STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 18-M-0084 - In the Matter of a Comprehensive Energy Efficiency Initiative.

ORDER AUTHORIZING UTILITY ENERGY EFFICIENCY AND BUILDING ELECTRIFICATION PORTFOLIOS THROUGH 2025

Issued and Effective: January 16, 2020

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on January 16, 2020

COMMISSIONERS PRESENT:

John B. Rhodes, Chair
Diane X. Burman, dissenting
James S. Alesi
Tracey A. Edwards
John B. Howard

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BY THE COMMISSION:

INTRODUCTION

Energy efficiency and building electrification programs play a key role in the achievement of New York State's clean energy goals. The deployment of energy efficient resources reduces or eliminates electric and natural gas consumption, avoiding the harmful pollution associated with electric generation and natural gas usage. The emission of carbon dioxide and other pollutants can also be reduced through electrification, with efficient electric heat pumps replacing the use of delivered fuels like oil as well as natural gas, delivering even greater environmental benefits as the State's electric generation becomes cleaner. In many cases, these resources also benefit the utility system, including through reducing usage during periods of high demand and through

reducing or avoiding the need for additional infrastructure. Electrification of heating and other sectors can also provide system benefits. For example, by increasing electric sales during periods when average system utilization is low, electrification can reduce costs for other customers. Energy efficiency and electrification can also offer significant cost reductions to the customers that install them and, in particular, can improve affordability for low- and moderate-income (LMI) customers.

The Public Service Commission (Commission) has authorized and overseen customer-funded energy efficiency programs in order to achieve these benefits for a number of years. Most recently, in response to the New Efficiency: New York Whitepaper (NE:NY Whitepaper) released by Department of Public Service Staff (Staff) and the New York State Energy Research and Development Authority (NYSERDA), the Commission's Accelerated Efficiency Order directed the enhancement and acceleration of the energy efficiency programs run by the large investor-owned electric and gas utilities (the Utilities).[1] In the Accelerated Efficiency Order, the Commission directed the Utilities to work collaboratively with NYSERDA to file energy efficiency targets and budgets for 2021-2025 consistent with the

[1] Case 18-M-0084, Comprehensive Energy Efficiency Initiative, Order Adopting Accelerated Energy Efficiency Targets (issued December 13, 2018) (Accelerated Efficiency Order). The utilities are Central Hudson Gas & Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), KeySpan Gas East Corporation d/b/a National Grid (KEDLI), The Brooklyn Union Gas Company d/b/a National Grid NY (KEDNY), Niagara Mohawk Power Corporation d/b/a National Grid (Niagara Mohawk), National Fuel Gas Distribution Corporation (NFG), New York State Electric & Gas Corporation (NYSEG), Orange and Rockland utilities, Inc. (Orange & Rockland), and Rochester Gas and Electric Corporation (RG&E). The utilities with electric operations are refers to as the Electric Utilities.

goals stated in the Order. Those goals include 185 trillion British thermal units (TBtu) of customer-level energy reduction statewide by 2025, which includes an incremental target of 31 TBtu of reduction by the State's utilities toward the achievement of that goal. The Accelerated Efficiency Order further included subsidiary targets of an annual reduction of 3% in electricity sales by 2025, an aggregate reduction of 5 TBtu through heat pump deployment, and the continued provision and enhancement of programs for LMI customers.

On May 21, 2019, the Utilities filed the Updated Utilities Report Regarding Energy Efficiency Budgets and Targets, Collaboration, Heat Pump Technology and Low- and Moderate-Income Customers and Requests for Approval (Utility Proposal), in which they seek authorization to spend specified amounts on electric and gas energy efficiency programs between 2021 and 2025 and request that the Commission provide them the flexibility to periodically adjust their budgets as necessary. The Utilities further request authorization to spend approximately $350 million on an accelerated heat pump installation program and ask that the rate impact cap established in the Accelerated Efficiency Order be adjusted upwards to the extent that the total budget (net of unspent energy efficiency funds) is exceeded. Moreover, the Utilities propose certain changes to the Clean Energy Guidance Document CE-04 Layered Incentives Guidance and quarterly reporting due dates.[2]

This Order directs energy efficiency targets and budgets for the Utilities that generally reflect the December

[2] Cases 14-M-0004 et al., Clean Energy Fund, CEAC Implementation & Coordination Working Group Letter to Commission Secretary Burgess from Peggie Neville, DPS Staff, Regarding Layered Incentive Guidance (filed October 3, 2016).

2018 targets and budgets for electric efficiency and meaningfully increase the targets and budgets for gas efficiency and the budgets for heat pumps. These targets and budgets meet the intended principle of an "all cost-effective measures" policy, dramatically scaling energy efficiency, while retaining budget boundaries to ensure cost containment. With $1.99 billion of additional customer investment, these actions will achieve 35.8 TBtu of energy savings and deliver gross participant bill savings estimated at $13 billion, exclusive of participants' private investment in equipment and services. Gross lifetime utility system benefits associated with the targets are estimated to be nearly $6 billion, representing avoided energy, capacity, and distribution costs; these avoided costs are also reflected in the participant bill savings. They establish the State's commitment to advancing heat pump deployment and reaching nation-leading annual levels of efficiency savings by 2025 of 3% for electricity and 1.3% for gas.

This Order also initiates a long-term, far-reaching heat-pump strategy for New York, with an initial direction of $454 million in funding to achieve 3.6 TBtu, with a focus especially on heating applications and an agenda to expand rapidly beyond single-family building typologies. This strategy directs a common statewide framework across utilities and NYSERDA and looks to NYSERDA to complement utility programs with meaningful market-enabling development of workforce, supply chain, and consumer demand.

For LMI, this Order commits 20% of incremental energy efficiency funding to programs serving this sector and anticipates adjustments as the Climate Action Council called for in the Climate Leadership and Community Protection Act (CLCPA) establishes its policy instruments. This Order also directs a

common statewide framework across utilities and NYSERDA for LMI programs and takes meaningful steps to improve LMI access to these programs through a Customer Hub and through useful and necessary streamlining. This Order recognizes the need for further engagement with customers and stakeholders to develop and implement strategies that will succeed in better serving this sector.

This Order provides guidance on future utility initiatives on energy efficiency and heat pumps, specifically calling for an Interim Review commencing in 2022. This Interim Review will assess all meaningful aspects of New Efficiency: New York program design and administration, useful innovation, and governance oversight, as well as adjustment of targets and budgets as more becomes practicable. Critical inputs are expected to include guidance emerging from the CLCPA processes, potential studies and the like, in-field experience, and a new Performance Management and Improvement Process.

Finally, this Order directs a Performance Management and Improvement Process to ensure continuous and meaningful improvement in scale, costs, and outcomes, relying on transparency and accountability, and enlisting the knowledgeable advice and feedback of energy efficiency and heat pump program experts, as well as market practitioners, customers, and advocates from low-income, environmental justice, and affordable housing groups.

I. BACKGROUND

As part of the Reforming the Energy Vision (REV) initiative, the Commission directed the Utilities to file Energy Efficiency Budget and Metrics (BAM) Plans proposing annual budgets and targets on a three-year rolling cycle for Commission review and approval. The 2015 REV Framework Order also required

the Utilities to file Energy Efficiency Transition Implementation Plans (ETIPs) describing specific programs, measures, and approaches that would be used to achieve energy efficiency goals.[3]

Following the 2015 REV Framework Order, the Utilities filed their initial BAM Plans and ETIPs covering the three-year period from 2016-2018. On January 22, 2016, the Commission approved energy efficiency portfolio budgets and targets based on the BAM Plans for 2016-2018.[4] Subsequently, the Utilities filed updated BAM Plans and ETIPs that include proposed budgets and targets, as well as program details, for 2019 and 2020. In March 2018, the Commission approved the 2019 and 2020 budgets and targets for the Utilities in response to the BAM Plans filed on June 1, 2017.[5] The budgets and targets authorized in the March 2018 Order provided a base level of funding and minimum targets for 2019 and 2020, effectively maintaining the same annual levels previously authorized for 2016-2018.

In April 2018, Staff and NYSERDA issued the NE:NY Whitepaper. The Whitepaper established the context for a 2025 statewide energy efficiency target of 185 TBtu of energy usage reductions at the customer level, and articulated a portfolio of actions necessary to achieve it which, if sustained through 2030, would represent nearly one-third of the total overall state goal of 40% statewide reduction of greenhouse gas (GHG)

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[3] Case 14-M-0101, Reforming the Energy Vision, Order Adopting Regulatory Policy Framework and Implementation Plan (issued February 26, 2015).

[4] Case 15-M-0252, Utility Energy Efficiency Programs, Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets for 2016 – 2018 (issued January 22, 2016).

[5] Case 15-M-0252, supra, Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets for 2019 – 2020 (issued March 15, 2018) (March 2018 Order).

emissions from 1990 levels by 2030, as established in the 2015 State Energy Plan. The Whitepaper proposed an electricity specific sub-target of a 3% reduction of forecasted jurisdictional electric utility sales in 2025. It also anticipated that NYSERDA's Clean Energy Fund (CEF) activities would be aligned with the NE:NY goals and utility activities.

The Whitepaper also notes that increasing electrification in the building and transportation sectors is necessary to achieve the State's carbon reduction goals, and proposed that any increased electric usage from beneficial electrification should be netted against load in calculating achievement of the 3% electricity reduction sub-target. Of the 185 TBtu reduction needed by 2025, the Whitepaper identifies 144 TBtu as resulting from the continuation of actions already in progress and 41 TBtu coming from accelerated actions. Of the accelerated actions, the Whitepaper proposed that 31 TBtu should come from an increase in utility-leveraged energy efficiency investments.

On December 13, 2018, the Commission issued its Accelerated Efficiency Order, which adopted many of the proposals in the Whitepaper. The Utilities were directed in the Accelerated Efficiency Order to work cooperatively among themselves, in consultation with NYSERDA, toward a joint filing of specific utility program proposals, and to detail the coordinated roles with NYSERDA, by March 31, 2019. The Commission stated that an important objective of the cooperative arrangement will be to better connect the market development work in the CEF with utility strategies, which may include greater emphasis on resource acquisition efforts. The collaborative approach between the Utilities and NYSERDA was to clearly delineate roles, taking current operational functions into account, align mutual efforts with State goals, serve

markets with comprehensive offerings including outreach and marketing, and inform NYSERDA's CEF planning as well as individual utility targets.

The Accelerated Efficiency Order noted that the participation of NYSERDA in coordinating with the Utilities and consulting in best practices is important to the development of optimal utility targets and program strategies. The cooperative arrangement, as described in the Accelerated Efficiency Order, was to better connect the market development work in the CEF with utility strategies which may include greater emphasis on resource acquisition efforts. The collaboration was also expected to develop the market enhancing structures that support more effective roles for market actors in driving uptake, reducing costs, and developing innovative solutions.

On April 1, 2019, the Utilities filed the New York Utilities Report Regarding Energy Efficiency Budgets and Targets, Collaboration, Heat Pump Technology and Low- and Moderate-Income Customers and Requests for Approval that described their plans for achieving the goals in the Accelerated Efficiency Order. An errata version was filed on May 21, 2019, which is referred to herein as the Utility Proposal.

On July 18, 2019, Governor Andrew M. Cuomo signed the CLCPA, Chapter 106 of the Laws of 2019, which specifically references this proceeding's goal of achieving 185 TBtu in energy efficiency by 2025 in the context of broader economy-wide carbon reduction goals.

II. SUMMARY OF PROPOSAL

The Utilities seek authority to spend specified amounts between 2021 and 2025 on electric and gas energy efficiency programs, and request that the Commission provide the Utilities the flexibility to periodically adjust budgets as

necessary. To the extent that the total budget (net of unspent energy efficiency funds) established by the Commission exceeds the rate impact cap established in the Accelerated Efficiency Order, the Utilities request that the cap be adjusted upwards.

The electric utilities further request authority to spend $350 million on an accelerated heat pump installation program, and request that certain changes be made to the Clean Energy Guidance Document CE-04 Layered Incentives Guidance. Finally, the Utilities request that the Commission extend the quarterly scorecard report filings from the current 45-days post quarter-end to a 60-days post quarter-end in order to provide the Utilities sufficient time to compile the data and reformat it into the Clean Energy Dashboard Report format.

A. Energy Efficiency Targets and Budgets

The Commission presented presumptive targets and budgets in the Accelerated Efficiency Order that reflect incremental savings of 31 TBtu over the Utilities' existing energy efficiency efforts and that, along with the NYSERDA's contributions through the CEF, will result collectively in a reduction in adjusted annual jurisdictional utility electric sales of three percent by 2025. The Accelerated Efficiency Order gave the Utilities the opportunity to propose variations in the presumptive figures, to achieve the overall goals with greater cost-effectiveness. While the Utilities note that their proposed targets in the Utility Proposal are generally aligned with the data presented in the Accelerated Efficiency Order, they express concern about whether the energy savings targets are achievable at the initially identified funding levels, due to: (1) the anticipated need for the Utilities to pursue deeper energy efficiency savings; (2) changing budget estimates as baselines change and cheaper measures begin to saturate; and (3) the fact that the budgets and targets presented in the

Accelerated Efficiency Order are forecasts. They state that changes to some of the budget estimates may be needed as more experience is gained. The Utilities therefore request that the Commission provide the flexibility to periodically modify energy efficiency budgets proactively, as needed.

1. Base Annual Budgets and Savings Targets

The budget and targets proposed by the Utilities include a base level of funding and minimum targets for 2021 through 2025, effectively maintaining the same annual levels previously authorized for 2019-2020. These base levels of funding and targets are summarized in the tables below.[6]

Table 1: Base Electric Targets by IOU (Gross MWh)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	53,262	53,262	53,262	53,262	53,262	266,310
ConEd	199,008	199,008	199,008	199,008	199,008	995,040
NiMo	319,383	319,383	319,383	319,383	319,383	1,596,915
NYSEG	59,508	59,508	59,508	59,508	59,508	297,540
O&R	53,076	53,076	53,076	53,076	53,076	265,380
RGE	35,307	35,307	35,307	35,307	35,307	176,535
Total	719,544	719,544	719,544	719,544	719,544	3,597,720

Table 2: Base Electric Budgets by IOU (Millions)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	$ 9.77	$ 9.77	$ 9.77	$ 9.77	$ 9.77	$ 48.87
ConEd	$ 86.18	$ 86.18	$ 86.18	$ 86.18	$ 86.18	$ 430.89
NiMo	$ 63.90	$ 63.90	$ 63.90	$ 63.90	$ 63.90	$ 319.49
NYSEG	$ 17.04	$ 17.04	$ 17.04	$ 17.04	$ 17.04	$ 85.18
O&R	$ 9.90	$ 9.90	$ 9.90	$ 9.90	$ 9.90	$ 49.50
RGE	$ 10.48	$ 10.48	$ 10.48	$ 10.48	$ 10.48	$ 52.41
Total	$ 197.27	$ 197.27	$ 197.27	$ 197.27	$ 197.27	$ 986.33

[6] Figures in the tables may not sum due to rounding.

Table 3: Base Gas Targets by IOU (Gross MMBtu)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	58,016	58,016	58,016	58,016	58,016	290,080
ConEd	303,462	303,462	303,462	303,462	303,462	1,517,310
KEDLI	166,821	166,821	166,821	166,821	166,821	834,105
KEDNY	282,740	282,740	282,740	282,740	282,740	1,413,700
NFG	385,468	385,468	385,468	385,468	385,468	1,927,340
NiMo	870,798	870,798	870,798	870,798	870,798	4,353,990
NYSEG	94,486	94,486	94,486	94,486	94,486	472,430
O&R	22,853	22,853	22,853	22,853	22,853	114,265
RGE	141,246	141,246	141,246	141,246	141,246	706,230
Total	2,325,890	2,325,890	2,325,890	2,325,890	2,325,890	11,629,450

Table 4: Base Gas Budgets by IOU (Millions)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	$ 1.18	$ 1.18	$ 1.18	$ 1.18	$ 1.18	$ 5.91
ConEd	$14.53	$14.53	$14.53	$14.53	$14.53	$ 72.67
KEDLI	$ 7.16	$ 7.16	$ 7.16	$ 7.16	$ 7.16	$ 35.82
KEDNY	$12.77	$12.77	$12.77	$12.77	$12.77	$ 63.86
NFG	$10.04	$10.04	$10.04	$10.04	$10.04	$ 50.20
NiMo	$14.01	$14.01	$14.01	$14.01	$14.01	$ 70.07
NYSEG	$ 2.04	$ 2.04	$ 2.04	$ 2.04	$ 2.04	$ 10.19
O&R	$ 0.70	$ 0.70	$ 0.70	$ 0.70	$ 0.70	$ 3.52
RGE	$ 2.72	$ 2.72	$ 2.72	$ 2.72	$ 2.72	$ 13.60
Total	$65.17	$65.17	$65.17	$65.17	$65.17	$325.83

2. Incremental Annual Budgets and Savings Targets

In addition to the base level of funding and targets, the Utilities propose incremental energy efficiency targets and budgets for 2021 through 2025 over levels assumed under ETIP/SEEP, inclusive of the integration of the Non-Pipeline Solutions portfolio for Con Edison.[7] KEDLI, KEDNY, and Niagara

[7] Case 17-G-0606, Petition of Consolidated Edison Company of New York, Inc. for Approval of the Smart Solutions for Natural Gas Customers Program, Order Approving with Modification the Non-Pipeline Solutions Portfolio (issued February 7, 2019) (NPS Order). The NPS Order called for NPS to be integrated into the NE:NY framework, so savings associated with NPS were not considered part of the baseline.

