define the total need and let providers of different DERs compete to meet that system need in a least-cost manner.

Finally, implementing DERs through fragmented and siloed initiatives increases administrative burdens, creates duplicative efforts, and undermines efficient deployment by missing opportunities for coordination, scale, and holistic system planning. This is because there is overlap between the target customers for the marketing efforts for each of these DERs and the energy and policy benefits these DER procurement programs aim to provide. Integrated deployment of DERs can also reduce soft costs by offering customers a one-stop shop for demand-side management technologies and may also help customers identify the best combination of solutions given personal preferences and budgetary constraints.

The Potential Study recognizes and highlights this issue, citing “the complexity of programs and difficulty in monetizing the full value of grid flexibility” as one of the top five barriers to scaling grid flexibility in New York.<sup>17</sup> The Potential Study further explains that “combining multiple value streams is difficult, both due to the complexity and because in some cases, different sources of value are compensated through different programs that may not allow

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<sup>17</sup> Grid Flexibility Study Phase 1 Final Report - Vol. I - Summary Report. Page 10.

simultaneous participation.”<sup>18</sup> To address this, the Potential Study should also represent the identified flexibility potential in terms of the TSB. Expressing potential in TSB terms would translate abstract grid capabilities into monetizable, system-wide value, making the economic case for grid flexibility more concrete. This would facilitate comparison with traditional infrastructure investments, guide procurement and planning decisions, and help prioritize high-value flexibility resources within an integrated planning framework.

**B. The TSB metric comprehensively values all demand-side management measures, which promotes an integrated approach that optimizes program implementation**

The TSB metric is the only comprehensive valuation of all demand-side measures’ ability to meet future energy system needs, climate policy goals, and environmental externalities, as it can be applied uniformly to all DERs. The equation below shows the calculation for TSB, which is to multiply the DER load-shape by the hourly avoided costs through the DER’s effective life.<sup>19</sup> While this should be done using hourly data if the grid has a high penetration of intermittent resources, the approach does not require hourly granularity; coarser time resolutions—such as seasonal or time-of-use periods—can still provide meaningful insights and guide efficient resource deployment. As New York already has already determined a proxy value for these avoided costs in the form of the Value of Distributed Energy Resources (VDER) tariff, the TSB should incorporate and build upon the VDER framework.

$$TSB = \int_{t=0}^{t=n} (loadshape \times avoidedcosts) dt$$

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<sup>18</sup> *Id.*, 55.

<sup>19</sup> For dispatchable demand response initiatives, the lifetime is equal to the number of demand response events in the analysis.

This simple formula is applicable to all DERs. For a demand response event, the TSB is equal to the product of the load shape of the event and the applicable avoided costs. The TSB for electrification measures is the sum of the gas TSB (due to decreased gas use and related emissions reductions) and the negative electric TSB (due to increased electric use and related emissions increase). The TSB is fully compatible with the VDER value stack and other DER programs for storage, demand response, or managed electric vehicle charging.

The TSB metric represents the “B” in Benefit-Cost Analysis (BCA)—that is, the numerator of the BCA ratio—and should reflect the full stream of utility system benefits the resource provides over its effective life. From both the Utility Cost and Total Resource Cost test perspectives, this includes avoided utility expenditures (e.g., energy, capacity, transmission, and distribution costs), as well as additional system-wide benefits such as improved resilience and reduced environmental externalities to the extent they are incorporated into the avoided costs. Even though the TSB metric is not completely novel, its application as a holistic and consistent means for evaluating grid investments is an expansion of VDER’s current use in New York.

The TSB metric represents the aggregate value a DER provides toward meeting energy system needs (energy, demand/reliability, transmission & distribution, capacity) and related energy sector policy goals related to climate, resilience, and equity. This approach captures the full value of a DER toward achieving a reliable, least-cost, and decarbonized grid. For example, the TSB represents the aggregate value a smart thermostat provides as a demand response and an energy efficiency measure; it also accurately describes the value heat pump water heaters can provide for electrification, demand response, and energy efficiency. The TSB metric also highlights the relative magnitude of each measure’s stream of benefits, specific to its location and temporal performance/load curve.

