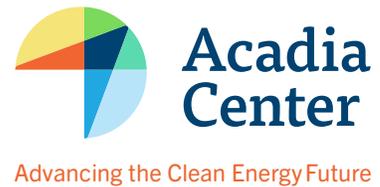


Assessing New York's Proposed 'New Efficiency' Initiative

Recommendations for Maximizing and Accelerating Energy Efficiency Procurement

July 2018



Overview

As the cleanest and cheapest energy resource available, energy efficiency is the key to unlocking the full potential of New York's emerging clean energy economy and the substantial consumer, economic, and environmental benefits it offers. States with nation-leading energy efficiency policies have shown the way.

The same transformative opportunity awaits New York. To seize it, New York must expand its commitment to energy efficiency by adopting necessary policy clarity, aggressive savings targets, and stable funding levels. The status quo should be viewed as untenable. Strong efficiency investments in neighboring states, for example, have deferred the need for expensive new energy infrastructure projects and produced billions of dollars in economic benefits.¹ New York's current utility efficiency savings levels—roughly one-sixth of the level of the highest-performing state, Massachusetts—leaves efficiency's significant benefits largely unrealized for most of the state's residents and businesses.² New York can, and must, do much more to maximize and accelerate the procurement of new cost-effective energy efficiency.

Against this backdrop, Acadia Center commends New York for its recent renewed focus on energy efficiency and recognition of the urgent need to rethink current approaches. The release of the *New Efficiency: New York* white paper by the New York State Energy Research and Development Authority (NYSERDA) and the Department of Public Service (DPS) is a welcome development.³ The central proposal of *New Efficiency: New York* is a new 2025 energy savings target of 185 trillion British thermal units (Tbtu).⁴

Acadia Center analyzed this new target to determine whether it would maximize energy efficiency's impact in and benefits for New York. Based on that analysis, Acadia Center offers four recommendations that, if implemented, will strengthen the likelihood of achieving the 2025 energy efficiency target:

1. **Maximize impact and benefits:** Boost current low levels of efficiency savings and include only savings attributable to New York's efforts in the 2025 target.
2. **Manage underperformance risk:** As New York seeks novel market approaches to capture efficiency opportunities, ensure that forecasted savings are aligned with the latest results data to lower the risk of actual results underperforming the 2025 target.

¹ Efficiency implemented to date in the New England states will produce \$45.7 billion in economic benefits, cut electric use by 177,000 GWh, and avoid 71 million metric tons of carbon pollution, based on an Acadia CLEAN Center analysis of Acadia Center data and electric efficiency data from electric efficiency program administrator annual reports, plans and state efficiency databases.

² See *An Energy Efficiency Proposal for New York: Investing in a Low-Cost Resource* (March 2018), at p. 5 (available online at <https://acadiacenter.org/document/an-energy-efficiency-proposal-for-new-york/>).

³ *New Efficiency: New York* is available online at <https://www.nyserda.ny.gov/About/Publications/New-Efficiency>. Since the outset of New York's Reforming the Energy Vision initiative in early 2014, Acadia Center has advocated for New York to boost lagging levels of energy efficiency to better optimize its energy system and reap significant consumer, economic, clean energy and carbon benefits.

⁴ *New Efficiency: New York* at 2.

3. **Provide clear guidance to utilities:** Establish an implementation plan for the 2025 target that identifies new funding sources and interim savings targets for when utilities procure energy resources to meet customer load.
4. **Accelerate and backstop savings:** Require a faster ramp-up in annual utility energy savings and automatic backstop measures for new methods to ensure savings achieve the 2025 target.

By making these recommended improvements, New York will have designed an aggressive, yet sound, energy savings target that will help drive New York forward into a prosperous clean energy future.