Mohawk (collectively National Grid), as well as NFG, NYSEG, and RG&E, adopted the presumptive targets and budgets that were presented in Appendix A of the Accelerated Efficiency Order. Central Hudson, Con Edison, and Orange & Rockland performed company-specific analyses to develop budgets and targets.

Central Hudson proposes that it adopt the presumptive electric and natural gas energy efficiency targets in the Accelerated Efficiency Order and increase the respective budgets "to accommodate the higher cost necessary to achieve those energy savings." It notes that the presumptive budgets were derived from historical run rates and therefore heavily dependent on residential lighting and behavioral programs for electric savings and behavioral programs for natural gas savings, as these measures have been a significant focus of their historic portfolio. According to Central Hudson, its early adoption of these programs in comparison to other utilities limits the potential to utilize these same measures in the future, forcing the use of more comprehensive and more costly energy savings strategies. Moreover, according to the Utility Proposal, these programs have already been optimized to the appropriate scale in Central Hudson's service territory and therefore cannot be proportionately scaled up as targets increase.

Without the residential lighting and behavioral programs, according to Central Hudson, its historical cost for energy efficiency savings is approximately $0.24/kWh and $27/MMBtu, in contrast to the $0.16/kWh and $16/MMBtu presumptive figures used in the Accelerated Efficiency Order. Central Hudson proposes incremental budgets that match the statewide average run rate of approximately $0.26/kWh and $32/MMBtu. This equates to a total incremental budget for 2021-2025 of $18 million over their currently approved electric

energy efficiency funding levels, and $1.1 million over their currently approved gas energy efficiency funding levels.

Con Edison notes that its proposed budgets and targets comply with the Accelerated Efficiency Order's overall goals, although it proposes lower electric energy efficiency targets and higher gas energy efficiency, in accordance with the Commission's decisions in the NPS Order.[8] The NPS Order provides for increased gas energy efficiency, as well as the adoption of efficient technologies that allow switching to other energy sources in lieu of gas, and an additional focus on peak day gas demand reductions. Consequently, Con Edison explains that NPS integration results in a plan that shifts a portion of the budget that would be allocated to electric energy efficiency efforts to gas energy efficiency efforts.

Orange & Rockland concluded electric and gas rate proceedings in early 2019, within which the 2019 Rate Order adopting the Joint Proposal modified the company's presumptive targets and budgets included in the Accelerated Efficiency Order.[9] The incremental electric budgets and targets for 2019-2021 contained in the 2019 Rate Order are higher than those found in the Accelerated Efficiency Order; the incremental gas

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[8] Case 17-G-0606, supra. Since the company's electric and gas rate filings address energy efficiency plans for a three-year period (2020-2022) overlapping with the five-year period (2021-2025) that is the subject of the Accelerated Efficiency Order, Con Edison provided additional information in the Updated Filing and as a proposal in the company's rate cases.

[9] Case 18-E-0067, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Electric Service, and Case 18-G-0068, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Gas Service, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plans (issued March 14, 2019).

budgets and targets contained in the 2019 Rate Order for the same period are lower than those found in the Accelerated Efficiency Order. Additionally, the 2019 Rate Order did not require a minimum percentage of incremental energy efficiency funding to be allocated to LMI programs or anticipate that NYSERDA would terminate its electric heat pump rebate program as of December 31, 2019. The company proposes to develop additional LMI and heat pump programs and fund both efforts with unspent electric and gas ETIP funds collected from 2016-2018. According to the company, the estimated unspent electric and gas ETIP collections as of February 2019 are $6.9 million and $0.5 million, respectively.

Orange & Rockland states it will propose, within its next rate filings, electric targets and budgets for 2022 through 2025 consistent with those contained in the 2019 Rate Order, requiring a corresponding increase in budgets for 2022 through 2025 from what was presented in the Accelerated Efficiency Order's presumptive targets. For gas, while the 2021 budget and targets will remain at the levels established in the 2019 Rate Order, the company currently plans and proposes to adopt the budgets and targets for 2022-2025 set forth in the Accelerated Efficiency Order.

The tables below show the proposed incremental budgets and targets for electric and gas efficiency; they do not reflect the budget for electric utility heat pump programs, which is discussed separately.[10] [11]

[10] O&R's incremental increases reflected in the Tables 5 - 8 have been adjusted to calculate from the annual minimum-EAM levels authorized in its rate plan for consistency with all other utilities, as opposed to being calculated from the max-EAM levels as contained in the Utility Proposal.

[11] Figures in the tables may not sum due to rounding.

Table 5: Proposed Incremental Electric Targets by IOU (Gross MWh)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	6,000	10,000	14,000	17,000	21,700	68,700
ConEd	267,254	338,747	432,219	526,331	599,693	2,164,244
NiMo	41,000	75,000	130,000	182,000	228,200	656,200
NYSEG	39,000	64,000	106,000	154,000	200,540	563,540
O&R	18,533	18,901	19,491	20,302	21,073	98,300
RGE	22,000	32,000	48,000	68,000	90,000	260,000
Total	393,787	538,648	749,710	967,633	1,161,206	3,810,984

Table 6: Proposed Incremental Electric Budgets by IOU (Millions)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	$ 1.65	$ 2.69	$ 3.69	$ 4.41	$ 5.56	$ 18.00
ConEd	$ 79.38	$ 101.05	$ 129.73	$ 158.52	$ 180.85	$ 649.52
NiMo	$ 8.29	$ 15.16	$ 26.27	$ 36.78	$ 46.11	$ 132.60
NYSEG	$ 8.43	$ 13.83	$ 22.91	$ 33.28	$ 43.34	$ 121.79
O&R	$ 0.64	$ 3.89	$ 4.23	$ 4.70	$ 5.14	$ 18.60
RGE	$ 4.56	$ 6.63	$ 9.94	$ 14.08	$ 18.64	$ 53.84
Total	$ 102.93	$ 143.25	$ 196.76	$ 251.76	$ 299.64	$ 994.34

Table 7: Proposed Incremental Gas Targets by IOU (Gross MMBtu)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	1,000	3,000	6,000	10,000	15,040	35,040
ConEd	492,000	556,000	556,000	556,000	613,336	2,773,336
KEDLI	102,000	135,000	177,000	240,000	322,200	976,200
KEDNY	228,000	292,000	422,000	584,000	729,688	2,255,688
NFG	2,000	5,000	8,000	14,000	20,950	49,950
NiMo	0	0	0	0	0	0
NYSEG	47,000	60,000	82,000	113,000	147,560	449,560
O&R	10,963	37,470	54,470	72,470	89,340	264,713
RGE	17,000	28,000	43,000	61,000	80,399	229,399
Total	899,963	1,116,470	1,348,470	1,650,470	2,018,513	7,033,886

Table 8: Proposed Incremental Gas Budgets by IOU (Millions)

IOU	2021	2022	2023	2024	2025	2021-2025
CenHud	$ 0.03	$ 0.10	$ 0.20	$ 0.32	$ 0.48	$ 1.13
ConEd	$22.25	$25.68	$25.66	$25.96	$28.50	$128.05
KEDLI	$ 2.87	$ 3.80	$ 4.98	$ 6.76	$ 9.07	$ 27.49
KEDNY	$ 7.47	$ 9.56	$13.82	$19.12	$23.89	$ 73.86
NFG	$ 0.10	$ 0.26	$ 0.42	$ 0.73	$ 1.09	$ 2.60
NiMo	$ -	$ -	$ -	$ -	$ -	$ -
NYSEG	$ 1.07	$ 1.37	$ 1.87	$ 2.58	$ 3.37	$ 10.26
O&R	$ 0.22	$ 1.52	$ 2.16	$ 2.85	$ 3.50	$ 10.25
RGE	$ 0.35	$ 0.57	$ 0.88	$ 1.25	$ 1.64	$ 4.69
Total	$34.37	$42.85	$49.99	$59.57	$71.54	$258.33

B. Collaboration

The Utilities explain in the Utility Proposal that they and NYSERDA have collaborated extensively, are committed to working together collaboratively in the future, and are in the process of determining how best to work together in a manner that leverages their respective capabilities. The collaboration principles developed as part of the Clean Energy Advisory Council (CEAC)[12] form a foundation for future work with NYSERDA, according to the Utilities. The collaboration structure is intended to support the Utilities' and NYSERDA's planning to address identified market needs. To accomplish this, the Utilities and NYSERDA will share with each other current and prospective energy efficiency strategies by sector and will engage regularly to scout strategic opportunities for potential collaboration.

One example of collaboration noted in the Utility Proposal has been the joint efforts of the Utilities and NYSERDA

[12] Matter 16-01005, In the Matter of the CEAC's Clean Energy Implementation & Coordination Working Group, New York Program Administrator Coordination Report (filed January 31, 2017) (CEAC I&C Working Group) and Multiple Incentives Recommendation Report (filed September 13, 2016).

to develop the accelerated heat pump and LMI proposals. NYSERDA helped identify key issues, developed the overall approach to address such issues, helped develop supporting figures, and in some cases, provided drafts of segments of the proposals. Another example is the online Clean Energy Dashboard. The Clean Energy Dashboard tracks results from all customer-funded clean energy activities. The Utilities and NYSERDA will consider opportunities to augment the program inventory information made available on the Clean Energy Dashboard, such as providing greater insight into collaborative activities and complementary incentives. Consequently, the Utilities propose that Staff revise the Clean Energy Guidance Document CE-04: Layered Incentives Guidance to reflect that a regularly updated inventory of energy efficiency programs will be maintained on the Clean Energy Dashboard and to remove references to CEAC Working Groups, as they no longer exist.

The Utilities note that they will continue to explore potential areas of future collaboration with NYSERDA. As part of this effort, the Utilities will provide NYSERDA access to certain data based on currently effective Commission orders and policy. It is expected that there will continue to be multiple meaningful collaborations between specific utilities and NYSERDA to address targeted market opportunities and advance potential programmatic enhancements. Examples include determining contractor eligibility requirements, addressing sector-specific or solution-specific barriers and/or market gaps, and leveraging NYSERDA's statewide awareness and outreach capabilities, while the Utilities continue to offer more focused, targeted marketing to their customers.

Furthermore, the Utilities and NYSERDA will strive to make it easier for customers and market partners to learn about available energy efficiency incentives, whether those incentives

are offers by the Utilities or by NYSERDA. Implementation steps to advance this objective may vary across utility territories, and will include the development, publication, and maintenance of public-facing resources with program information.

Utilities propose that where a defined collaborative effort is developed between a specific utility and NYSERDA, both the utility and NYSERDA will describe the initiative in their ETIP/SEEP updates and relevant CEF Investment Plan chapters, respectively. Further it is proposed that any such collaborative efforts not be subject to a predetermined cap on the energy savings that may be counted toward utility achievements, provided that the ETIP/SEEP and CEF Investment Plan clearly describe the objective and scope of the effort, implementation period, rationale for how joint investments will increase impact, and how the resulting energy savings will be quantified and reported.

C. Accelerated Heat Pump Deployment

The Utility Proposal states that, during the collaborative process, NYSERDA presented updates to the NE:NY Analysis of Residential Heat Pump Potential and Economics (January Heat Pump Report) that resulted in significant reductions in the per unit savings that were used in the initial analysis. NYSERDA documented the updates to its methodology in its New Efficiency: New York Analysis of Residential Heat Pump Potential and Economics Update May 2019 (May Technical Update).[13] According to the Utilities, the updated methodology in the Heat Pump Potential Study results in a 34% increase in NYSERDA's projected costs of acquiring 5 TBtu of net site energy savings

[13] Case 18-M-0084, supra, Analysis of Residential Heat Pump Potential and Economics Update (filed May 23, 2019).

from heat pumps and relies upon a meaningful portion of the TBtu resulting from installations in the non-residential market.

The Electric Utilities do not agree with the targets and budgets put forth by NYSERDA, and instead request Commission authorization of the Utility Proposed targets and budgets reflected in the table below.[14] [15]

Table 9: 2020-2025 Heat Pump Targets & Budgets by IOU

	GBtu Target		Budget(Millions)	
IOU	Potential Study	Utility Proposed	Potential Study	Utility Proposed
CenHud	416	253	$ 30.2	$ 30.2
ConEd	804	804	$ 83.2	$ 204.9
NiMo	1,559	1,010	$ 90.3	$ 57.6
NYSEG	1,907	427	$ 110.1	$ 40.0
O&R	160	160	$ 11.6	$ 11.6
RGE	153	56	$ 9.2	$ 5.5
Total	5,000	2,710	$ 334.6	$ 349.8

The electric utilities note that the proposed 2.71 TBtu goal represents a significant increase in State support for heat pump investments, although it will require a significant increase in market adoption rates from current levels that may not come to fruition. The electric utilities further note that the target is primarily based on potential estimates for residential customers and further work with NYSERDA is needed to determine the extent to which heat pump applications for commercial customers can enhance the current proposal.

The Utility Proposal states that while the Electric Utilities believe the proposed budget will encourage higher levels of adoption across the State, the heat pump TBtu target and budget estimates are premised on uncertain assumptions

[14] Con Edison's budget reflects an increase from $189.6 million to $204.9 million as detailed in their July 1, 2019 filed comments.

[15] Figures in the table may not sum due to rounding.

related to regional variations of market growth, required level of financial support, and general customer receptivity and adoption rates over the next six years. Because of the inherent uncertainty of forecasts, the Electric Utilities believe that program budget flexibility is critical to achieving significant TBtu savings through heat pumps.

Central Hudson proposes to adopt the cumulative heat pump budget of $30.2 million from NYSERDA's May Technical Update. However, the company claims that the presumptive program target is unachievable. Central Hudson would require a budget of $68.9M to achieve NYSERDA's revised presumptive target of 416 GBtu, according to the Utility Proposal. Central Hudson instead proposes to adopt a cumulative heat pump program target of 253 GBtu.

National Grid generally supports the aggregate heat pump budgets and targets in the Utility Proposal but stresses the challenges of meeting the heat pump targets for all of its affiliates. The additional savings necessary to meet the statewide goal could possibly be met within the Niagara Mohawk service territory through NYSERDA's LMI heat pump pilots, potential non-wires alternatives (NWA)/non-pipeline solutions (NPS) initiatives, large commercial applications, or geothermal offerings in the KEDNY/KEDLI service territories. National Grid is hesitant to include the potential savings from these possible initiatives in presumptive targets without an understanding of savings potential, adoption rates, or budgetary needs. National Grid requests that the Commission address possible savings targets and budgets associated with these activities in future orders.

In addition to the feasibility of Niagara Mohawk's allocation of the statewide heat pump target, National Grid is also cognizant of the pressures this program will have on

customers. The proposed budgets include a reduction in incentives in the out years based on NYSERDA's forecasted market transformation and cost reductions. The Company states the proposed budgets are the minimum budget necessary to meet the corresponding GBtu targets and may require an increase if actual market transformation and cost reductions are not at pace with the assumptions used in modeling. The Niagara Mohawk proposed budget also does not reflect additional funding that may be needed to advance heat pump adoption in the large commercial (greater than 10 tons) market segments.

The NYSEG and RG&E proposed targets and budgets are informed from heat pump programs in Maine, which has similar demographic and climate characteristics to the NYSEG and RG&E service territories. Based on the performance of the Maine programs, they state the required funding levels to support the heat pump targets included in NYSERDA's January report will have potentially significant bill impacts, especially for NYSEG residential customers. This potential impact to customers makes it increasingly important to continually reassess whether approved budgets are reasonable and appropriate, according to NYSEG and RG&E.

Orange & Rockland will strive to achieve the Commission's 160 GBtu heat pump goal for its service territory. The company notes, however, that the potential savings identified in NYSERDA's May Technical Update need further analysis and verification, including the potential for regional market growth, the incentive levels necessary to drive heat pump adoption, and aligning savings estimates with the Technical Resource Manual (TRM) to meet the statewide 5.0 TBtu goal. In the short term, the company has adopted the NYSERDA analysis to determine the incentive budgets without verifying the underlying methodology. However, the company states adjustments may be

needed as more details and assumptions are verified in the current market, and that historic adoption levels for heat pumps has been low.