### **C. The TSB metric simplifies and optimizes DER program implementation**

Transitioning to the TSB metric to measure the full value of DERs has many practical advantages. First, because the TSB metric can be used to set goals for all DER programs, it helps break down resource-specific silos. By using a common approach to value multiple DERs, resource planners can encourage competition between all DERs to meet energy system and carbon reduction needs most cost-effectively and can account for the interactive impacts of different DERs.

Second, the TSB metric enables the cream to rise to the top of the portfolio because the measures that contribute the most to New York's climate and clean energy goals over their full measure-life produce the highest TSB value. Setting goals and valuing measures in terms of a TSB metric helps develop a technology-neutral priority order for DER procurement to meet grid needs and carbon reduction goals. It enables DERs to be combined and compared to offer more expansive programs as they now have a common unit of valuation.

Third, the TSB metric also makes cost-effectiveness determinations easier and more intuitive. If the TSB for a DER measure, program, or portfolio is greater than the costs to acquire it, then that DER measure, program, or portfolio is cost-effective. Every time the Commission updates the inputs to calculate the TSB, the Commission and the utilities can reoptimize the entire portfolio of programs and measures to reflect the refreshed TSB values (we discuss the data necessary to develop TSB goals in the subsection below).

Importantly, the TSB metric helps supercharge demand flexibility because it values those measures that save energy when and where it is most valuable to the grid. The TSB metric can describe the combined energy and load-shifting value of each measure. For example, the TSB metric will capture the total value realized by a heat pump water heater with load-shifting

capability. The TSB can inform the calculation of program incentives, thereby enabling DERs to capture the full value of grid flexibility.

**D. A roadmap for transitioning to the TSB metric exists, and its implementation quickly produces benefits**

The California Public Utility Commission (CPUC) has implemented the TSB metric to describe goals for energy efficiency, some demand flexibility measures, and some electrification measures.<sup>20</sup> In New York, the Commission can follow the roadmap that the CPUC developed for transition to the TSB metric. Specifically, the CPUC required that the TSB metric be phased in over a three-year period. The CPUC further required the California investor-owned utilities (IOU) start tracking the TSB in parallel with energy savings goals and apply the TSB metric for developing their portfolios (i.e., shadow pricing) in the meantime. The CPUC developed a TSB target through the most recent potential study; this target is inclusive of energy efficiency, electrification, and some demand response measures.

The TSB metric has already led to planning improvements in California. The CPUC started using the metric to track goals and IOU accomplishments toward goals, which provides the IOU program administrators freedom to combine different measures to best achieve these goals and enables the initiation of building electrification efforts through their energy efficiency portfolios.<sup>21</sup> The IOUs reported in their recent energy efficiency program filings that the TSB metric made planning for multiple resource procurement goals (energy, demand, and carbon savings) more efficient.<sup>22</sup> Marin Clean Energy applied the TSB metric to develop innovative

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<sup>20</sup> California Public Utility Commission (CPUC). 2021e. Assessment of Energy Efficiency Potential and Goals and Modification of Portfolio Oversight Process. Rulemaking 13-11-005, Decision 21-05-031 (May 20, 2021). <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M385/K864/385864616.PDF>.

<sup>21</sup> CPUC. 2021f, April 16. Public utilities commission April 16, 2021 Agenda ID #19409 Rate setting to parties of record in rulemaking 13-11-005. <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M378/K256/378256443.PDF>.

<sup>22</sup> Pacific Gas & Electric (PG&E). 2022. Pacific Gas and Electric Company Energy Efficiency 2024 Business Portfolio Plan; PG&E Energy Efficiency 2024–2031 Strategic Plan Prepared Testimony Exhibit 1.

pay-for-performance programs that incentivize customers to adopt DERs that help meet California’s carbon reduction and reliability needs (in addition to all other services that DERs provide).<sup>23</sup>

**E. The data necessary to calculate the Total System Benefits is readily available**

No new data incremental to that which is already applied in New York is necessary to develop the TSB. Moving to the TSB metric, however, does underscore the importance of two categories of inputs: (1) DER measure characteristics, and (2) avoided costs.