Recommendations

1. Maximize Impact and Benefits: Boost Current Low Levels of Efficiency Savings and Include only Savings Attributable to New York’s Efforts in the 2025 Target

The proposed 2025 target aims for a relatively minor increase in new efficiency over previously planned efforts, despite the current low levels of actual efficiency savings achieved in New York compared to leading states. As explained in *New Efficiency: New York*, the 185 TBtu savings target for 2025 is comprised of cumulative annual site energy savings from 2015-2025 relative to forecasted site energy consumption in 2025.⁵ The target consists of both existing state and utility efficiency programs (though not necessarily at today’s savings levels), referred to as “sustained actions,” and new efficiency efforts or programs the state has yet to undertake, referred to as “accelerated actions.”⁶

Projected savings from existing efficiency programs comprise approximately 143 TBtu of the overall 185 TBtu. If New York did nothing but continue on its current course and the existing or “sustained” programs perform as the state has predicted (these predictions are in some cases substantially greater than current savings from these programs, as explained in the following recommendation), it would achieve 77% of the 2025 target.

Sustained actions consist of the following programs, which are listed in descending order of TBtu savings and which include certain assumed discount factors to avoid likely overlap (i.e., double counting) with other state and utility programs:⁷

- Sustaining utility Energy Efficiency Transition Implementation Plan and System Energy Efficiency Plan investments at approved 2019 levels (40 TBtu)
- Projected savings from efficiency projects that receive direct NYSERDA support or NY Green Bank financing (32 TBtu)⁸

⁵ See *New Efficiency: New York* at 2.

⁶ *Id.* at 25-28.

⁷ The discount factors are included in the overall TBtu number.

⁸ This includes a 30% discount factor for direct electric and gas savings and a 20% discount factor for direct oil savings to account for overlap across complementary NYSERDA and utility activities, as well as savings measured from existing conditions that overlap with codes and standards. See *New Efficiency: New York* at 26.

- Projected savings from expected indirect market effects as a result of NYSERDA investment and market activity (21 TBtu)⁹
- Energy Efficiency Portfolio Standard programs administered by utilities and NYSERDA (20 TBtu)
- Electric savings from building codes and federal appliance standards (15 TBtu)
- Projected savings from Long Island Power Authority’s Efficiency Long Island portfolio (9 TBtu)
- Projected savings from energy efficiency demonstration projects, non-wires alternatives, and new utility efficiency programs (6 TBtu)
- New York Power Authority (NYPA) EE projects with state and municipal government customers in southeast New York (4 TBtu)
- Statewide initiative to increase energy efficiency in state buildings consistent with Executive Order 88 (3 TBtu)¹⁰
- Estimated savings from existing Weatherization Assistance Program and energy efficiency measures as part of NYS Homes and Community Renewal financing for multifamily rental housing (3 TBtu)
- NYPA initiative to convert streetlights to LEDs by 2025 (1 TBtu)¹¹

In contrast, new or “accelerated” actions comprise a relatively modest 44 TBtu of efficiency savings, or 23% of the 2025 target. The most significant of these accelerated actions is an expected 31 TBtu in energy savings from increases in utility-leveraged efficiency investments, which comprise 70% of expected savings from all accelerated actions and 17% of the overall target.