The Electric Utilities request that authorized targets be applied as cumulative targets to be met by 2025 for all electric utilities. Annual deployment projections, however, can be developed by each utility to assess progress against the target on an ongoing basis and identify the need for program changes. The Electric Utilities propose to use the appropriate level of flexibility to achieve program targets within the constraint of their individual funding levels. Consideration should also be given, during the program review process, to the development of a mechanism that allows the Electric Utilities to shift savings targets among their respective service territories, according to the Utility Proposal.

Incentive levels are proposed to be provided in most cases as one-time rebate payments per thermal capacity installed. The incentive would be available across the range of heat pump types, including space conditioning with heating and cooling modes, domestic water heating, and process heating and cooling technologies. In lieu of a dedicated heat pump budget for LMI customers in the Order, NYSERDA will develop and file an investment plan within the CEF to fund LMI heat pump initiatives.

The Electric Utilities propose a governance approach to support the development of a new statewide collaborative model of a Joint Management Committee, comprised of members of each electric utility, who will coordinate efforts with NYSERDA to develop technical training for workforce development and leverage NYSERDA's contractor qualification and approval processes and market enabling efforts. The Electric Utilities propose requesting feedback from NYSERDA and Staff on planned

program changes periodically during the six-year term, with the first planned program review to occur in 2021.

The Electric Utilities support the objective to have all utilities' heat pump offerings launched by January 1, 2020 but note in some instances this may not occur. To ensure a seamless transition, it is proposed that those electric utilities not ready to commence a program explore with NYSERDA the viability of NYSERDA continuing its program with updated incentives in that utility's service territory.

The Electric Utilities propose that specific program delivery rules (including incentive levels) be provided in heat pump implementation plan submissions later in 2019.

Lastly, the Utility Proposal states that a mechanism that tracks incremental revenues from specific customers adopting heat pumps, as a source of funds to help offset the cost of a heat pump program, can, at best, work in limited circumstances and generally over the short term. Rather, the Electric Utilities propose to allow heat pump program expenditures as a regulatory asset that is included in base delivery rates and collected over the life of the heat pump. The Electric Utilities state that this approach will moderate rate impacts and better align the useful life of the heat pumps with the timing of the benefits. Such collections overtime may be offset by the inverse revenue impact from heat pumps flowing to customers over that same period, although according to the Electric Utilities, it would be challenging to specifically track these collections. A second approach described in the Utility Proposal is to treat the incentive as an expense in the revenue requirement for the year it will be incurred, with revenue impact from heat pumps flowing to customers in subsequent years. The Electric Utilities note that these matters, as well as any related regulatory accounting

treatments, are best addressed in future electric utility rate proceedings.

D. Statewide Low-to Moderate-Income Portfolio

The Utilities note in the Utility Proposal they have collaborated with NYSERDA and will continue to do so to refine the Statewide LMI Portfolio. They envision the portfolio design to consider programs that provide incentives targeted at the residential, multifamily, and new construction sub-segments. These would include: (1) bill payment assistance for low-income customers through the Low-Income Affordability Program's statewide utility bill discount program;[16] (2) outreach, education, and awareness campaigns to increase energy literacy and access to programs; (3) market development initiatives that develop and test new solutions for enhanced access to improvements across the LMI market segment, with opportunities for integrating energy efficiency, heat pumps, and renewable energy; (4) coordination and alignment across the customer-funded LMI Portfolio and with programs and resources administered by other State agencies and local administrators; and (5) continuous optimization of the LMI Portfolio by tracking results such as units served, implementation costs, and energy savings.

In collaboration with NYSERDA, the Utilities have identified two primary elements of an LMI platform as recommended in the Accelerated Efficiency Order: a customer-facing hub and an administrative component. The LMI platform

[16] The Commission adopted a household energy burden standard in 2016, providing nearly two million low-income New Yorkers with approximately $250 million in direct cost relief each year. Case 14-M-0565, Proceeding on Motion of the Commission to Examine Programs to Address Energy Affordability for Low Income Utility Customers, Order Adopting Low Income Program Modifications and Directing Utility Filings (issued May 20, 2016).

may potentially be modeled on the current NYSERDA referral system being used by local approved contractors. These components are intended to improve customer experience, potentially reduce administrative costs, and potentially offer increased operational efficiencies, while simultaneously offering an appropriate level of commonality across the LMI portfolio.

As currently envisioned, the customer-facing hub will be jointly developed by the Utilities and NYSERDA and will serve as the primary information source and entry point to programs, services, and energy education. The customer-facing hub could potentially feature a statewide branding approach in conjunction with localized marketing implemented by the Utilities in their respective service territories. For customers, the hub will provide consistent information on all relevant LMI programs and services, including energy efficiency, renewable energy, bill payment assistance, and energy education materials. In addition, the customer-facing hub will also reflect a coordinated outreach and education strategy between NYSERDA and the Utilities.

The Utilities note that they will work collaboratively with NYSERDA to harmonize administration of the expanded LMI programs with CEF-related investments, including: (1) establishing complementary program design and implementation; (2) developing and using supporting initiatives such as workforce development or financing solutions; (3) funding statewide programming that is not currently offered by the Utilities; and (4) leveraging the CEF to test novel solutions and alternative approaches to program deployment broad-scale roll out. In addition, the Utility Proposal explains, NYSERDA funds market development initiatives intended to test innovative

solutions and develop models for reducing soft costs and scaling access to energy efficiency.

The Utilities propose to focus on energy efficiency in 1-4 family homes and affordable multifamily buildings, and on increasing customer adoption through community-based demonstration approaches. Central Hudson requests that no specific LMI uptake requirements be imposed with respect to multifamily dwellings. It explains that the housing stock within its service territory is predominantly single-family units, including the homes of low- and moderate-income customers. Any LMI strategy which places prescriptive requirements with respect to multifamily uptake rates would significantly disadvantage Central Hudson because there is very limited potential for this segment. The Utilities propose to work closely with NYSERDA to pilot new initiatives and approaches for implementing LMI programs which may result in reduced administrative complexity or cost, and lead to improved outcomes for LMI customers.

The Utilities also note that they will strive for consistency in program design across the state. Such consistency should serve to reduce customer confusion and limit complications for existing and new market actors (i.e., contractors and social service providers). However, the programs will consider the regional differences in demographics, housing characteristics, and community needs by utility territory in order to enhance program effectiveness. As such, the Utilities anticipate that designs of individual programs may vary to a certain degree, according to the Utility Proposal.

The Utilities propose the establishment of an LMI Program Council, composed of representatives from the Utilities and NYSERDA, that will consider the planning and calibration of the portfolio over time. The Utilities envision that the LMI

Program Council will meet at regular intervals to review progress, modify programming where necessary, plan for future years, and work with NYSERDA on an approach for stakeholder engagement to obtain input and to identify new opportunities. It is expected that regular stakeholder engagement and NYSERDA coordination will continue through venues such as the Low-Income Forum on Energy.

The Utilities request no annual budget levels due to the expectation that programs will take time to ramp up (i.e., the number of contractors and their associated staffing levels may need to increase) and funding needs may vary by utility. The Utilities also expect the need for flexibility with respect to the proportional distribution of budgets and targets by fuel type. The Utilities will allocate budgets to programs and necessary administrative, marketing, and other implementation costs. Additional details on budgets will be included in future implementation plans.

Under the Utilities' proposal, there will be LMI programming available on January 1, 2020, as existing LMI programs administered by the Utilities and NYSERDA will continue. The Utilities expect that the new LMI Portfolio will be implemented in a phased manner during 2020.

E. Earnings Adjustment Mechanisms

The Accelerated Efficiency Order states that the Commission may address earnings adjustment mechanism (EAM)-related matters in a 2019 order. The Utilities suggest that, because all utilities are on different rate case cycles, the Commission's most efficient course of action would be to provide each utility flexibility to propose EAMs in individual rate proceedings, consistent with the principles already established in the Accelerated Efficiency Order. This is also consistent

with previous Commission determinations in Case 15-M-0252, according to the Utilities.

F. Company-Specific Requests

1. Central Hudson

Central Hudson proposes to utilize regulatory liabilities to fund the incremental energy efficiency and heat pump program budgets before creating a regulatory asset. For the period of January 1, 2016 through June 30, 2018, Central Hudson states it had a cumulative underspend of approximately $5.1 million and $0.3 million within its electric and natural gas portfolios respectively. The company proposes that any incremental staffing associated with increases to the heat pump or energy efficiency programs should be funded through this cost recovery mechanism and would be fully addressed within a future rate proceeding.

The company, however, is concerned about the long-term sustainability of funding this and other beneficial electrification initiatives primarily through electric bills. According to the company, there are over 175,000 electric customers within the Central Hudson service territory which utilize fuel oil or propane as their primary heating fuel. If the statewide heat pump framework were scaled to bring efficient heat pump systems to this number of customers at current funding levels, the company estimates costs to Central Hudson's customers would be approximately $557 million, which equates to 52 percent of the average electric rate base within Central Hudson's most recent rate plan. The company requests that alternative funding sources be explored and considered.

2. Con Edison

Con Edison proposes to fund the electric (including heat pump programs and a kicker incentive[17]) and gas energy efficiency portfolios, including efforts targeted to LMI customers, through a combination of: (1) cost recovery mechanisms established in the company's rate proceeding for 2020 through 2022 (and in this proceeding for the remaining years); and (2) the use of existing unspent funds, including $59.6 million of unspent electric Energy Efficiency Portfolio Standard (EEPS) funds to be used towards the 2020 electric expenditures, $115 million of unspent electric EEPS funds and unspent electric ETIP funds towards heat pumps in the 2020-2025 period, up to $48 million during 2020-2022, of unspent and uncommitted Demand Management Program (DMP) funds towards the kicker incentive, and $5.7 million of unspent gas EEPS/ETIP to be used towards the 2020 gas expenditures.

With regard to the proposed three-year spending of up to $48 million over 2020-2022 for the kicker incentive, given the structure of the incentive has not been fully developed from both a design and an operational implementation perspective, the company emphasizes the importance of flexibility so the kicker incentive can serve as a test for such an approach.

3. NFG

NFG requests Commission approval of the following cost recovery proposal: 1) continue funding the unchanged "base" component via the Energy Efficiency Tracker Surcharge Rate, for the 2021 – 2025 period; 2) apply all remaining unspent funding from the 2012 – 2015 program years; (3) to the extent there are

[17] Kicker in this context is used to describe an additional customer incentive based on the value the energy efficiency measure provides to the utility system, primarily in the form of peak reduction.

any shortfalls, collect the remaining balance via an adjusted Energy Efficiency Tracker Surcharge Rate for the 2021 – 2025 period; (4) continue to calculate and apply interest to 2021 – 2025 program year principal balances at the Other Customer Provided Capital Interest Rate (i.e., the rate currently being applied to NFG energy efficiency principal balances); and (5) update and re-file tariff amendments for the Energy Efficiency Tracker Surcharge Rate and the Clean Energy Fund Surcharge Rate, prior to January 1, 2021, to reflect a future Commission determination in this proceeding.

NFG also proposes increased funding for its Low-Income Usage Reduction Program (LIURP). On April 24, 2019, the Commission issued an Order Addressing Use of Funds in Cases 18-G-0553, 16-G-0257 and 13-G-0136, specific to the company, which addressed NFG's proposal to repurpose $1.95 million as a one-time funding infusion for LIURP, for both the weatherization and furnace replacement elements in 2020. In that Order, the Commission stated the disposition of the unspent EEPS funds, the $1.95 million, would be determined in this current proceeding. NFG proposes this same level of increased funding during the 2021-2025 time period, and increasing this one-time funding infusion further than $1.95 million, to the extent practicable with flexibility to utilize funding over multiple years. The company believes that while its current LIURP is very helpful in assisting its low-income customers in reducing their natural gas consumption, further expansion of LIURP would be desirable and in customer and public interest.

4. National Grid

National Grid proposes that any additional funding allotted to Niagara Mohawk for the statewide heat pump program in 2020 be used to close the gap between its existing Electric

Heat Initiative (EHI) incentive levels and inventive levels identified for the statewide heat pump program. Niagara Mohawk's EHI began in 2018 as part of Niagara Mohawk's Environmentally Beneficial Electrification EAM metric, which consists of both Electric Heat and Electric Vehicle Initiatives. These initiatives run through December 31, 2020 under the current Niagara Mohawk rate plan.[18] National Grid proposes that the EHI adopt the statewide heat pump program framework, where possible, to smooth the transition to the statewide heat pump program envisioned in the Accelerated Efficiency Order. National Grid states that potential funding sources are under review and anticipated to be identified in the implementation plan to be developed later this year. The company proposes that despite two programs being offered during the transition year of 2020, from a customer and provider standpoint, a shared application and implementation vendor will provide a uniform experience. If the statewide Heat Pump Implementation Plan and subsequent Program Manual conflict with the EHI, funding will be allocated from the statewide heat pump program. Under Niagara Mohawk's proposal, both carbon and Btu savings would be shared where funding is provided by both programs and if an installation is not eligible for the EHI, but meets eligibility requirements for the statewide heat pump program, the savings will be tied to the funding source. Logistically, managing two programs during the transition is likely to create an increased administrative burden, however, the company asserts maintaining the Beneficial Electrification EAM metric leads to stability for

[18] Case 17-E-0238 et al., Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plans (issued March 15, 2018).

the Electric Vehicle Initiative, maintains the Company's earnings potential, and provides a clear and stable market signal consistent with the efforts of the other utilities as of January 1, 2020.

5. NYSEG and RG&E

NYSEG and RG&E anticipate using remaining unspent ETIP funds starting in 2021 until such funds are depleted, which according to the companies is expected to occur within the first year. Additionally, the Utility Proposal states the companies plan to file new rate cases for all businesses in 2019 and will be proposing to transition the current surcharge cost recovery mechanism for energy efficiency costs to recovery in base rates starting in 2020, consistent with guidance received from the Commission. On May 20, 2019, NYSEG and RG&E filed electric and gas rates cases that are currently ongoing.[19]

6. Orange & Rockland

Orange & Rockland indicates the funding levels for heat pumps contained in its 2019 Rate Order[20] did not anticipate NYSERDA's termination of its heat pump rebate program effective December 31, 2019. Accordingly, to make up this shortfall and meet the targets set forth in the 2019 Rate Order, Orange & Rockland projects that it will use unspent ETIP funds in the amount of $1.3 million in 2020 and $1.8 million in 2021. Orange & Rockland states it may address any changes to its heat pump budgets and targets for periods beyond 2021 in its next electric rate filing.

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[19] Cases 19-E-0378 et al., Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation for Electric Service.

[20] Cases 18-E-0067 et al., supra, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plans (issued March 14, 2019).

While the 2019 Rate Order provides for recovery of energy efficiency costs through base rates as expenses, the company expects that it will request to recover costs under the regulatory asset framework in its next rate case. By providing for the recovery of energy efficiency costs over a ten-year period, customer bill impacts are moderated, customers who take service over the ten-year period contribute fairly in recognition that customers do change over that time horizon, and importantly, costs are aligned with the realized lifetime benefits of the electric and gas portfolios.

III. NOTICE OF PROPOSED RULE MAKING

Pursuant to the State Administrative Procedure Act (SAPA) §202(1), Notices of Proposed Rulemaking were published in the State Register on May 1, 2019 [SAPA Nos. 18-M-0084SP2, 18-M-0084SP3, and 18-M-0084SP4]. The time for submission of comments pursuant to these notices expired on July 1, 2019. The Secretary to the Commission also issued a notice on May 1, 2019 and instructed that initial comments be filed by July 1, 2019 and reply comments be filed by July 15, 2019. In response, 17 sets of comments, representing 108 entities, were submitted pursuant to the notices. In addition, more than one thousand postcards and letters were submitted by members of the public. A list of commenters and summary of comments are attached as Appendix E. Specific comments are addressed topically in the discussion sections below.

IV. LEGAL AUTHORITY

As discussed in the Accelerated Efficiency Order, the Commission has the responsibility and the authority under the Public Service Law (PSL) to ensure that Utilities carry out "their public service responsibilities with economy, efficiency,

and care for the public safety, the preservation of environmental values and the conservation of natural resources." PSL §5(2); see also PSL §66(3). Pursuant to the New York Energy Law (Energy Law), including §§ 3-103 and 6-104, the Commission is required to consider actions to effectuate State energy policy and the New York State Energy Plan, which includes increased energy efficiency as a major contributor to New York's energy future.[21]

Furthermore, these actions are in accordance with the recently enacted CLCPA.[22] Section eight of the CLCPA specifically authorizes the Commission, as well as other state agencies, to take actions "to contribute to achieving the statewide greenhouse gas emission limits [established in the Act]."