First, DER measure characteristics have heightened importance under the TSB metric. The measure characteristics that are necessary to fully realize the potential of the TSB metric are primarily the DER impact load shape and how long a DER is expected to be active (e.g., the effective useful life, or EUL, for distributed generation or the number of events for demand response initiatives). As the TSB metric intends to capture time-varying impacts of DERs, it is important that time-varying DER load shapes are as accurate as possible. Similarly, because the TSB metric aggregates the impact of a DER through a DER’s lifetime, the calculation requires an accurate estimate of EUL of DER measures. Any errors and uncertainties that exist within these inputs flow through to cost-effectiveness estimates as well. Moving to the TSB metric highlights the importance of and encourages research on these inputs. This will also reduce any inaccuracies that exist in cost-effectiveness analyses.

Second, avoided costs have heightened importance under the TSB metric, as they are the backbone of any DER cost-effectiveness evaluation. It is essential for any DER planning process

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[https://www.caeecc.org/files/ugd/849f65\\_3c74e70e20ae4c7d8e09edfbb402eb27.pdf](https://www.caeecc.org/files/ugd/849f65_3c74e70e20ae4c7d8e09edfbb402eb27.pdf).

<sup>23</sup> St. John, J., 2021, April 19. “Can a new way to pay for behind-the-meter flexibility help prevent rolling blackouts in California?” *Canary Media*. <https://www.canarymedia.com/articles/grid-edge/can-a-new-approach-to-demand-flexibility-help-save-california-from-rolling-blackouts>.

to start with comprehensive locational and time-varying avoided costs. Unlike in California, where midday solar surpluses cause dramatic hourly price swings, in New York the system shows variation mostly by season and location. For example, winter and summer peak hours in New York carry roughly twice the energy value of off-peak periods, and downstate zones like J (New York City) or K (Long Island) see average prices nearly double those in upstate zones such as A or C. Accordingly, the Commission can begin by defining TSB values that vary by NYISO load zone and by broad time-of-use periods (seasonal, on-peak vs. off-peak), much like an enhanced time-of-use rate structure. This coarse granularity is sufficient in the near term to capture most of the benefit by directing demand response, efficiency, and other DER efforts to the times and places of greatest system value, without needing to manage large quantities of hourly data at the outset.

Avoided costs should describe the incremental short- and long-run impacts of marginal changes in energy consumption. These should include all relevant energy system costs and energy-system-related environmental and other policy compliance costs that the utility would incur (and pass on to its customers through their utility bills) in the absence of a demand-side initiative. These avoided costs should include values for internalized environmental costs as well as environmental externalities. There are models for public commissions to develop accessible and well-documented avoided costs.<sup>24</sup>

#### **F. New York can align TSB metric deployment with its grid planning and climate objectives**

In New York, implementing the TSB metric should follow a phased approach, similar to California's but tailored to New York's grid conditions and planning processes. As mentioned

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<sup>24</sup> See, e.g., the California Public Utility Commission's avoided cost calculator and related documentation here: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/idsm>.

previously, the Commission should develop temporally and locationally specific TSB values. Some aggregation across time periods or locations with like values may be reasonable as it can markedly improve the valuation of demand response, energy efficiency, and electrification measures compared to the current fractured approach, yet avoids the complexity of full hourly modeling at the outset. Over time, as renewable penetration increases (e.g. more wind adding seasonal differences and solar adding daytime variability) and as electrification shifts loads, New York can incrementally refine the TSB metric with more granular temporal and locational values. In other words, the TSB framework can evolve in step with the grid: initially using seasonal/on-peak factors, then moving toward finer hourly or sub-hourly resolutions as needed by the early 2030s.