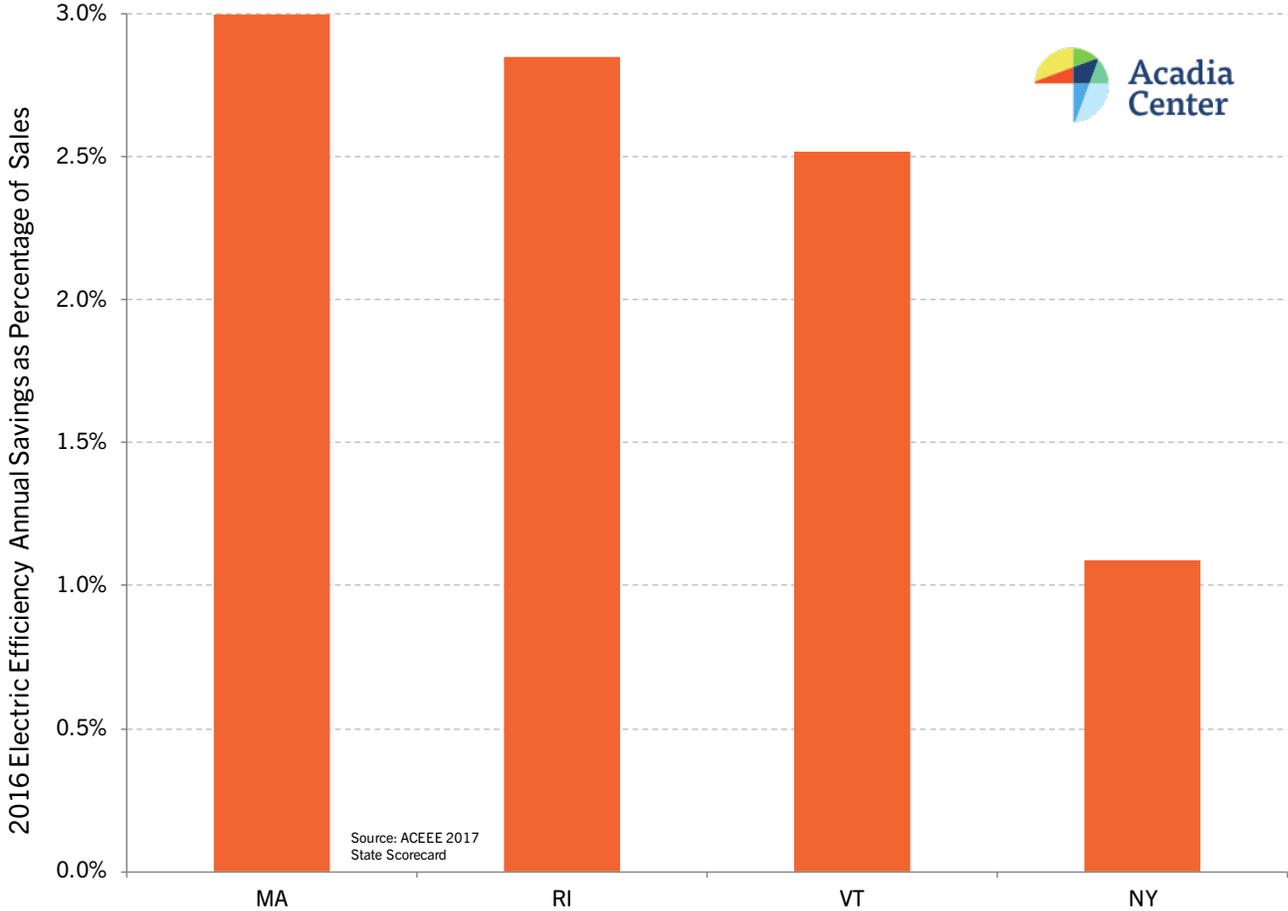
However, as Figure 1 demonstrates below, New York has achieved relatively low levels of efficiency savings compared to neighboring states. This means New York needs to take significant steps, as detailed in Acadia Center’s next three recommendations, to realize the total economic and environmental benefits that energy efficiency could produce for the state by 2025.

⁹ This includes a 50% discount factor to avoid overlap in these values, consistent with the NYSERDA CEF Budget and Benefits Chapter. *See id.* at 26.

¹⁰ This includes a 50% discount factor to account for overlap with utility and NYSERDA programs. *See id.* at 25.

¹¹ This includes a 75% discount factor to account for likely utility incentives. *See id.*

Figure 1: Comparison of 2016 Electric Efficiency Savings in NY, MA, RI and VT



In addition, the list of existing or “sustained” actions also includes 15 TBtu of electric savings from building codes and federal appliance standards. Federal appliance standards are set by the federal government, are not within the state’s control, and are unlikely to impact New York differently than other states.¹² Statewide building codes are regularly updated on a three-year cycle and include adoption of uniform energy codes.¹³ Current applicable statewide energy codes in New York are on par with other states in the region.¹⁴ Both of these items should be

¹² See <https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program>. As one of its “accelerated actions,” the white paper recommends adoption of state laws regarding efficiency standards for products and appliances not otherwise covered under federal appliance standards and estimates 3 TBtu of incremental savings if these state appliance standards are adopted. See *New Efficiency: New York*, at 27.