In fulfilling the mandates of the PSL and the Energy Law, the Commission has directed the development and implementation of a number of programs to increase the deployment of energy efficiency resources in New York, including EEPS, the CEF, and ETIPs. The activities directed and authorized in this Order will continue and build upon the progress made through those programs.

V. DISCUSSION

Establishing and achieving ambitious energy efficiency and building electrification targets are crucial to meeting New York's clean energy goals and addressing climate change. This Order establishes policies, including budgets and targets, that support the achievement of those goals through the deployment of cost-effective energy efficiency and building electrification

[21] 2015 New York State Energy Plan.

[22] Chapter 106 of the Laws of 2019; PSL §66-p.

resources. As discussed in the Accelerated Efficiency Order, these goals include the State Energy Plan's carbon reduction goal of 40% statewide reduction of greenhouse gas emissions from 1990 levels by 2030.

The comprehensive package of initiatives authorized in this Order will play a meaningful role in meeting the State's carbon reduction goals. They will result in 35.8 TBtu of energy savings incremental to levels currently authorized by the Commission.[23] Over the 2019-2025 period, additional customer contributions will be $1.99 billion.[24] Gross participant bill savings over the lifetime of the projected measures are estimated to be over $13 billion, exclusive of participants' private investment in equipment and services. Gross lifetime utility system benefits associated with the targets are estimated to be nearly $6 billion, representing avoided energy, capacity, and distribution costs; these avoided costs are also reflected in the participant bill savings. In addition, carbon reduction will create $1.7 billion in societal benefits. While cost recovery will be dealt with in individual rate proceedings, for a typical residential customer, bill impacts through 2025 across all companies associated with the incremental spending

[23] Including approximately 4.7 TBtu authorized in recent rate proceedings, 0.6 TBtu authorized in the August 9, 2018 Order Approving with Modification Gas Demand Response Pilot in Case 17-G-0606, the Con Edison Smart Solutions proceeding, and the 1.5 TBtu for 2019-2020 utility programs authorized in the Accelerated Efficiency Order.

[24] This figure is inclusive of uncommitted and unspent energy efficiency funds which, as of June 30, 2019, are estimated to be over $106 million for electric and $87 million for gas. Additional uncommitted energy efficiency funds will be used to further reduce bill impacts.

will average 0.7% for electric bills and 0.4% for gas bills.[25] These targets do not include activity by the Long Island Power Authority (LIPA) and the New York Power Authority (NYPA), which the Commission anticipates will adopt similarly aggressive energy efficiency and electrification goals and coordinate with the Utilities and NYSERDA, as appropriate.

This Order establishes the State's commitment to reaching nation-leading annual levels of efficiency savings by 2025 of 3% for electricity and 1.3% for gas.

This Order also initiates a long-term, far-reaching heat-pump strategy for New York, with an initial direction of $454 million in funding to achieve 3.6 TBtu, with a focus especially on heating applications and an agenda to expand rapidly beyond single-family building typologies. This strategy directs a common statewide framework across utilities and NYSERDA and looks to NYSERDA to complement utility programs with meaningful market-enabling development of workforce, supply chain, and consumer demand.

For the LMI sector, this Order commits 20% of incremental energy efficiency funding to programs serving this sector and anticipates adjustments as the Climate Action Council called for in the CLCPA establishes its policy instruments. This Order also directs a common statewide framework across utilities and NYSERDA for LMI programs and takes meaningful

[25] Bill impacts are estimated based on direct impacts to base utility rates and, for purposes here, reflect the portfolio budgets as an annual expense. The average bill impacts reflect the use of uncommitted funds in the early program years, as a result of which annual bill impacts will be lower in early years and increase through 2025. These estimates do not include impacts that may occur due to changes in energy sales as reflected through the revenue decoupling process. Numerous other factors will affect adjustments in the revenue decoupling process, such as changes in economic activity.

steps to improve LMI access to these programs through a Customer Hub and through useful and necessary streamlining. This Order recognizes the need for further engagement with customers and stakeholders to develop and implement strategies that will succeed in better serving this sector.

This Order provides guidance on future utility initiatives on energy efficiency and heat pumps, specifically calling for an Interim Review. This process will assess all meaningful aspects of New Efficiency: New York program design and administration, useful innovation, and governance oversight, as well as adjustment of targets and budgets as more becomes practicable. Critical inputs are expected to include guidance emerging from the CLCPA processes, potential studies and the like, in-field experience, and a new Performance Management and Improvement Process.

Finally, this Order directs a Performance Management and Improvement Process to ensure continuous and meaningful improvement in scale, costs, and outcomes, relying on transparency and accountability, and enlisting the knowledgeable advice and feedback of energy efficiency and heat pump program experts, as well as market practitioners, customers, and advocates from low-income, environmental justice, and affordable housing groups.

Future action will be needed to meet the State's long-term clean energy goals as established in the CLCPA. The energy efficiency and renewable heating and cooling levels needed to achieve the 2050 carbon reduction goals will be developed by the Climate Action Council through a public process consistent with the CLCPA. The draft scoping plan will be issued on or before January 1, 2022 and the final scoping plan will be issued on or before January 1, 2023. The Commission will take further action, as appropriate and necessary, in response to the scoping

plan and other developments to ensure that the Commission's energy efficiency policies support the achievement of the State's goals. Throughout this process, energy efficiency and the portfolio of other greenhouse gas-reducing measures will continue to be considered as vital components of meeting the needs of the electric and gas systems, customers, and policy goals, as needed and as warranted by the performance, achievement, and comprehensively assessed cost-effectiveness of those programs.

In parallel to this proceeding, the Commission is evaluating near-term gas supply constraints and potential responses to those constraints.[26] The potential for demand-reducing measures to alleviate gas supply constraints will be considered on a utility-specific basis, and targets and measures in addition to those adopted in this Order may be adopted either in rate cases or in proceedings directly addressing supply constraints.

A. Targets and Budgets

The approach to budgets and targets adopted in the Accelerated Efficiency Order was threefold: (1) overall jurisdictional goals through 2025 were adopted to create market certainty and guidance for future implementation decisions; (2) immediate targets and budgets were established for 2019-2020 in order to immediately accelerate utility program activity; and, (3) a process was established to set detailed utility-specific targets and budgets for the period 2021-2025, with the expectation of Commission action in 2019.

[26] Case 19-G-0080, In the Matter of Staff Investigation into a Moratorium on New Natural Gas Services in the Consolidated Edison Company of New York, Inc. Service Territory.

The Accelerated Efficiency Order presented incremental presumptive targets totaling 31 TBtu with corresponding incremental funding of $1.6 Billion as a reasonable starting point from which the Utilities' and NYSERDA's follow-on discussions should build.[27]

The Utility Proposal primarily adopted the presumptive budgets and targets presented in the Accelerated Efficiency Order, with four substantive modifications: (1) Con Edison's electric and gas targets were adjusted per Commission direction in the February 7, 2019 Smart Solutions Order;[28] (2) Orange & Rockland's electric and gas targets and budgets were adjusted to reflect levels authorized in the 2019 Rate Order;[29] (3) Central Hudson's budget was adjusted to reflect proposed budget increases totaling $7.1 million and $0.6 million for electric and gas, respectively, over the 2021-2025 period; and (4) the heat pump target was reduced from 5 TBtu to 2.7 TBtu and the heat pump budget was increased from $250 million to $349.8 million collectively, across all companies. The Utilities' proposed targets total an incremental 23.3 TBtu of savings for 2021 through 2025.[30] The Utility Proposal includes the dedication of 20% of incremental energy efficiency funding to low- to moderate-income programs. The Utility Proposal also

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[27] The incremental 31 TBtu target was inclusive of approximately 4.6 TBtu of incremental activities authorized through recent rate proceedings.

[28] Case 17-G-0606, supra, Order Approving with Modification the Non-Pipeline Solutions Portfolio (issued February 7, 2019).

[29] Cases 18-E-0067 et al., supra, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plans (issued March 14, 2019).

[30] When accounting for savings from rate cases and 2019-2020 targets authorized in the Accelerated Efficiency Order, this figure totals 29.5 TBtu in comparison to the 31 TBtu put forth in the Accelerated Efficiency Order.

requests that existing energy efficiency target and budget levels be reauthorized for the period 2021-2025. Lastly, the Utility Proposal requests that the Utilities be given flexibility to reallocate budgets and targets between fuel types and between years, as well as the ability to increase budgets, as necessary in the future.

The majority of commenters are supportive of the increased energy efficiency targets and budgets, with several commenters, including the Association for Energy Affordability (AEA), EE Organizations, Energy Efficiency Advocates, and Renewable Heat Now (RHN) requesting the Commission confirm that the targets be established as minimums, and that utilities should be encouraged to exceed those targets and pursue all cost-effective opportunities.

AEA, EE Organizations, and Energy Efficiency Advocates note that the Utility Proposal lacks detail on how the Utilities will meet their energy savings obligations, and along with NYSERDA note that a number of utilities indicate they are not even planning to meet the incremental 31 TBtu target, as evidenced by the Utilities' proposed reduction in TBtu to be achieved through heat pumps.

Most commenters agree with the Utilities' ancillary requests for some budget flexibility, including modification over time to meet the efficiency energy savings targets as needed, although Energy Efficiency Advocates and RHN caution that utilities should not shift funding away from the programs in one sector to pay for programs in another sector.

Multiple Intervenors (MI) urges the Commission to consider the cumulative impact of the costs of existing, proposed and future energy efficiency and heat pump programs on customers. MI notes that there is an assortment of other customer-funded policy programs already mandated by the

Commission and suggests that the practice of repeated layering of expensive, customer-funded programs is not sustainable.

AEA recommends the Commission direct the Utilities to provide concrete opportunities for stakeholder input during preparation of the implementation plans and suggests the creation of a formal advisory group. AEA and New York City (the City) comment that transparency and regular reporting on progress toward achievement of the targets and on expenditures are necessary, and the City further recommends an obligation for Con Edison to file a biannual report outlining such information.

Energy Efficiency Advocates suggest that comprehensive energy efficiency measures should be the programmatic focus, and that utilities should be allowed to provide greater incentives when related efficiency measures are packaged and achieve larger savings. AEA and NYSERDA fully support a fuel-neutral approach that includes delivered-fuels customers, using a combined electric and gas portfolio approach as Con Edison indicates is its preference. The City is concerned about limitations of Con Edison's apparent plan to continue offering discrete energy efficiency measures, rather than more comprehensive programs that provide complementary measures, or energy efficiency measures coupled with building envelope improvements. The City advocates the use of smart meters to reduce or replace some burdensome Evaluation Measurement and Verification (EM&V).

1. Discussion Regarding Targets, Budgets, and Overall Program Design

The Commission is committed to accelerating energy efficiency and heat pump deployment to the level needed to meet the State's goals and therefore in this Order authorizes a level of utility energy efficiency and heat pump activity that will deliver a minimum incremental 35.8 TBtu of site energy savings through 2025. The Utility Proposal has several discrete parts that must work together to achieve the overall policy objectives

regarding energy efficiency and to support the State's broader clean energy goals. Many commenters proposed authorizing an all-cost-effective policy approach, without bounds on total program spending. The targets and budgets adopted in this Order meet the goals inherent in the principle of pursuing all cost-effective measures, while retaining budget boundaries to ensure cost-containment. The targets are ambitious, calling for meaningful increases in achievement to reach nation-leading levels of savings by 2025 of 3% annually for electricity, as required in the Accelerated Efficiency Order, and 1.3% annually for gas, substantially increased from the Accelerated Efficiency Order, as well strong goals for clean heating and cooling. These target levels are necessary and realistic, as well as ambitious. For the customer budget invested, these target levels ensure utilities will seek cost-effective investments, taking into account energy, energy system, and carbon benefits. Retaining the use of authorized budgets is an important cost-containment device, to provide the assurance that the planned cost-effectiveness levels are achieved, and customer impacts are appropriately limited. As noted in the discussion below, the Interim Review provides a mechanism to restate targets upwards if more cost-effective potential is found through in-field experience, performance data, or potential studies and the like.

Some commenters encouraged the Commission to direct the Utilities to consider a broader range of benefits, including benefits related to fuel switching, non-energy benefits, and benefits associated with the reduced need for gas supply and delivery infrastructure. As explained in the Accelerated Efficiency Order, the Utilities should take into account benefits of fuel switching and savings in other fuels, including carbon benefits. The Utilities should also consider

identifiable benefits associated with reduced need for gas supply and delivery infrastructure. However, consistent with the BCA Order,[31] the Utilities should continue to limit their analysis to identifiable benefits related to the energy system, including reduced carbon emissions. While no modifications to the calculations of the benefits will be made at this time, further updates to the analysis of costs and benefits may be warranted in light of the changed circumstances presented by the CLCPA and its associated climate goals as well as its heightened consideration of the needs of low-income and disadvantaged communities.

The Commission directs slight modifications to the incremental electric targets over the 2021-2025 period to more accurately reflect all recent rate cases, as well as to make other minor corrections. The instrumental electric targets, as modified, retain the commitment to the 3% of electric sales sub-target discussed in the Accelerated Efficiency Order.

The incremental gas targets proposed, while responsive to the Accelerated Efficiency Order, require modification given (a) the additional potential for cost-effective achievement that currently exists in the area of gas energy efficiency; and (b) the need to ensure that existing gas infrastructure is being utilized as efficiently as possible, including by reducing peak gas demand. Nearly 60% of housing units in New York State are heated with natural gas.[32] Leading states are achieving incremental annual site energy savings at levels of over 1.0% of

[31] Case 14-M-0101, Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016).

[32] U.S. Census Bureau, American Community Survey, 5-Year Estimates 2013-2017, Occupied Housing Units by Type of Space Heating Fuel by County.

annual gas sales.[33] The targets included in the Utility Proposal reflect the Utilities' collectively ramping to 0.5% by 2025; however, there is wide variability in this metric among the Utilities. This figure also does not include NYSERDA's efficiency activities operating under the CEF. As articulated in the Accelerated Efficiency Order, NYSERDA's performance must be considered in developing any statewide goal.

The gas targets authorized in this Order, combined with NYSERDA's expected achievements, increase the ambition of the gas energy efficiency portfolios and place New York on par with other leading jurisdictions. In developing the corresponding budgets, consideration is given not only to existing run rates (that is, dollar spent per unit of savings achieved), but to the existing make-up of the Utilities' gas portfolios that in some instances include a substantial portion of savings resulting from behavioral programs.[34] Long term modification in consumer behavior is essential to ultimately meet the State's climate objectives; however, when considered as stand-alone energy efficiency programs, particularly in the form of basic Home Energy Reports, behavioral savings have relatively limited persistence and are unlikely to deliver the scale

[33] Berg, Weston, Seth Nowak, Grace Relf, Shruti Vaidyanathan, Eric Junga, Marianne DiMascio, and Emma Cooper. October 2018. The 2018 State Energy Efficiency Scorecard (U1808). Washington, D.C.: American Council for an Energy-Efficient Economy (ACEEE). Available at https://aceee.org/research-report/u1808.

[34] Behavioral energy efficiency programs are designed to provide customers with information and encouragement to voluntarily alter their behavior to reduce energy usage to date in New York provided primarily through the use of Home Energy Reports. As there are typically little to no financial incentives offered to modify behavior, these types of programs are considered very cost-effective, though the persistence of savings over time can diminish rapidly.

necessary to meet the State's needs. Further, the Utilities' current portfolios do not sufficiently target building envelope improvements. Increased activities in building envelope improvements will be necessary to achieve the State's climate objectives. Lastly, with regard to incenting natural gas heating and hot water equipment, an effective and necessary resource in the near term, incentives should be structured to encourage the adoption of the highest levels of efficiency.[35] Utilities are directed to transition their existing portfolios accordingly.

The Utilities are directed to reflect the energy efficiency targets and budgets authorized herein in an updated SEEP filing. Staff is directed to update CE-02: ETIP/SEEP Guidance to reflect the provisions of this order. The Utilities shall also incorporate the energy efficiency targets and budgets authorized herein in their quarterly scorecard reporting, which will be filed with the Commission and reflected in the Clean Energy Dashboard maintained by NYSERDA.

The discrete components of the Utility Proposal have specific characteristics that are best served through compartmentalized discussions as follows: Non-LMI Electric and Gas Energy Efficiency Targets and Budgets; LMI Electric and Gas Energy Efficiency Targets and Budgets; and Heat Pump Targets and Budgets.

2. Discussion Regarding Non-LMI Electric & Gas Targets and Budgets

The proposed incremental non-LMI electric targets are adopted as presented in the Utility Proposal, with modifications, as detailed in Appendix A to retain projected achievement of the 3% electric sub-target described in the

[35] Evolution of the gas portfolios should be explored in the Performance Management Process discussed herein.