Importantly, the transition to TSB should be well coordinated with New York’s ongoing planning initiatives. The Commission should aim to have the TSB metric fully operational by the next phase of the New Efficiency: New York (NENY) program (no later than 2030) with interim years used for “shadow” implementation. To build familiarity and to inform target-setting during this transition, the Commission could require utilities to track and report shadow TSB achievements alongside traditional energy savings, similar to California’s approach.

In parallel, the Commission and stakeholders should use forums such as the new Coordinated Grid Planning Process and the Proactive Planning Process (currently under development) to vet and integrate the data inputs needed for the TSB metric. Developing a robust TSB metric does not require wholly new data, but it does depend on the quality of certain inputs. These include the time-varying load shapes that characterize different efficiency or DER measures, the duration or lifetime over which a measure delivers savings (EUL for efficiency

and distributed generation, or expected number of events for demand response), and the utility avoided costs used to monetize those savings.

By leveraging existing planning proceedings, the Commission can ensure these inputs are New-York-specific and up to date. For instance, accurate DER load profiles and lifetimes need continuous refinement (an area often overlooked when focus was only on annual savings), and avoided cost estimates should reflect the incremental energy, capacity, and environmental costs that vary by time and location on New York’s grid. Processes such as the Coordinated Grid Planning Process and the utilities’ benefit-cost analysis updates offer a venue to align TSB calculations with the latest system data. This alignment will ensure that, for example, a kWh saved on a hot August afternoon in Zone J is valued higher than one saved on a mild spring night upstate, in line with its actual system benefit. By phasing in the TSB metric, integrating it with broader grid planning efforts, and rigorously vetting its input assumptions, New York can smoothly transition to using the TSB metric. This will enable the state to prioritize demand-side investments that yield the highest total system value, aligning energy efficiency, demand flexibility, and electrification programs with New York’s climate and reliability goals in the most cost-effective way.

**G. This proceeding is the right venue for the Commission to adopt the use of the TSB metric**

In 2023, NRDC, along with other organizations, put forward a proposal for the Commission to apply the TSB metric to New York’s energy efficiency portfolio.<sup>25</sup> The Commission’s energy efficiency order recognized the value of the TSB metric, finding that it “could bring uniformity to the measurement of outcomes across multiple programs, ranging from

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<sup>25</sup> Comments of Natural Resources Defense Council, Regional Plan Association, Association for Energy Affordability, Urban Green Council, and New Yorkers for Clean Power. March 27, 2023. Case 18-M-0084.

[energy efficiency] to DER deployment to the development of non-pipes alternatives projects, and thereby facilitate cost allocation decisions while guiding improvements to program design.”<sup>26</sup> However, the Commission decided against adopting the TSB metric in that proceeding, citing the significant effort it would require for “evaluating and possibly modifying, consolidating, or discarding tools and metrics currently in use to steer and evaluate the outcomes of other programs,” which “would go beyond the management of the [energy efficiency/beneficial electrification] portfolios being considered.”<sup>27</sup> The current proceeding, the purpose of which is to “unlock innovation and investment to deploy flexible resources –such as DERs and virtual power plants (VPPs),” provides the optimal venue for the Commission to establish a pathway to enable the use of the TSB metric for DER programs in New York. The TSB can help address several barriers to grid flexibility deployment identified in the Potential Study:

- The design of program/tariff options is complex and prevents some technologies from monetizing the value of grid flexibility.
- Current programs and tariffs may not reflect the full value that grid flexibility can provide.
- There is no compensation mechanism for DERs that leads to permanent changes to customer load shapes.
- Benefit-cost analyses of utility programs are too conservative or don’t include all benefits.
- The regulatory process to develop and approve new programs and investments is often slow.

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<sup>26</sup> New York Public Service Commission. Order Directing Energy Efficiency and Building Electrification Proposals, p. 77. July 20, 2023. Case 18-M-0084.