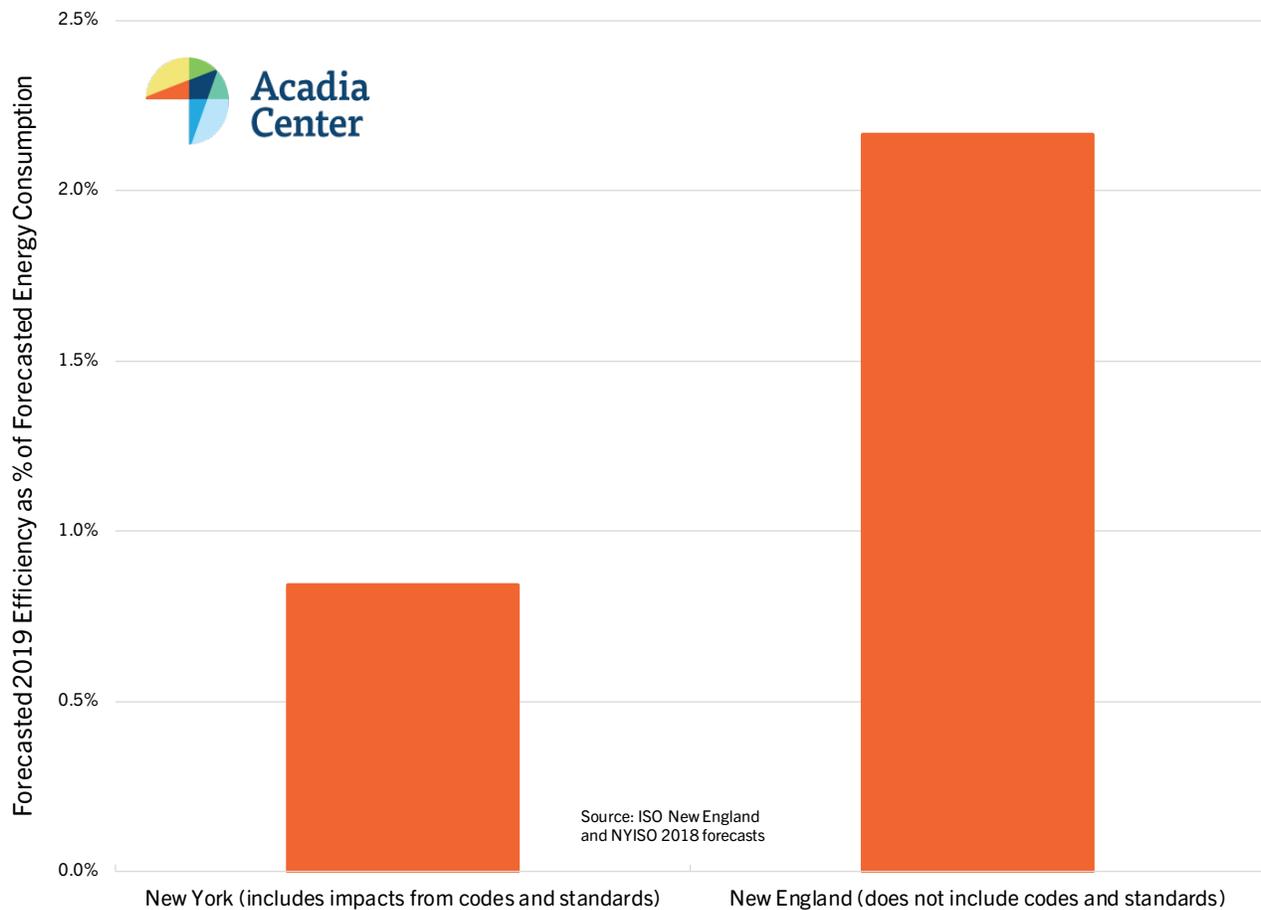
¹³ See <https://www.energycodes.gov/adoption/states/new-york>.

¹⁴ New York has adopted the 2015 International Energy Conservation Code (IECC) for residential and commercial buildings. Massachusetts has adopted the 2015 IECC and Vermont has adopted a building energy code that is functionally equivalent to the 2015 IECC. Connecticut and Rhode Island have adopted the 2012 version of the IECC and are currently reviewing the 2015 version for adoption. Efficiency programs in these states do not count the impact of these codes in their efficiency savings levels.

considered “business as usual” and not counted as incremental energy savings, although new stretch codes and other “beyond code” efforts, if implemented, should be included as incremental savings.¹⁵

As Figure 2 shows below, ISO New England does not include the impacts of code and standards in its efficiency forecasts (these are accounted for in its baseline forecast). Despite this, Independent System Operator (ISO) forecasted levels of efficiency savings in 2019 are much higher in New England than in New York.