Accelerated Efficiency Order. With regard to budgets, Central Hudson's arguments for increased incremental budgets, related to their historic run rates being far below other New York utilities, are persuasive. Central Hudson notes the average Joint Utility run rate is 66% higher for electric and 105% higher for gas compared to Central Hudson. Central Hudson's requested budget increase, however, fails to recognize the significant difference between their service territory and those of downstate utilities that, on average, experience higher run rates due, in part, to higher costs of doing business in those regions. Comparing Central Hudson to other comparable upstate utilities reflects variance in run rates of approximately 32% electric and 71% gas. Therefore, Central Hudson's request is granted, with modification, as detailed in Appendix A.

The proposed incremental targets assumed continuation of the existing energy efficiency activities across all utilities which total approximately 3,600 GWh and 11.6 TBtu through the 2021 to 2025 period. This level of continued activity, referred to as "base," is authorized herein and results in no incremental bill impacts. To allow transparency as to base versus incremental activity, each utility's base and incremental targets are detailed further in the Appendices; subsequent to this Order however, utilities need not maintain this distinction in reporting and filings and are directed to optimize their portfolios consistent with the principles and guidance provided herein.[36]

[36] Authorized budgets are inclusive of evaluation, measurement & verification (EM&V). The Commission notes Niagara Mohawk should align its treatment of EM&V costs accordingly in their next rate proceeding.

3. Discussion Regarding LMI Electric & Gas Targets and Budgets

The Utility Proposal dedicates 20% of incremental energy efficiency funding to dedicated LMI programs. This level of LMI funding is adopted here; it maintains the current proportional share of dedicated funding for LMI programs. This funding is incremental to the approximately $250 million in direct cost relief annually provided statewide through the Affordability Program targeted at limiting energy burden (that is, energy costs relative to household income) to no more than 6%. As discussed below, requirements of the CLCPA with regard to disadvantaged communities may require later adjustment of the targets and budgets authorized herein. Processes established within the CLCPA will affect future implementation.

The Utility Proposal requests flexibility with respect to the proportional targets and budgets by fuel type. As proposed in the Utility Proposal, the LMI budget totals $253 million for 2021-2025, with 84% for electric programs and 16% for gas programs. LMI energy efficiency programs not only serve the purpose of energy efficiency and corresponding carbon reductions but are also a tool to improve the energy affordability of participating households. The majority of a typical residential household's total energy costs are associated with space and water heating. Therefore, measures targeting these costs may be most effective in improving affordability. NYSERDA supports the Utilities' request for flexibility with respect to the proportional distribution of budgets and targets by fuel type and recommends that the Utilities fund energy efficiency improvements to the building envelope for electric customers regardless of primary heating fuel. NYSERDA comments, based on their low-income program experience, that a more appropriate distribution of funds would be 70% gas and 30% electric.

Frequent variation of budgets by fuel source could result in uncertainty in the marketplace and among service providers, as well as potential unforeseen increased bill impacts; therefore, the request for open-ended flexibility is denied. However, adjustments to the proposed levels are warranted to better meet policy objectives for this sector. NYSERDA's recommendation for a 70%/30% split between gas and electric funds for LMI programs is therefore adopted. Utility-specific LMI budgets and targets are detailed further in Appendix A. As described in the Accelerated Efficiency Order, electric funds can support thermal measures, as appropriate, in delivered-fuel-heated households.[37]

B. Heat Pump Targets and Budgets

The 5 TBtu minimum target established in the Accelerated Efficiency Order was based on NYSERDA's analysis that estimated an achievable statewide goal of 6 TBtu assuming 100,000 residential building installations through 2025.[38] The Commission ordered a goal of 5 TBtu, representing approximately 88,000 buildings, for the jurisdictional utilities representing a reasonable share of the statewide potential. The Utility Proposal states that during the collaborative process, NYSERDA presented updates to its January Heat Pump Report that resulted in significant reductions in the per unit savings that were used in the initial analysis. NYSERDA documented the updates to its

[37] Pursuant to the discussion on pages 34-35 of the Accelerated Efficiency Order, electric funds may be used for thermal measure in delivered fuel-heated households so long as the program is expected to result in some reduction in electric load, such as through reduced air conditioning load.

[38] Following presentation to stakeholders at a DPS heat pump stakeholder event on October 3, 2018, NYSERDA released its publication "New Efficiency: New York Analysis of Residential Heat Pump Potential and Economics" in January 2019 (January Heat Pump Report).

methodology in the May Technical Update. According to the Utilities, the updated methodology results in a 34% increase in NYSERDA's projected costs of acquiring 5 TBtu of net site energy savings from heat pumps and assumes that installations in the non-residential market will represent a substantial portion of the 5 TBtu.

With the exception of Orange & Rockland, all utilities made modifications to the utility-specific heat pump targets or budgets put forth by NYSERDA. Niagara Mohawk, NYSEG, and RG&E decreased both their targets and their budgets, citing concerns as to the level of scale-up required, as well as the proportion of the target and associated costs being assigned to customers. Central Hudson decreased its target and maintained its budget, citing analysis estimating per unit savings as well as program adoption trajectories. Con Edison maintained its target but increased its budget, citing the NYSERDA analysis that utilized a lower discount rate for Con Edison compared to all other utilities and its belief that more funding would be necessary for consumers to adopt heat pump technology for primary heating at this scale.

The majority of commenters support aggressive targets and budgets for heat pumps, citing building electrification as a critical component of achieving the State's climate policy objectives. NYSERDA, Dandelion, NY-Geo, and RHN all call upon the Commission to retain the original 5 TBtu heat pump target put forth in the Accelerated Efficiency Order. The City generally supports an expansion of heat pumps and cites the health benefits of heat pumps in their avoidance of onsite fossil fuel combustion and associated pollutant and greenhouse gas emissions, as well as the more efficient heat transfer advantage these devices have over legacy HVAC installations.

MI questions whether the accelerated heat pump deployment programs are a cost-effective use of limited customer funds, while also noting that NYSERDA's estimation of those costs has increased by 34% from what had informed the Accelerated Efficiency Order, as well as the fact that NYSERDA's analysis of heat pumps is still ongoing.

NY-Geo asserts that actual savings experienced in the field are significantly larger than those projected in NYSERDA's May Technical Update and assumed by the Utilities as the basis for the Utility Proposal and offers assistance with refining estimates. NY-GEO further recommends that utilities be held harmless for added beneficial electrification load and count the energy efficiency impacts of beneficial electrification toward the 185 TBtu goal. Additionally, it requests an explanation for how the electric reduction target will be adjusted to reflect load increases from heat pumps and electric vehicles.

Dandelion comments that incentives such as those offered through the NYSERDA and Con Edison programs in Westchester could enabled it to operate at a scale that will would allow it to innovate and drive down costs.

NYSERDA recommends that when determining the final utility heat pump program budget levels and assessing their cost effectiveness, the Commission consider the net impact of program budgets on customers after taking account of the inverse cost shift.[39] NYSERDA agrees with the Utilities that offering all customers the opportunity to choose rates that reflect cost causation more accurately is desirable but further comments that

[39] Inverse cost shift refers to the increase in sales revenues that distribution utilities will experience when customers convert from a fossil fuel to an electric heat pumps; under the Commission's ratemaking standards, these increased revenues are used to offset or reduce the rates that are paid by all electric customers.

residential customers may not be comfortable choosing such revised rate structures given their typically more complex structure and limited visibility for customers as to whether their usage pattern would translate to bill savings. NYSERDA comments that for residential customers using standard residential rates and switching from oil heating to a heat pump, the lifetime inverse cost shift effect can in most cases be expected to exceed incentive levels that would reflect the "missing money" required to make the project a viable customer investment, and that heat pump program budgets will thus translate to significantly lower net burdens to customers than the budget amounts suggest.

NYSERDA considers 5 TBtu to be an achievable minimum target for heat pumps for the Utilities' programs for 2020-2025, particularly if large multifamily and commercial buildings are included in the portfolio. NYSERDA disagrees with the lower targets put forth by a number of utilities and states the proposed targets are too low and proposed budgets too high. NYSERDA further provides revised estimates for NYSEG/RG&E collectively of 1.3 TBtu for $68 million; and suggests a revised budget for Con Edison of $88 million to achieve the 0.8 TBtu goal proposed, or alternatively a target of 1.6 TBtu for Con Edison's originally proposed $189 million budget. NYSERDA bases its revised estimates upon further market intelligence gathered regarding market uptake by utility and a review of the assumptions used by the Utilities in comparison to the May Technical Update.

In reply, NYSEG and RG&E state that they are unable to find any factual information or program experience to support NYSERDA's claim that either the 40 percent or 90 percent heat pump adoption growth rate is achievable. NYSEG/RG&E states it is not clear whether PV market behavior and global pricing

trends are analogous to those of heat pumps, as suggested in NYSERDA's comments. NYSEG/RG&E reiterates its proposed figures are based on actual heat pump program experience by Efficiency Maine. Lastly, NYSEG/RG&E acknowledge the per unit savings used in their analyses are based on the TRM in effect at the time of their proposal and are agreeable to using the established savings methodology for heat pumps once they are finalized and incorporated into the TRM.

Niagara Mohawk clarifies in reply comments the heat pump target and budget proposed only applies to Niagara Mohawk and not to KEDLI and KEDNY. Niagara Mohawk further states its proposed TBtu target was lowered from that proposed by NYSERDA based on uncertainties related to the savings methodology, market growth, and incentive structure at the time of the filing. Niagara Mohawk states it continues to explore the feasibility and potential of commercial heat pump installations, as well as heat pump pilots, potential non-wires alternatives/non-pipeline solutions initiatives, and/or geothermal offerings by National Grid's downstate gas companies to help further support the statewide heat pump installation targets and energy savings goals.

In reply comments, Con Edison states three chief concerns over NYSERDA's position. First, NYSERDA's January Heat Pump Report utilizes a "missing money" calculation to inform necessary incentive levels. According to Con Edison, NYSERDA fails to explain why the numbers contained in its May Technical Update or July comments abandon this approach. Second, NYSERDA's January Heat Pump Report was based on a more even mix of heat pump technologies (ex. Ground Source Heat Pumps (GSHP), Whole House Air Source Heat Pumps (ASHP), Mini-split Air Source Heat Pumps (Mini-split) than the subsequent analyses, with no explanation for the shift. Con Edison believes a more even mix

is appropriate given customers' diverse needs and its experience through the Non-Pipeline Solutions solicitation process. Lastly, Con Edison takes note of the per unit energy saving estimates that were revised with the May Technical update, significantly impacting the tonnage and number of installations necessary to achieve the goal. Con Edison states it will continue to work with NYSERDA, other utilities and Staff in developing calculations of reasonable estimates of energy savings that can be delivered through installation of the various heat pump technologies, with the expectation that these estimates will be updated as more information and experience is gained.

1. Discussion Regarding Heat Pump Targets and Budgets

As discussed in the Accelerated Efficiency Order, heat pumps create meaningful improvements in overall efficiency and reduce carbon emissions. By changing primary fuel use from direct combustion to electricity, heat pumps will utilize the low-carbon electric generation the State is developing, resulting in large reductions in GHG emissions over time, compared with on-site combustion by customers. Additionally, as the State addresses customer heating needs in natural gas supply-constrained areas, electrification can be a viable alternative.

Commenters strongly support the role that building electrification must play in meeting the state's multiple objectives. However, the breadth of varying analyses regarding energy savings estimation, adoption trajectories, and unique characteristics of the various heat pump technologies underscores the nascency of this market and therefore requires a careful approach for establishing utility-specific targets and budgets. The pragmatic approach taken here is to begin implementation, closely monitoring performance and market

experience with a planned review to be commenced in 2022 by Staff, with any substantive variances or recommendations for improvement to be brought to the Commission in 2023.

Three primary variables are in question underlying the various target and budget estimates put forth in this proceeding: (1) per unit savings estimates for the three distinct heat pump technologies; (2) adoption rates that can reasonably be expected; and (3) incentive levels necessary to influence customer decisions.

With respect to per unit savings, the Commission finds the revisions reflected in NYSERDA's May Technical Update were warranted. As noted by the Utilities, the TRM serves as a primary tool for ensuring all program administrators utilize a consistent approach to the estimation of savings for various energy efficiency measures. Staff has engaged with the Utilities, NYSERDA, and industry representatives to develop revisions to the TRM that provide proper treatment for the installation of heat pumps for detached single family and one- to four-unit multifamily residential applications, including but not limited to, estimation of savings from displaced fossil fuels. This work has resulted in a further reduction in the per unit savings for residential ground source and whole-house air source heat pumps of approximately 10%, primarily related to the inclusion of estimates for additional electricity consumption, such as, pumping and fan power required by the heat pump. TRM calculations are estimations and the number of variables and assumptions that affect the ultimate savings realized, include installation practices and consumer behavior. However, given the nascent nature of the market and New York program administrators' relative inexperience with this technology, it is prudent to err on the side of caution in establishing targets. In establishing the heat pump targets herein, Staff's

recommended per unit savings, developed through the collaborative process discussed above, are used. Staff is directed to provide finalized revisions to measures and any associated appendices in the Technical Resource Manual to document the savings estimation approach used herein to the Technical Resource Manual Management Committee within 30 days of this Order.[40] The Technical Resource Manual Management Committee shall, in turn, incorporate the revised measures and appendices into the TRM and document these revisions in a Record of Revision filing, no later than two weeks upon receipt with an immediate effective date.[41] Heat pump initiatives authorized herein are not restricted to installations in the residential market. The prescriptive estimation approaches found in the TRM, where appropriate, should be used for residential heat pumps installed in small commercial applications, while custom savings estimation approaches should be used for large commercial and large multifamily applications.

Data collection and in-field measurement and verification activities of a substantial number of installations will be critical to the further refinement of saving estimation approaches. Given the variety of opposing viewpoints and history of varying timeliness and quality of EM&V work, the Commission directs a statewide EM&V study of heat pump activities, to be directed by Staff, in consultation with the

[40] Heat pump programs will exercise the option for exemption from the application of the realization rate determined through the verified gross savings process, for purpose of energy efficiency-related EAM savings claims, allowed under CE-08: Gross Savings Verification Guidance until completion of the 2022 review.

[41] Following standard practice TRM Records of Revision are filed in Matter 15-01319, In the Matter of the New York State Technical Resource Manual.

Utilities, NYSERDA, and stakeholders, to be completed by June 1, 2022. Costs of the study will be co-funded by the Electric Utilities' heat pump budgets and NYSERDA's CEF budget.

Adoption trajectories and customer incentive levels are the other key variables that have a direct effect on budgets and are the primary elements of the varying viewpoints put forth in this proceeding. Staff conducted a thorough review and analysis to inform the targets and budgets put forth herein.[42] The Accelerated Efficiency Order put forth a minimum 5 TBtu heat pump goal that was predicated on an estimate of the achievable potential of the small residential market. NYSERDA's program experience has been that 1/3 of the savings are resulting from non-residential installations; this is a signal that achievable potential in the near term from the non-residential market may be significant.

As put forth in the Accelerated Efficiency Order, a minimum jurisdictional heat pump target will be established through 2025. Based on the revised estimates, this target is adopted as a minimum of 3.6 TBtu for a total cost of approximately $454 million. The Commission underscores this is

[42] The Staff analysis considered the varying adoption projections and cost assumptions proposed by NYSERDA and the electric utilities, as well as external data sources such as heat pump incentive programs and findings from the National Renewable Energy Laboratory. The analysis employed an "S-curve" adoption trajectory (reflecting that consumer adoption does not occur at a constant rate) as well as a mechanism to assess incentive requirements based on a specified payback period. Staff tested the sensitivity of adoption projections and associated budget requirements to different inputs based on both existing adoption potential studies and materials filed in this proceeding, developing a range of possible outcomes based on different input combinations. The outcome range for each utility was compared against external estimates of heat pump adoption and cost to inform the resulting targets and budgets established in this Order.

a minimum level of achievement, based primarily on data available for residential applications. The Commission also observes that LIPA may adopt similarly ambitious targets and that such LIPA targets are not reflected in these figures. Utilities' programs should not be limited to residential applications and should allow for support and advancement of heat pump technologies outside of the residential sector.

The Commission also underscores that this initial commitment is just that, and during this phase looks to utility program administrators to collaborate with NYSERDA to develop strategies to expand beyond the small residential market and to drive more favorable economics and cost-effectiveness, to advance beyond the initial TBtu goal as field experience and industry readiness matures. Finally, the Commission underscores its particular interest in making rapid progress in heating applications for heat pumps so as to provide the best support for New York State goals to reduce reliance on fossil fuels. These targets and budgets will be subject to the 2022 review and may be revised upward at that time if further cost-effective potential is identified, also taking into account the additional experience gained in the non-residential market.