<sup>27</sup> *Ibid.*

## **V. Next Steps**

NRDC strongly supports the Commission’s efforts to modernize New York’s distribution system planning and harness the full value of DERs and grid flexibility. With the foundational work of Phase 2 now substantially complete, it is imperative to transition swiftly and strategically to Phase 3. To that end, NRDC offers the following recommendations to finalize Phase 2 and launch Phase 3.

### **A. Finalizing Phase 2**

To bring closure to the current stage and establish a clear record for the next iteration of the Grid of the Future Plan:

#### **1. Commission-Endorsed Performance Metrics Framework**

The Commission should issue for public comment a proposed list of standardized performance metrics and accompanying definitions, grounded in the recommendations of the Plan and stakeholder input to date, including NRDC’s recommended metrics discussed in Section II. Metrics should align with the five core objectives identified by NRDC—grid flexibility, cost-efficiency, climate mitigation, reliability/resilience, and equity—and include a standardized reporting template.

#### **2. Establish Data Availability and Gaps Roadmap**

To ensure utilities can begin tracking and reporting the performance metrics, the Commission should direct the utilities to provide a detailed assessment of current data availability for each proposed metric and a plan to address data gaps over time.

#### **3. Issue Staff Whitepaper on DSIP Reform**

To operationalize the Plan’s insights, the Department should prepare a Staff Whitepaper with proposed reforms to DSIP content, format, and schedule, including the use of standardized

reporting templates and improvements to utility-specific capabilities based on the DSP maturity matrix.

## **B. Launching Phase 3**

To advance Phase 3 on schedule and in alignment with the State’s climate and grid goals:

### **1. Initiate the Second Iteration of the Grid of the Future Plan**

The Commission should formally initiate Phase 3 and direct DPS and NYSERDA to produce the second iteration of the GOTF Plan by December 2025. This plan should:

- Direct utilities to improve DSP capabilities.
- Propose a regulatory pathway for implementing DSP-aligned markets, tariffs, and DER integration strategies.

### **2. Develop and Adopt Total System Benefits**

The Commission should initiate a process to transition to the use of the TSB metric for evaluating DER program benefits. As discussed in Section III, this metric will enable an integrated valuation framework that supports coordinated procurement of flexible resources across programs.

As a foundational step, the Commission should direct DPS and NYSERDA to translate the findings of New York’s Grid Flexibility Potential Study into TSB values. This involves applying updated avoided cost assumptions to the identified megawatts of cost-effective flexibility potential in 2030 and 2040, which would allow the Commission and stakeholders to quantify the lifetime system value of targeted flexibility deployments. Doing so will strengthen cost-effectiveness analyses, inform target-setting, and guide prioritization of flexible DER resources in both DSIP and Coordinated Grid Planning Process.

### **3. Commission a Grid Services Market Roadmap**

Informed by the Grid Flexibility Study’s findings on value stream fragmentation, the Commission should initiate development of a roadmap for distribution-level grid services markets, including tariff design, DER compensation, and roles for competitive third parties.

### **4. Set Demand Flexibility Targets and Align Incentives**

The Commission should direct utilities to adopt binding 2030 and 2040 demand flexibility targets based on the achievable potential quantified in the Potential Study. These targets should be disaggregated by utility, resource type, and season, and they should prioritize dispatchable resources that can be integrated into system planning. To ensure accountability, the Commission should develop Earnings Adjustment Mechanisms (EAM) that reward utilities for exceeding demand flexibility deployment targets and penalize shortfalls, for example, with performance metrics tied to load reduction, grid services delivered, and customer participation—especially in disadvantaged communities.

These recommendations are designed to complete the work of Phase 2 and initiate a rigorous and forward-looking Phase 3 that translates analysis into accountability and planning into action. Establishing standardized performance metrics, modernizing DSIPs, integrating DER valuation, and launching the next GOTF Plan iteration are necessary steps to ensure the distribution grid becomes a decarbonization enabler rather than a bottleneck.