Figure 2: New York ISO and ISO New England Forecasted 2019 Efficiency



Based on the above analysis, Acadia Center recommends that NYSERDA and DPS revise the proposed 2025 energy savings target to reflect only attributable savings, which should exclude both “business as usual” non-program energy efficiency savings, such as normal building code adoption, as well as those energy savings resulting from actions outside the state’s control, such as through federal appliance standards. This reshaping and tightening of the new 2025 target will ensure that it has meaningful impact by maximizing the procurement of new energy

¹⁵ For example, as one of its “accelerated actions,” the white paper recommends encouraging local jurisdictions to adopt a “stretch code” which, if adopted, would include projected savings that are incremental to a baseline that assumes a regular cycle of code updates. See *New Efficiency: New York* at 27. These savings, which the white paper projects to total 1 TBtu in savings, should be included as incremental savings, assuming estimates for compliance are accurate.

efficiency savings. An aggressive 2025 target composed primarily of savings above the “business as usual” baseline will, by definition, produce the most significant amount of economic and environmental benefits for New York.

2. Manage Underperformance Risk: Forecasted Savings Should be Aligned with the Latest Results Data to Lower the Risk of Underperforming the 2025 Target

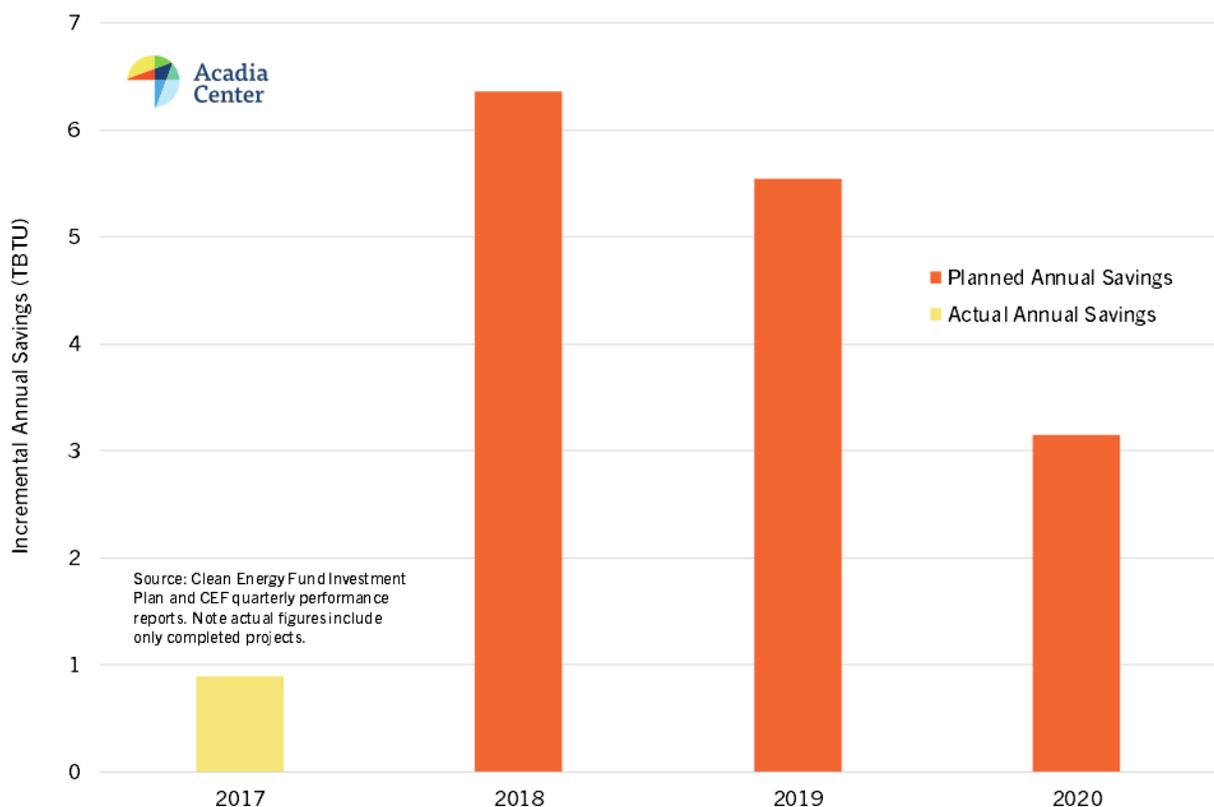
As explained above under Recommendation 1, the list of existing or “sustained” actions incorporated into the proposed 2025 energy savings target include two types of savings related to the Clean Energy Fund (CEF) – direct and indirect savings. The first, “direct savings,” are the projected savings from CEF efficiency projects that receive NYSERDA support or NY Green Bank financing (32 TBtu).¹⁶ The second, “indirect savings,” are projected savings from the expected market effects—in other words, “market transformation”—resulting from NYSERDA investment and market activity (21 TBtu).¹⁷ These direct and indirect savings account for 53 TBtu, or approximately one-third of the overall 185 TBtu goal.