Utility specific building electrification targets and budgets are adopted as detailed in Appendix C.[43] The electric utilities will be the primary administrators of the heat pump programs. Heat pumps, however, are an important alternative to be considered in natural gas supply-constrained areas. Therefore, within the targets and budgets established herein, an additional requirement is placed on Con Edison to dedicate a

[43] Authorized budgets are inclusive of EM&V costs. Niagara Mohawk should align their treatment of EM&V costs accordingly in their next rate proceeding.

minimum of $56.8 million towards the installation of heat pumps in the KEDNY service area.

Heat pumps improve efficiency compared to conventional air conditioning and heating but increase overall annual electricity usage when they offset on-site fossil-based heating sources. The increase in total electricity sales can have a beneficial effect on non-participating electric customers, as these increased electricity sales result in increased delivery revenues, which generally reduce the per-unit delivery rates for all customers over time. The electric utilities raise legitimate considerations about the complexity and long-term efficacy of capturing the benefits of increased volumetric electric delivery revenues, in whole or in part, to help reduce direct heat pump program costs.

Therefore, the Commission will not require that such benefits be specifically captured to incentivize heat pump installations. Such benefits will automatically be returned to customers via the Electric Utilities' revenue decoupling mechanism in the short term and over the longer term will be reflected in the calculation of future delivery rates in electric utility rate proceedings. Further, utilities are correct in noting that if they implement more kilowatt (kW) demand-based delivery rates, heat pump customers taking advantage of such rates would no longer produce the same level of increased revenues as customers on today's current kilowatt-hour (kWh) volumetric-based rate structure.

NY-GEO recommends the adoption of a rate structure for heat pump customers that "eliminates the current subsidy they pay in the form of excessive volumetric delivery rates." As the Commission noted in the Accelerated Efficiency Order, technology-specific rate designs are not preferred where they are not necessary. Given that the Electric Utilities are

currently required to file voluntary demand-based delivery rates that would be available to all customers, including ground source heat pump customers, such technology-specific rates are not necessary.[44] Since the demand-based rates are expected to provide a direct benefit to heat-pump adopting customers, in the form of reduced delivery rates as compared to remaining on volumetric-based rates, the Commission encourages the Electric Utilities to include outreach and education efforts related to such benefits in the design of their heat pump incentive programs. The implementation of the more cost-reflective demand—based rate design offerings, combined with the expected decrease in heat pump installation costs due to technology and operational efficiencies, as Dandelion references in its comments, should result, over time, in a self-sustaining marketplace.

C. Interim Review & Performance Management and Improvement Process

The ambitious targets adopted in this Order require substantial levels of acceleration in performance, as well as evolution of portfolios and measure mixes. While the goals are forward looking through 2025, due to the importance of achieving these targets and the customer contributions supporting them, it is necessary to have a formal Interim Review. The Interim Review will commence in 2022 with expected Commission action in 2023 to assess the full complement of actions authorized herein and make necessary adjustments. This Interim Review provides a mechanism to restate targets upwards, if more cost-effective potential is found through in-field experience, performance date, or potential studies and the like. This 2022 Review

[44] Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Order on Standby and Buyback Service Rate Design and Establishing Optional Demand-Based Rates (issued May 16, 2019).

should also consider whether a six-year plan, running through 2028, should be established in 2023, with an additional review in 2025 as more becomes practical, in keeping with the principles of "all cost-effective" while preserving budgets as a valuable tool for cost containment. This Interim Review should assess all meaningful aspects of New Efficiency New York, including adjustments to program design and administration, innovative practices with refinements to innovations introduced at this stage (such as kickers), and governance and oversight mechanisms. This review should also specifically consider the case for adjusting targets, and modifying budgets appropriately. These assessments should reflect direction setting that can emerge from the CLCPA, as well as insights and findings from potential studies and the like, from realized performance and field experience, and from the Performance Management and Improvement Process described below.

Monitoring and improving performance, however, is not and should not be limited to the formal Commission review process. In the Accelerated EE Order, the Commission directed Staff to convene the Utilities and NYSERDA in a Performance Management and Improvement Process. As described, the purpose of this process will be to develop, critique, and share efficiency and electrification program management practices including best practices from other jurisdictions, for the purposes of achieving cost reductions, improving program management practices, and enabling developers to participate in markets by enhancing clarity, uniformity, predictability and regularity of program offerings.[45]

In support of the actions taken in this Order and parties' comments calling for improved opportunities for input

[45] Accelerated Efficiency Order at 73.

on portfolio development, the Commission directs commencement of this process by Staff within 90 days and provides the following additional guidance. The Performance Management and Improvement Process shall be structured to achieve: (a) a strong statewide portfolio with clear priorities and focus, based on the best assessment of needs and gaps, cost-effectiveness, and best likelihood of progress; (b) performance improvement, with transparent assessment and clear guidance on how to improve cost-effectiveness, uptake, and timeliness; (c) mechanics, including foundational tools such as the Technical Resource Manual and like practices, that affirmatively support swift and effective achievement of policy objectives; and, (d) transparency and openness of process, so as to provide best opportunity for all concerned parties and market participants to offer suggestions for improvement.

The Performance Management and Improvement Process shall reach beyond the traditional participants in Commission processes and include market practitioners and customers, and in particular should include advocates from low-income, environmental justice, and affordable housing groups. The Commission will not dictate a specific organizational structure, but given the breadth of the portfolios, Staff should ensure productive, efficient, and respectful use of participants' time and energy by considering usefully organized subject matter sub-groups, one-off technical conferences or other events, and any other productive methods for collaborative discussions and market engagement. The overall result must include a process to ensure swift translation of insights and recommendations into practice.

D. System Values

The Accelerated Efficiency Order directed each of the Utilities to address how the system value of efficiency measures

could be reflected in customer incentives. The utilities were ordered to present "kicker" proposals where peak reduction is a substantial portion of their program.[46] Rate proceedings will be the venue in which resulting benefits from capital expenditures or other system values can be tracked to the credit of efficiency savings.

NY-GEO argues that ground source heat pumps should be considered as a provider of system values. The New York Power Authority (NYPA) recommends that implementation plans for the heat pump programs and kicker proposals should clearly define customer and technology eligibility, as well as all processes and timelines for program participation and implementation. NYPA proposes that any overlap between the technologies incentivized under both the kicker and the heat pump programs be identified, and that, where a certain technology is eligible for the heat pump program but not the kicker (or vice-versa), this distinction should be made clear in the implementation plans for both programs.

Con Edison proposes an electric kicker to provide customers with incentives to increase adoption of space cooling and related measures that provide system value, such as load relief during peak summer hours. The Company proposes a three-year spending of up to $48 million over 2020-2022 for the kicker incentive to determine its effectiveness in encouraging customers to adopt efficient space cooling efficiency technologies. As appropriate, the Company will incorporate any learnings from the kicker incentive in future portfolio development. The City endorses a per-kilowatt-hour bill credit

[46] Kicker in this context is used to describe an additional customer incentive based on the value the energy efficiency measure provides to the utility system, primarily in the form of peak reduction.

based on the $48 million "kicker incentive" proposed by Con Edison to encourage heat pump adoption by defraying operating costs. The City contends that not only would such a credit fulfill the Commission directive to incentivize space cooling programs, but in its application to heat pump adoption, it would encourage efficient heating technology as well.

Orange & Rockland proposes an electric kicker to provide customers with incentives to increase adoption of space cooling equipment or other technologies in areas of system constraint. These incentives would be provided to technologies that would reduce peak demand in order to defer infrastructure investment.

Central Hudson does not believe the use of kickers would be beneficial within its service territory at this time, since the electric peak demand has flattened or declined in recent years resulting in substantial excess capacity. Locational value is being used to boost incentives to customers located within NWA zones. The company expects to re-evaluate the use of kickers if future constraints are identified.

NYSEG and RG&E do not believe a kicker incentive in their service territories is justified based on anticipated system value relative to the additional peak reduction to be obtained with kickers. Therefore, the Companies do not plan to include kicker incentives as part of their energy efficiency activities.

National Grid proposes the use of kickers in space cooling to provide additional value to both identified constrained areas and to the entire system with the use of a tiered-incentive business model. The company will work through the adoption of these incentives through 2019 and will add other technologies and measures, including peak-coincident measures and location-based incentives in 2020 and beyond, and an

implementation plan will be developed over the next year. The company will keep the Commission apprised of progress with the development of kickers.

NFG proposes a kicker that would be part of its Residential Rebate Program, which would launch as a pilot demonstration in January 2021. The overall goal of the kicker would be to drive deeper energy savings, by incenting customers to install multiple energy efficiency measures simultaneously, rather than a single measure. This approach would potentially reduce peak usage and help the Company achieve additional savings towards Commission-ordered targets, generating incremental contributions towards New York State Energy Plan goals.

Under NFG's proposal, when customers install three or more energy efficiency measures on a single application form, they would be eligible for a one-time kicker incentive of $100. A survey instrument would be included with the incentive payment to the customer, to understand if the kicker incentive motivated the customer to pursue a larger project scope. A description of the kicker construct, as well as the company's intention to continue, modify or discontinue the kicker incentive, would be included in future ETIP/SEEP filings submitted to the Commission.

The proposals of Con Edison, Orange & Rockland, and National Grid are consistent with the guidance of the Accelerated Efficiency Order, and the Commission approves of the proposed introduction of kickers by Con Edison, Orange & Rockland, and National Grid with the condition that experience with kickers must be monitored and reported; to the extent kickers prove effective in encouraging customer adoption and reducing system costs, they will be further integrated into future portfolio approaches.

Con Edison's request for incremental funding for kicker incentives is rejected. Instead, funding for kicker incentives shall come from the budgets detailed in the appendices of this Order, but, as described in the Accelerated Efficiency Order, kickers should be accounted for separately and tracked against system benefits in other segments of the utility's budget to determine their effectiveness. Con Edison, as well as the other utilities employing kickers, have the flexibility to adjust the portion of the budget spent on kickers as appropriate based on further experience.

NFG's proposal is not oriented toward system values; it is oriented toward achieving deeper savings from individual customers. This proposal may have merit as a method of program design to achieve greater overall savings and will be considered in that context. As a "kicker" in the sense described by the Accelerated Efficiency Order, NFG's proposal would not provide system value; it is not responsive and is not accepted here.

All of the kicker proposals relate to electric peak savings, with the exception of NFG. Although NFG's proposal is not accepted as a kicker, it does highlight that the kicker concept can apply equally to gas efficiency programs, where supply constraints create a value for gas peak reduction. Each utility should consider the potential for gas kickers to provide system value.

Central Hudson, NYSEG and RG&E have demonstrated that the use of kickers is not currently warranted in their territories on a system-wide basis.

E. Cost Recovery

Consistent with current practice, cost recovery details should be addressed in each utility's rate proceeding, continuing the transition away from surcharges and integrating cost recovery into base rates, unless specific treatment is

otherwise ordered. Although individual utility proceedings may develop reasons for alternative treatment of the recovery of the costs associated with the budgets adopted in this Order, the Commission expects that all available uncommitted and unspent utility energy efficiency funds will be used to mitigate the impacts of the portfolio budgets authorized here.

The Accelerated Efficiency Order determined that cost recovery should be on an annual expense basis, but that amortization over multiple years could be approved in individual rate proceedings if customer benefits were shown. This will continue to be the Commission's policy and appropriately deliberated within individual rate proceedings.

MI argues that it is unjust to require a customer to fund a program from which it receives no direct benefit, and that, accordingly, energy efficiency program costs should be allocated on a cost-causation, beneficiaries-pay basis. The Commission has long since determined that energy efficiency is among the many types of utility expenditures that carry system and societal benefits and are properly allocated to all customers.

Currently, KEDNY, KEDLI, NYSEG and RG&E have pending rate cases. This affords the opportunity to recognize the companies' new energy efficiency and, where applicable, heat pump budgets. However, four utilities which will be affected by this Order likely will not have new rates before the modified budgets begin in 2020 or 2021. These companies are NFG, Central Hudson, Niagara Mohawk, and O&R. Con Edison's electric and gas rates were set in January 2020 and provided for allowances based on the company's April 1, 2019 filing in the NE:NY proceeding. The budgets approved here for Con Edison are incrementally higher starting in 2020 for the electric portfolio budget (including the heat pump budget) and 2021 for the gas portfolio

budget. The company's rate plan requires it to defer the revenue requirement impact of the three-year cumulative difference between the final amounts in the NE:NY proceeding and the level established for future credit/recovery from electric and gas customers as applicable. Accordingly, no additional ratemaking or deferral authority is required at this time.

NFG's rates were last set in 2017, in a litigated one-year case. The new energy efficiency budgets for NFG are incrementally higher starting in 2021. Uncommitted and unspent utility energy efficiency funds will first be used to cover such increases. NFG has over $7.8 million of such funds available, enough to offset more than the first three years of the incremental energy efficiency budgets authorized herein. NFG is authorized to use the uncommitted unspent funds up to the budget amounts authorized herein.

For Central Hudson, Niagara Mohawk, and O&R, their current rate plans have a downward-only reconciliation which covers the cumulative energy efficiency spending during their rate plans. With this Order, the amount these companies are expected to spend on energy efficiency and heat pump programs during their rate plans are increasing. Therefore, the following additional direction is provided with regards to the reconciliation mechanisms in each respective rate plan.[47]

The downward-only reconciliation will continue for cumulative energy efficiency and heat pump spending during the rate plans that is below the rate allowances, and an upward reconciliation on such costs, as applicable, will be allowed within the budget limits set herein. The total maximum cost to be allowed will be each utility's current base energy efficiency

[47] For partial years of reconciliation, the incremental energy efficiency and heat pump budgets are assumed to be spent equally over the course of the year.

budgets plus the incremental budgets authorized in this Order for energy efficiency and heat pump programs.

If Central Hudson, Niagara Mohawk, and O&R spend above the original budgets in their rate plans, they will be allowed deferral authority for incremental spending up to the amount this Order increases their budgets. This change will apply to both the cumulative amounts outlined in their respective rate plans, as well as any periods where the utility stays out beyond the end of their rate plan. Should NFG exhaust all available uncommitted and unspent funds, as described herein, they are granted similar deferral authority.[48]

In the event there are costs deferred due to this change, the deferred amount will first be satisfied by extinguishing uncommitted and unspent utility energy efficiency funds. Next, utilities are authorized to utilize the accrued interest on balances resulting from NYSERDA CEF collections, under the Bill-As-You-Go process. Utilities are further authorized to utilize all remaining uncommitted and unspent NYSERDA EEPS Gas funds. Appendix D details this funding as of December 31, 2019. In the Order Authorizing the Conclusion of the Energy Efficiency Portfolio Standard, NYSERDA was directed to complete all EEPS expenditures by February 29, 2020. Within 180 days of NYSERDA's conclusion of its EEPS programs, NYSERDA was further directed to file an EEPS Financial Reconciliation report.[49] NYSERDA is directed to transfer all available uncommitted and unspent EEPS gas funds to the Utilities

[48] For partial years of reconciliation, the incremental energy efficiency and heat pump budgets are assumed to be spent equally over the course of the year.

[49] Case 07-M-0548, Energy Efficiency Portfolio Standard, Order Authorizing the Conclusion of the Energy Efficiency Portfolio Standard (issued November 17, 2017).

concurrent with the Financial Reconciliation Report.[50] The utilities shall account for these funds as a regulatory liability in an interest-bearing account to be applied in a manner consistent with utility unspent funds as described herein. If there is still a balance owed to the company after use of the aforementioned funding sources, the balance can be deferred, with carrying charges accrued at the Other Customer Provided Capital Rate, for future recovery from customers.

F. Flexibility

The utilities request flexibility to adjust budgets periodically as necessary. AEA and Energy Efficiency Advocates agree that a degree of flexibility is effective, with Energy Efficiency Advocates cautioning that budgets should not be shifted from one sector to another. RHN states that flexibility should not be at the expense of meeting targets for both gas and electric savings. The City argues that rate cases are the most appropriate venue for setting targets.

Current practice allows utilities to shift budgets from year to year within a portfolio to accommodate the timing concerns that arise with commitments and outlays and to avoid artificial program stops and starts. Utilities may also adjust budgets and targets among programs within the same portfolio, e.g. funds may be shifted from one electric efficiency program to another. These practices will be continued, with two additional requirements: (1) heat pump targets must be maintained as separate targets within the electric utility portfolios; and, (2) funds cannot be transferred from LMI to non-LMI programs. Utilities will not have general flexibility to shift funds among gas, electric, and heat pump budgets. Gas,

[50] Remaining NYSERDA EEPS Gas funds will be allocated to the gas utilities proportional to their respective share of the original collections.

electric, and heat pump targets are established in this Order to align with policy goals; a utility may shift funds among these portfolios only if it can demonstrate that it will meet the annual target for the portfolio from which funds are being transferred. In the event funding shifts between fuels occurs, reconciliation of associated costs will occur within rate proceedings.