However, it is not clear if the direct savings predicted for CEF efforts and activity are on track to materialize. Figure 3 below shows CEF quarterly direct efficiency savings for projects completed as of Dec 31, 2017. Cumulative savings from these completed projects total 1.1 TBtu. This leaves 31 additional TBtu of direct savings from these projects needed by 2025. This means that for each of the next eight years these CEF efforts will need to deliver, on average, roughly four times the amount delivered to date.

¹⁶ *New Efficiency: New York* at 26.

¹⁷ *Id.*

Figure 3: CEF Direct Efficiency Savings – Actual Performance and Target



In addition, the discount factors for CEF direct and indirect savings are uncertain at best. It is not clear that the amount of overlap (i.e., double counting) of CEF and other efficiency programs is adequately represented by the 20% and 30% discount factors for direct savings¹⁸ and the 50% discount factor for indirect savings.¹⁹ For example, in Connecticut, a state with both mature energy efficiency programs and a full offering of financing options, available data shows a nearly complete overlap between utility programs and at least one major non-utility financing product; 94% of the Connecticut Green Bank’s Commercial PACE financing efficiency projects were also participants in utility efficiency programs.²⁰ The 50% discounting of indirect benefits is repeatedly referred to as conservative in the CEF Annual Plan and Investment report, but no basis is given to support this assertion. A 50% discount factor could end up being substantially insufficient given the inherent uncertainty in such large

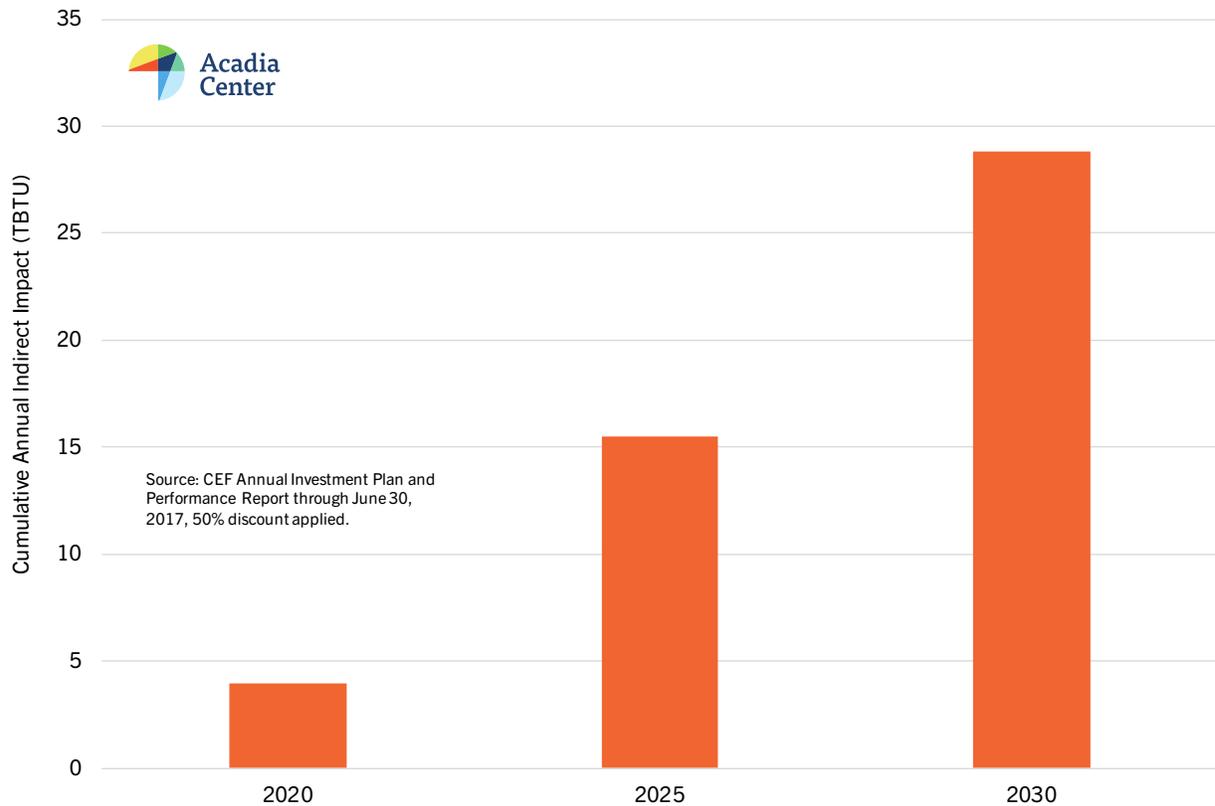
¹⁸ The white paper states that a 30% discount factor was applied to direct electric and gas savings and a 20% discount factor was applied to direct oil savings to account for overlap across complementary NYSERDA and utility activities, as well as savings that overlap with codes and standards. *See New Efficiency: New York* at 26.