G. Collaborative Activities[51]

The Utility Proposal references areas of successful collaboration among the Utilities and NYSERDA including the development of the Utility Proposal, the Clean Energy Dashboard, and the Utility Energy Registry, and notes a number of areas that may be pursued such as: maintenance of an energy efficiency program inventory; development of standard contractor eligibility requirements; and, leveraging statewide awareness and outreach capabilities with focused targeted efforts. The utilities explain that details are unique to each collaborative endeavor and that the utility and NYSERDA will describe any such initiatives in their respective public-facing filings.

EE Organization support the collaboration between NYSERDA and the Utilities, noting its importance to reach the State's energy goals as effectively as possible and in delivering seamless options to customers. AEA also stresses collaboration as being critically important and comments that the Utility Proposal contains very little concrete information on collaboration beyond a central hub for LMI programs. It therefore suggests that further opportunity for stakeholder engagement is necessary. NYSERDA strongly supports collaboration with the Utilities, and believes that the

[51] Collaborative activities related to Heat Pump Deployment and the Statewide LMI Portfolio are covered in their respective sections.

collaboration structure must address: (1) sharing information on current programs as well as for prospective programs early in the planning process; (2) decision makers and subject matter experts from each entity regularly scouting strategic opportunities or market gaps; and (3)including combined impact analysis to ensure programs are motivating market participation and tracking toward overall goal attainment. NYSERDA goes on to suggest that its statewide studies and data sets can inform planning and evaluation with utilities supplementing for their territories as needed. NYSERDA concurs with the Utility Proposal that collaboration also can meaningfully advance programmatic enhancements that provide value to customers and stakeholders. For instance, more uniform contractor eligibility requirements, and better aligned marketing and customer outreach, present opportunities to reduce administration and customer acquisition costs of energy efficiency projects.

NYSERDA proposes that it and the Utilities collaborate to develop a mechanism that would allow customers who engage with any clean energy program to opt-in to receive follow up information about additional clean energy services, with leads routed to the relevant program administrator. This opt-in approach could also include the ability, with customer consent, for the sharing of information that can better enable the targeting of services to meet customers' needs. NYSERDA also asserts that it must also collaborate with the Utilities in terms of accounting for indirect market transformation benefits.

AEA and Energy Efficiency for All New York (EEFA NY) suggest that NYSERDA and the Utilities should refrain from penalizing consumers for participating in the programs of the other or preventing customers from using more than one program. EEFA NY adds that the concept of layered incentives for

different purposes should be part of program design when it leverages multiple resources for greater savings.

EEFA NY and AEA comment that coordination should ensure that all building and customer types are served by either utility programs or NYSERDA programs or a combination of the two, and EEFA NY further comments that NYSERDA and the Utilities must ensure coordination between heat pump programs and low-income programs, including EmPower and the Weatherization Assistance Program. AEA notes that a neutral third party can play an important role in performing coordination and reporting and suggests that NYSERDA could play that role if and when it no longer designs and manages programs. While NYSERDA continues to deliver programs, however, AEA suggests that the third-party role should be played by another party.

AEA and EEFA NY also suggest that competition could be further addressed by allowing utilities to claim savings produced by NYSERDA interventions. For defined collaborative efforts, NYSERDA supports the policy of allowing a utility and NYSERDA to jointly contribute to the design and implementation of a pilot or program for which both the individual utility and NYSERDA will report the resulting energy savings. NYSERDA agrees with the Utilities that each defined collaborative effort need not be subject to a predetermined cap on the energy savings that may be counted toward utility achievements, provided that the effort is clearly described in publicly accessible filings to DPS. In NYSERDA's view, both the utility's ETIP/SEEP filing and the CEF Investment Plan filed by NYSERDA should contain clear descriptions of the effort's objective and scope, implementation period, rationale for how joint investments will increase impact, and how the resulting energy savings will be quantified and reported.

NYSERDA suggests that it may be appropriate for the Commission to establish oversight at the portfolio level on the total quantity of dual reported savings that may be counted toward a utility's EAM target, whether those savings result from one or from multiple defined collaborative efforts. NYSERDA points out that currently utilities are allowed to claim energy savings realized through partnerships up to 5% of the utility's target per partnership, and that this per-partnership basis could constrain a utility from pursuing a joint pilot at the scale needed to provide for meaningful testing of the concept. Consideration of dual reported savings at the portfolio level, rather than per partnership, could eliminate that constraint.

NYSERDA also cites the need for consistent methods of accounting for program- and project-level savings where appropriate, and the need for regular exchange of programmatic benefits data between utilities and NYSERDA so that the proper amount of overlap can be netted out, and suggests that the Commission could establish parameters for accounting for energy benefits according to the model of collaboration that is pursued. For broader NYSERDA-utility collaboration on cross-marketing and consumer education, NYSERDA suggests that the Commission establish no EAM rewards specific to such marketing efforts. For direct referrals to available programs, NYSERDA supports allowing the utility to report toward its savings goals a modest percentage (i.e., 10 to 20 percent) of the energy savings that are achieved from the efficiency measures installed by those referred customers. This would be consistent with Commission action in the EEPS proceeding where each utility was allowed to claim 15% of the energy savings associated with an EmPower NY project when the customer was referred by the utility.

For defined collaboratives in which the utility and NYSERDA offer complementary incentives, NYSERDA supports having each entity count the energy savings and related benefits, with mechanisms established to estimate dual reported savings (i.e., reported by both a utility and NYSERDA). For defined collaboratives in which the utility and NYSERDA jointly allocate resources to co-design and co-implement a pilot or new program, NYSERDA supports having both the individual utility and NYSERDA report up to the full amount of the resulting energy savings during the defined period of the pilot. For defined collaboratives in which the utility and NYSERDA pool resources, NYSERDA supports having the reported energy savings apportioned according to the financial resources budgeted and subsequently expended by each entity.

NYSERDA agrees with the Utilities' proposal that DPS Staff revise the Clean Energy Guidance Document CE-04: Layered Incentives Guidance to reflect that a regularly updated inventory of energy efficiency programs will be maintained on the Clean Energy Dashboard by NYSERDA, with each program administrator responsible for providing updates as needed for its portfolio, and to remove references to CEAC Working Groups and Steering Committee.

1. Discussion Regarding Collaborative Activities

In order for the State to ramp to these aggressive levels of achievement, collaboration and coordination among Program Administrators is not an aspirational nicety, but rather a necessity. Collaboration between utilities and NYSERDA is needed to make sure program offerings are complementary and not duplicative resulting in 'incentive-shopping' that ultimately increases costs to customers without any additional benefits. The Commission views this situation as distinct from leveraging multiple resources for greater savings, as both utility and

NYSERDA funds are provided by customers. Additionally, collaboration between electric and gas utilities will be necessary, due to the overlapping nature of gas and electric service territories, as the portfolios evolve to include more building envelope and heat pump installations.

The Utility Proposal did not describe a single collaboration structure that would be used in joint efforts with NYSERDA. Rather, it identified potential collaboration models that will continue to be explored as specific collaborative efforts are developed and pursued. Commenters are correct that this lacks detail. However, successful collaboration will be dependent on the specifics of the situation, including the outcome that is being sought after and the roles of the parties involved, and details will be dependent on those specifics. Furthermore, collaboration goes beyond mere coordination and involves a common goal or purpose. As such, collaboration need not be coordinated by a neutral third party.

No commenters objected to, and several parties supported, the Utility Proposal to avoid a predetermined cap on energy savings from joint NYSERDA efforts that may be counted toward utility achievements. NYSERDA proposes placing a cap at the portfolio level. In order to encourage collaboration, the Commission will not apply a per-partnership cap and will, instead, allow for agreements between NYSERDA and utilities to specify how savings claims will be reported on a case-by-case basis when partnerships are formed for specific programs or initiatives.

The Clean Energy Dashboard will be used to make public-facing program information available to stakeholders. Staff will revise the Clean Energy Guidance Document CE-04: Layered Incentives Guidance to reflect that the Utilities and NYSERDA shall regularly update the inventory of energy

efficiency programs and NYSERDA shall maintain it on the Clean Energy Dashboard.

Finally, NYSERDA raises a strong point regarding statewide studies and data sets to inform planning and evaluation. These studies – whether conducted by NYSERDA or a utility – are supported with customer funds. Eliminating duplication and overlap between NYSERDA and the Utilities will increase value for customers. Furthermore, statewide potential studies will be well suited to provide input into the design of energy efficiency initiatives that are undertaken by both NYSERDA and by the Utilities, and to inform State policy and planning processes including the CLCPA and the State Energy Plan.

Currently, NYSERDA is conducting a Commercial Statewide Baseline Study and a Residential Building Stock Assessment for New York State. These projects encompass a statewide energy efficiency potential study for the commercial and single-family residential sectors, respectively, which is expected to be published by early 2020 and will provide an assessment of the potential for additional energy efficiency opportunities in New York over the next three to ten years.

Despite the Utilities filing public comments in this proceeding citing the importance of potential studies and stating studies were being finalized or expected to be completed by Orange & Rockland, National Grid, and NYSEG/RG&E by December 2018, these studies have not materialized, with the exception of a National Grid's study filed on September 4, 2019, limited only to its upstate service territory.[52] Even in circumstances where

[52] Case 18-M-0084, supra, New York Utilities Comments Regarding New Efficiency New York White Paper (filed October 9, 2018). The utilities' comments also stated Con Edison and Central Hudson had recently completed potential studies in their service territories.

utilities have completed and filed potential studies, the studies result in varying levels of granularity, methods and analysis that often are not transparent, and assessments of differing time periods making it difficult to assess whether findings may vary due to substantive service-territory characteristics or fundamental approaches taken to the study.

Improved collaboration among NYSERDA and the Utilities, for future energy efficiency potential studies, is necessary to support a more efficient approach that is broadly transparent and useful to program administrators, stakeholders, and policy decision makers. Utilities have, in the past, indicated concerns that statewide studies may not produce the level of granularity that is required for their planning purposes. Consideration should be given to this issue in the design and output of the potential studies and balanced with the overall benefit of a more comprehensive approach.

To complement the Commercial Statewide Baseline Study and Residential Building Stock Assessment for New York State that NYSERDA will publish in 2020, and provide a more comprehensive market view statewide, NYSERDA, in consultation with the Utilities, Staff, and LIPA should supplement the ongoing work with data on multifamily and industrial energy efficiency potential and publish information on these sectors by the end of 2020.

NYSERDA, in consultation with the Utilities, Staff and LIPA, should undertake a comprehensive 2022 statewide potential study that encompasses both energy efficiency and electrification potential (2022 Statewide Energy Efficiency & Electrification Potential Study). The study must span the most prominent fuel types (electricity, natural gas, oil, and propane), building sectors (small residential, multifamily, commercial, industrial), and customer segments. NYSERDA shall

consult with the Utilities, Staff, and LIPA on the 2022 study approach and the methodologies used for estimating potential (e.g., potential scenario definitions, data collection, market characterization, and technology characterization). Each utility shall provide NYSERDA with data on a timely basis, as needed, to conduct the aforementioned studies.

NYSERDA is directed to issue the 2022 Statewide Energy Efficiency & Electrification Potential Study no later than June 1, 2022, which will allow for consideration in the planned Interim Review process. As appropriate to inform the design and planning of future State- and utility-administered energy efficiency initiatives, the study, or components thereof, may warrant interim updates but shall be conducted no less than every four years thereafter.

The Commission notes the Accelerated Efficiency Order described increased access to useful data and information as a critical market enabling mechanism in the case of energy efficiency. The level of ambition in the targets adopted in this Order will require innovative approaches, including the use of data in ways that appropriately balance privacy concerns with the rapidly changing energy marketplace. The Commission notes that, following substantial process, a number of issues have been addressed related to cybersecurity protocols and protections.[53] With this decision, the Commission expects progress to be made on the various data elements outlined in the Accelerated Efficiency Order, including a comprehensive

[53] Case 18-M-0376, Cyber Security Protocols and Protections in the Energy Market Place, Order Establishing Minimum Cybersecurity and Privacy Protections (issued October 17, 2019).

proceeding to assess the strategic use of customer energy usage data.[54]

H. Heat Pump Statewide Framework

The Accelerated Efficiency Order required the Utilities to work in consultation with NYSERDA to develop their heat pump program proposal, as well as a subsequent Implementation Plan that would contain a statewide framework to drive markets to scale and leverage the relative strengths of the Utilities and NYSERDA to enable market growth.[55]

The Accelerated Efficiency Order further stated NYSERDA, through the CEF, could address cross-cutting barriers (e.g., workforce development and consumer awareness) and provide numerous forms of assistance including: technical and financial; marketing, outreach and education; workforce training; quality assurance and measurement and valuation best practices; and community-scale assistance; as well as potentially take on certain program administrator functions as part of a uniform statewide approach. The Commission recognized the Utilities to be best positioned to target locational values, quantify non-participant customer benefits, and leverage customer relations to support market penetration.

The Utility Proposal identifies several programmatic elements, stating a commitment to strive towards a largely uniform program framework, including a common program manual, and deferring substantive details to the forthcoming Implementation Plan.

Parties offered substantial comments on the programmatic elements to be considered for the statewide heat pump program. AEA, Dandelion, EE Organizations, HeatSmart,

[54] Accelerated Efficiency Order at 41.

[55] Accelerated Efficiency Order at 63.

NYSERDA, and RHN all addressed, in varying levels of detail, the need for statewide consistency to enable growth in the heat pump market from both the customer and various market actor views. Parties recognize the proposal indicates a transition from the current program structure to the statewide framework, with utilities primarily responsible for the delivery of heat pump targets. NYSERDA comments that a utility-only Management Committee does not provide an adequate structure to support foundational program design and decision making to fully support the effort envisioned by the Commission.

AEA, Alliance for a Green Economy (AGREE), Heat Smart, NYSERDA, and RHN all call for a thoughtful transition that provides certainty to the marketplace during this phase, with NYSERDA commenting they are prepared to continue to deliver incentives for those utilities that may not be able to implement by January 1, 2020. NYSERDA and RHN comment that pursuing a NY-Sun declining block approach, at this time, would be premature given the need to have more in-field market experience in order to properly design such an effort.

The vast majority of parties call for clarity around customer and technology eligibility and processes for participation to be clearly articulated in the implementation plan, noting the Utility Proposal provided insufficient detail in many of these areas. Most parties specifically call for the Commission to clarify that existing gas customers will be eligible to receive incentives even though current customer economics would indicate they would be unlikely to pursue heat pump installations purely for financial reasons.

AEA, the City, EE Organizations, and RHN all comment on the importance of linking improvements to building shell with heat pump deployment.

RHN requests that the Utilities be directed to offer financing options to their customers to aid in reducing barriers to market adoption. AGREE and RHN call for a specific "Cash for Clunkers" approach to encourage customers with aged heating equipment to pursue heat pump adoption, as well as for the Commission to eliminate all customer supported oil-to-gas conversion programs.

NYGEO, RHN, the City and NYSERDA provide comments related to the need for HVAC contractor outreach and workforce training/development to enable the market to deliver at the scale and quality required.

NY-GEO, RHN, AEA, and EE Organizations all raise issues related to deficiencies with the current TRM arguing for updates to better reflect real-world savings achieved by heat pumps and more accurate standardized efficiencies to be developed.

NY-GEO avows that geothermal heat pumps have advantages over other heat pump technologies and are the most efficient and desirable solution to replacing fossil fuel heating. NY-GEO further asserts that, when geothermal heat pumps replace central air conditioning, room air conditioning or cold climate heat pumps, the geothermal installation will lower peak demand significantly, and as the need for air conditioning increases across the State, it would be advantageous for a maximum number of new and replacement installations to be geothermal. NY-GEO states current incentive levels targeted the 1-4 family residential market should be increased to build the market and consideration should be given due to the anticipated expiration of the federal tax credit. NY-GEO also supports NYSERDA conducting LMI-focused heat pump offerings and suggests specific pilot program ideas for consideration.

Energy Democracy Alliance (EDA) comments that electrification for LMI residents should be a priority, paired with energy efficiency, further stating that heat pump adoption in the LMI market segment should begin with the conversion of electric resistance heat to heat pumps.

NYSERDA comments that it will develop and fund an investment plan through the CEF to advance the adoption of heat pump technology in the LMI market segment by demonstrating heat pump solutions in various use cases, and will work with the Utilities and Staff to determine an appropriate deployment mechanism and funding source for any models that prove to be effective at increasing access to heat pump technology.