¹⁹ The white paper states that a 50% discount factor was applied to total direct expected benefits from market transformation to avoid overlap and is consistent with CEF’s Budget and Benefits chapter. This chapter states that a 50% discount factor is applied to indirect benefits from CEF programs to arrive at a “conservative estimation at this time.” It does not appear that this percentage was based on any quantitative analysis of actual results.

²⁰ Energize CT financing presentation prepared for Connecticut Energy Efficiency Board, May 10, 2017, available online at <https://app.box.com/s/peoiroyz77ofsaoh7h1zf6rogan17iy/file/170651131840>.

quantities of savings predicted from relatively untested methods. Figure 4 below demonstrates just how rapidly CEF indirect savings are forecasted to grow.

Figure 4: CEF Projected Indirect Efficiency Savings



Given that direct and indirect savings from CEF efficiency projects undertaken by NYSERDA or the NY Green Bank account for 53 TBtu in expected savings, nearly one third of the overall 2025 savings goal of 185 TBtu, and because cumulative CEF direct savings through 2017 have totaled only slightly more than 1 TBtu of the 32 TBtu in expected savings, it is important that NYSERDA and the NY Green Bank adequately explain how CEF portfolios can be scaled up to achieve the remaining 52 TBtu in direct and indirect savings by 2025. More realistic savings estimates need to be considered for this CEF portion of the 2025 target to avoid major savings shortfalls in future years. In addition, any discount factors used for CEF direct and indirect savings should be developed with the best available empirical data to avoid any double counting, which would lead to actual savings that are lower than anticipated.

In the end, Acadia Center recommends that New York reassess its proposed heavy reliance on nascent CEF efforts in its design of the new 2025 energy savings target. Such reliance places New York at real risk of failing to procure necessary efficiency levels over the next seven years.

3. Provide Clear Guidance to Utilities: Establish an Implementation Plan for the 2025 Target that Identifies New Funding Sources and Interim Savings Targets

New Efficiency: New York includes as a sub-target electric site savings of 30,000 GWh from forecasted electricity sales in 2025.²¹ However, the proposal does not provide sufficient guidance regarding how utilities will fund enhanced utility efficiency programs necessary to reach this sub-target. Achieving annual electric efficiency savings of 3% of utility sales by 2025 is feasible and could be accomplished even sooner, but utilities will likely only scale up existing programs to necessary levels if regulators provide clarity on funding sources. Bonuses for hitting certain energy savings targets through enhanced earning adjustment mechanisms (EAMs), as discussed in the white paper,²² can provide improved incentives to reduce costs and increase value to the grid, but they should not be considered full substitutes for program funding, and they have not proven to be so to this point. Furthermore, while placing new value on efficiency is important for reducing costs, by itself it is not enough to invigorate the market at the scale needed. It is likely that utilities will only invest the necessary funding to reach new nation-leading energy savings levels if they know that their costs can be recovered.

In addition, while *New Efficiency: New York* asserts that existing and new efficiency actions will set the state on a path to achieve 3% annual electric efficiency savings of utility sales by 2025 and average annual savings that exceed 2% of utility sales from 2019-2025,²³ it does not lay out a concrete year-by-year plan for ramping up to the 3% savings target. The gap between this proposed target and current levels in New York is severe²⁴ and it will require immediate and sustained action over the next seven years to bridge it.

Without interim annual savings targets to define the ramp-up pathway to 3% electric savings, New York's utilities will not have the necessary regulatory guidance to begin enhancing their efficiency programs in 2019. This is especially problematic given that utilities such as Con Edison are expected to file new rate proceedings in early 2019 and may not propose sufficient funding for these programs to be on a path to achieve a new 2025 target.

Acadia Center accordingly recommends that New York's Public Service Commission (PSC) set interim annual utility electric efficiency savings targets that ramp up over time, starting in 2019. These year-over-year targets should be on par with what leading states have demonstrated as achievable (at least an additional .5% per year during the ramp up). Targets should be established before the next utility rate case in early 2019 so utilities have a clear expectation of what they must achieve. In addition, these targets should only include utility-procured efficiency and not estimated impacts from codes and standards or other measures outside of the utilities' control.

Acadia Center further recommends that the PSC provide clarity on how these enhanced utility programs will be funded. Energy efficiency resource acquisition is a tested, cost-effective model that has worked well in states that have implemented it. In contrast, attempted market transformation without a clear funding stream has not delivered high savings levels. The PSC should therefore make clear that these enhanced utility programs will be funded primarily through cost recovery.

²¹ See *New Efficiency: New York* at 23-24.

²² *Id.* at 34-35.

²³ *Id.* at 23-24.

²⁴ In 2018, New York's estimated target levels for annual utility electric efficiency savings are approximately 0.5%. See *An Energy Efficiency Proposal for New York: Investing in a Low-Cost Resource*, at 4-5 (available at <https://acadiacenter.org/document/an-energy-efficiency-proposal-for-new-york/>).

4. Accelerate and Backstop Savings: Require Faster Ramp-Up in Annual Utility Energy Savings and Automatic Backstop Measures for New and Untested Methods to Ensure Savings Achieve the 2025 Target

As mentioned, *New Efficiency: New York* includes an electric site savings goal of 30,000 GWh from forecasted electricity sales in 2025 and estimates that this sub-target will translate into annual reported electricity savings of 3% of utility sales in 2025 and above 2% of utility sales between 2019-2025 (while implicitly acknowledging that these savings will include more than just utility-led programs).²⁵ This means that the majority of these savings will almost certainly accrue in later years as utilities ramp up their efficiency programs to meet the 2025 target. Yet backloading these savings will cause unnecessary uncertainty by putting the burden of procuring them closer to the target year. It also deprives New York's consumers of energy savings, bill savings, and other major benefits in the near term.

New Efficiency: New York also does not include recommendations for additional actions if anticipated efficiency savings do not materialize. A large portion of the projected savings, particularly those related to the CEF, are coming from new or uncertain methods such that backstop plans using established methods need to be designed to fill any gaps created by non-performing programs. These actions need to be developed and activated well before 2025 to ensure that the overall savings target is met.

Based on these risks, Acadia Center recommends that the utilities should be incentivized or required to quickly ramp up to a 2% annual electric savings level in the early years of the 2019-2025 timeframe to avoid backloading these savings in later years. The utilities should also be incentivized or required to achieve a 3% annual savings target well before 2025 to provide a buffer if unanticipated complications in savings results arise.

Acadia Center also recommends that NYSERDA and the New York Green Bank should demonstrate that they will be able to achieve actual quarterly incremental implemented efficiency savings of 1 TBtu in their CEF portfolios going forward, excluding any savings that are counted in utility-run or other efficiency programs. A hard target should be set for automatic implementation of backstop measures if these anticipated savings do not materialize, and this target date or dates should be set several years before the 2025 deadline to ensure that the overall savings target is met.

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²⁵ See *New Efficiency: New York* at 23.