1. Discussion Regarding Heat Pump Statewide Framework

As previously noted, high efficiency building electrification is a critical component to enable the State to meet its overall climate and energy policy goals. Financial incentives to influence consumer decisions are necessary, but they must be combined with efforts that address non-financial barriers such as workforce constraints, lack of consumer awareness and confidence in the technology, supply chain development and technical constraints for larger buildings and for hydronic distribution systems. Furthermore, to reach the necessary scale, the State's programs must drive an increase in the capacity of heat pump providers and installers. Progress on all of these fronts is necessary across utility services territories, and NYSERDA is well positioned to advance initiatives to address these non-financial barriers through the CEF. Given the criticality and interdependence of the work across the Utilities and NYSERDA's market-enablement initiatives, the Commission directs all initiatives focused on building electrification to be integrated under one umbrella,

much like the state's successful focused deployment and market development efforts for solar photovoltaic, under NY-Sun.

As proposed by the Utilities, NYSERDA is also well positioned to develop heat pump solutions in the LMI market segment where consumer protections and energy affordability needs are paramount. At this time, a discrete percentage of the collective utility heat pump budgets will not be required to be allocated to dedicated LMI programs. Rather, the Commission accepts the proposal for NYSERDA to develop and test solutions, in consultation with the Utilities, that may be most impactful for this sector. Specifically, NYSERDA is directed to allocate $30 million under the CEF for these initiatives. This approach does not preclude utilities from providing incentives to the LMI sector. The performance and early results from these initiatives shall be considered in the Interim Review process established above to help inform an appropriate longer-term strategy. In developing the LMI-focused heat pump offerings, NYSERDA and the Utilities should consider program suggestions entered into the record in this proceeding.

The ability for New York to achieve the scale necessary will require a closely coordinated effort among utilities as well as NYSERDA. The utilities' proposed Joint Management Committee, which should focus on technical and operational aspects of program administration, must include the Electric Utilities responsible for the Statewide Heat Pump Program, as well as NYSERDA for its experience with existing programs and the market development functions necessary to support the Statewide Heat Pump Program, with Staff serving in

an oversight and consultative role.[56] The Joint Management Committee must also include periodic opportunities for stakeholder input and in particular should seek input from participants in the Performance Management and Improvement Process. The Joint Management Committee is expected to work in a collaborative manner to develop and maintain a common statewide program design, consistent with the direction provided in this Order.

The Utility Proposal stresses the need for utilities to retain flexibility at the program delivery level. The utilities' request for some level of flexibility is reasonable given the targets and budgets they are responsible for delivering. However, this flexibility must be balanced against the need for statewide consistency to avoid confusion among customers and market participants and to enable market growth statewide. The utilities are granted flexibility with regard to incentive levels so as to allow for variations among service territories and the ability to revise incentive levels based on in-field experience. Where market conditions are similar, utilities should look for opportunities to coordinate across service territories and establish similar incentive levels to streamline operation for solution providers and installers.

The Commission agrees with parties' comments supporting a thoughtful transition from existing heat pump programs to the Statewide Heat Pump Framework. The Utility Proposal articulates that not all utilities may be in a position

[56] Given the important role heat pump deployment can play in gas supply constrained areas, the Joint Management Committee shall, at a minimum, include consultation with gas utilities in supply-constrained areas. Further LIPA is encouraged to actively engage with the Joint Management Committee to align heat pump related activities under their control with that of the Statewide Heat Pump Program.

to complete this transition by January 1, 2020 and may have to explore the viability of continuing the existing NYSERDA incentive program, with updated incentives in that territory, to ensure a seamless transition.[57] A thoughtful transition must encourage utilities to expeditiously implement the statewide framework; however, it also must provide transparency and stability to active market participants. Electric utilities are directed to file a letter, within 30 days of this Order, indicating their readiness to implement the Statewide Heat Pump Program by April 1, 2020. NYSERDA will continue offering their current CEF Heat Pump Program in each utility service territory until such time as each utility-administered Heat Pump Program is launched. Utilities are directed to reimburse NYSERDA, from the heat pump budgets authorized herein, for all heat pump incentives paid by NYSERDA in their respective service territories for applications submitted after December 31, 2019 and before each utility's Heat Pump Program is launched.

The Commission rejects Niagara Mohawk's proposal to offer two separate programs during 2020. Offering two programs will further add to customer and market confusion; eliminating such confusion is one of the primary reasons for establishing the statewide program framework. Therefore, Niagara Mohawk shall comply with the established statewide framework for its Electric Heat Initiatives upon such time as the framework is implemented.

A large number of commenters called for the Commission to require a "Cash for Clunkers" program to provide support for those with very old heating systems to convert to heat pumps. The Commission will not require specific program marketing or

[57] Subsequent to the Utility Proposal, to avoid a gap in heat pump program activity, NYSERDA extended its Heat Pump Program through March 31, 2020.

designs as these are an integral component of a program administrator's role. However, the customer eligibility requirements discussed below along with customer economics would indicate those with very old heating systems are a natural market for early adoption.

Parties comments' regarding elimination of all gas expansion programs are outside the purview of this proceeding.

Regarding other program elements, the following guidelines are provided, with details to be addressed in the Statewide Heat Pump Program Implementation Plan or associated Program Manual.

- Customer Eligibility - All customer sectors, regardless of existing heating fuel, will be eligible for heat pump incentives, given they are not exempt from collection of funds supporting the program. All building vintages will also be eligible, including existing buildings and new construction.[58] Although the minimum targets and budgets authorized herein are developed primarily based on data for the small residential market, the Commission agrees with parties that all customers should have access to program incentives, including commercial and multi-family customers. Progress on electrification/heat pump applications in larger buildings will be necessary to achieve the State's climate and energy goals.
- Technology Eligibility – In consideration of NY-GEO's comments regarding the relative benefits ground source heat pumps may present in relation to other heat pump

[58] NYSERDA is expected to continue to offer a range of new construction programs to drive toward high-performing and net zero carbon buildings, utilities are directed to coordinate with NYSERDA in the new construction market to ensure that programs are well aligned and easy for customers to access.

technologies, the needs, economics, and housing characteristics of all consumers must be balanced. Air source heat pumps,[59] or air source heat pump water heaters, in some instances, may be the preferred alternative. In all instances, however, the Statewide Heat Pump Program should provide incentives only for systems that are designed to provide domestic hot water heating and/or both space heating and cooling; incentives should also be provided for commercial/industrial process systems that provide water heating and/or cooling. Systems may serve the whole building or a portion of the building thermal load. For systems that serve only a portion of the building load, additional requirements may be considered to ensure that the systems are used adequately, and for heating. The Statewide Heat Pump Implementation Plan and/or Program Manual should clearly articulate approaches the Utilities will undertake to emphasize and ensure the use of heat pumps for heating purposes, as well as establish necessary energy efficiency and coefficient of performance requirements, consistently applied throughout the state.

- Incentive Structure – At this time, the Utilities' proposal to provide incentives primarily as one-time rebate payments is accepted. This will result in an easily understandable approach to aid consumers in assessing the economics of

[59] With regard to Air Source Heat Pumps (ASHP), cold climate units only as listed on the Northeast Energy Efficiency Partnership (NEEP) Cold Climate Air Source Heat Pump (ccASHP) specification listing at time of installation will be eligible for incentives. Any exceptions to this requirement shall be stated in the Program Manual and shall be limited to product classes for which no NEEP-listed ccASHP products are commercially available.

installation of heat pump technologies.[60] Incentives can, and should, be differentiated among the various heat pump technologies, use cases, and size of installation (e.g., small-scale residential versus larger installations) so that incentive levels are geared towards the differing needs in the market. The Commission fully intends that incentive levels shall decline with time and volume, much as was done for solar incentives in the NY-Sun program. However, the Commission will not immediately order such a decline, in consideration of the near-term reduction in tax credits, likely to offset gains from near-term cost reductions, as well as in consideration of the value of additional market and industry information and need for a track record before doing so. Midstream incentives (e.g., targeting heat pump distributors) may prove an effective means to help transform the current market and may be considered by the Utilities within the budgets established herein. Midstream offerings may be most effective if implemented across service territories and given the market development role NYSERDA will be playing, should be developed in coordination with other utilities and NYSERDA to ensure maximum market impact across the state.

- Building Envelope Upgrades – Building shell upgrades may be incorporated with heat pump installations to allow for

[60] As noted in the Utility Proposal, Central Hudson and Orange & Rockland are required, under their existing rate plans, to provide a Geothermal Rate Impact Credit (and, for Orange & Rockland to also develop a Voluntary Three-Part Rate). Central Hudson and Orange & Rockland are directed establish a reasonable, primary upfront incentive payment for Ground Source Heat Pumps under the new statewide framework and continue to employ the Geothermal Rate Impact Credits (and Voluntary Three-Part Rate) along with the established upfront rebate for the duration of the respective rate plans.

proper sizing as well as to mitigate winter peak concerns as heat pumps are deployed at scale. Utilities should ensure that customers are advised on the importance of building shell improvements and available opportunities. However, the Commission declines to make this a program requirement at this time. As noted in the Utility Proposal, the mandatory incorporation of shell improvement with heat pumps would likely create burdens to customer adoption that, at this early stage of program development, may be difficult to overcome. However, utilities are encouraged to offer packaged incentives addressing both heat pump and envelope upgrades within the budgets authorized for the Statewide Heat Pump Program given a demonstration can be made that such packaged incentives provide overall benefit (e.g., supporting appropriate sizing).

- Quality Assurance and Quality Control Protocols – Quality assurance (QA) during the installation process and quality control (QC) after completion of the installation provide critical contributions towards building customer confidence and ensuring systems are operating as designed. The QA/QC process is also envisioned to further support more reliable savings estimates by supporting quality installations. The utilities' proposal to institute common QA/QC principles and protocols based upon the existing NYSERDA heat pump QA/QC protocols is accepted. Field experience may warrant refinement of these protocols to ensure objectives are being met at reasonable costs. It is paramount that the QA/QC process is standardized across the state, takes into consideration NYSERDA's experience in administering QA/QC under their existing Heat Pump Program, and assesses not only program compliance but the quality of workmanship and

system design. Based on their experience and expertise in this area, NYSERDA is directed to develop the QA/QC protocols for statewide use, in consultation with the Utilities and Staff. Ensuring adequate QA/QC during the transition period should be detailed in the Implementation Plan. Any refinements to the QA/QC protocols currently in place will be justified and documented in the Statewide Heat Pump Program Implementation Plan and/or Program Manual.

- Process for Making Ongoing Changes – The utilities and NYSERDA will establish a transparent and predictable process to be followed for making substantive changes to incentives and other program features, in order to increase market confidence and stability. The process will include notice and consultation with market participants prior to changes.
- Statewide Heat Pump Program Implementation Plan and Program Manual – Within 60 days of the issuance of this Order, the Electric Utilities and NYSERDA shall jointly file a single Statewide Heat Pump Program Implementation Plan that reflects the program goals and implementation strategies, along with an accompanying market-facing Program Manual. NYSERDA's knowledge and experience in developing the Renewable Heating and Cooling Policy Framework[61] and implementing a program under the CEF since early 2017 provides valuable insights, particularly with regards to eligibility criteria for technologies and system designs, installer certifications, best practices and QA/QC

[61] Renewable Heating and Cooling Policy Framework: Options to Advance Industry Growth and Markets in New York, February 7, 2017

protocols, and shall be incorporated into the Implementation Plan/Program Manual.

The Statewide Heat Pump Program Implementation Plan, to achieve the ordered level of heat pump deployment and for associated incentives and program elements, shall be developed in consultation with Staff and include, at a minimum, the following items:

1) Program Objectives;
2) Annual and Total Budget and Metrics;
3) Savings and Verification Methodology;
4) Incentive Details by Utility;
5) Customer Eligibility;
6) Technology Eligibility;
7) Contractor Qualifications and Training Requirements;
8) Workforce Development;
9) Program Delivery – Roles and Functions;
10) Customer Outreach & Education Plan;
11) Stakeholder Communication and Engagement Plan;
12) Quality Assurance/Quality Control Protocols and Approach;
13) Coordination Details;
14) Process for changes to substantive program elements;
15) Transition Related Details

The Director of the Office of Markets and Innovation will issue a letter of approval confirming compliance of the Implementation Plan with the provisions set forth in this Order or a letter of denial with justification and options to remedy. An annual filing of the Joint Implementation Plan will not be required at this time, however if material changes are

warranted, the Electric Utilities and NYSERDA shall consult with Staff and refile the Implementation Plan for approval.

The Electric Utilities and NYSERDA shall jointly file a Statewide Heat Pump Program Manual, with additional implementation details, concurrent with the Statewide Heat Pump Program Implementation Plan.[62] The Program Manual shall be developed in consultation with Staff with its primary function being a resource to installers and other relevant market participants as to the expectations and operation of the Statewide Heat Pump Program. Substantive changes to the Program Manual shall be implemented following consultation with Staff.

Given the importance of decarbonization of space heating and cooling to meet state climate goals, Staff, the Utilities, and NYSERDA should coordinate with LIPA to facilitate and ensure that heat pump deployment on Long Island is consistent with the statewide framework put forth in this Order.

2. Heat Pump Filing and Reporting Requirements

The Statewide Heat Pump Implementation Plan will serve as the primary filing requirement reflecting details of the Statewide Heat Pump Program Portfolio for all utilities and therefore this level of detail is not necessary in each utilities' SEEP filing. Additionally, due to the inter-related nature of these activities, the market-enabling support being implemented under various NYSERDA CEF Investment Plan filings should be outlined within the Statewide Heat Pump Implementation Plan. Staff is directed to work with the Utilities and NYSERDA to identify the information that should be included in the aforementioned filings.

[62] This could be a single program manual inclusive of all heat pump technologies or separate program manuals by technology as the current NYSERDA program has. However, each program manual should be statewide.

Staff is directed to work with the Utilities and NYSERDA to develop any necessary templates to facilitate quarterly reporting for each utility-administered heat pump program to be filed in DMM and reflected in the Clean Energy Dashboard.

The Electric Utilities and NYSERDA are directed to jointly file a Statewide Heat Pump Program Annual Report by April 1, 2021 and annually thereafter detailing the programs' performance through the previous calendar year and any substantive findings and planned areas for improvement.

I. Statewide Low- to Moderate-Income (LMI) Portfolio

The Accelerated Efficiency Order called for the development of a statewide customer supported LMI portfolio, inclusive of NYSERDA's LMI activities conducted under the CEF and utility administered programs, recognizing the unique strengths each entity can contribute towards improving services to this sector. The Accelerated Efficiency Order also required a minimum of 20% of the incremental energy efficiency funding under consideration in this proceeding to be allocated to dedicated LMI activities and indicated several features that should be considered, including increased use of direct-install approaches, community-based outreach and programming, and greater emphasis on multi-family buildings by directing 40% of incremental LMI program budgets to multifamily programs. Subsequent to the Accelerated Efficiency Order, the CLCPA enacted Section 66-p(6) of the Public Service Law requiring that the Commission ensure that, where practicable, at least 20% of investments in residential energy efficiency, including multi-family housing, be invested in a manner that will benefit disadvantaged communities, as defined pursuant to ECL 75-0101(5), including low- to moderate-income customers.

Substantial comments were received on the Statewide LMI Portfolio concept. All comments indicated support for a jointly developed Utility and NYSERDA Statewide LMI Portfolio, with many commenters noting the Utility Proposal lacked key implementation details and calling for additional opportunity for stakeholder input.

EE Advocates, AEA, EDA, and EEFA NY call for additional funding to be dedicated to the LMI Sector, ranging from an increase of the 20% of incremental funding to 40%, considering Commission authorized budgets as a floor and not a ceiling, to calling for pursuit of all cost-effective measures.

Additionally, while agreement of bifurcating the LMI portfolio from the Non-LMI Portfolio for Benefit Cost Analyses (BCA) purposes was noted, EE Advocates, along with AEA, would prefer the inclusion of non-energy benefits in addition to allowing for a BCA < 1.0.

EEFA NY, the City, NYSERDA and AEA support more targeted efforts at the affordable multifamily housing sector with attention being called to the Utility Proposal not addressing the Accelerated Efficiency Order directive to consider 40% of the incremental LMI funding to be targeted at the affordable multifamily housing sector. NYSERDA further states they are willing to remain the default LMI multifamily provider if one or more utility does not plan to offer a program in a given territory.

A number of detailed comments were received related to specific programmatic ideas or considerations, these included pilot program and community-wide initiative ideas; utilizing census tract information to broaden the identification of eligible customers; ensuring programs are designed to address utility-territory specific barriers; pursuit of innovative financing approaches; further development of an LMI income

verification process; and requiring commitment letters issued to building owners to aid in securing financing.

EEFA NY and NYSERDA support the development and use of the Customer Hub with NYSERDA commenting they are prepared to host and maintain the Customer Hub, provided active engagement and co-funding from the Utilities.

NYSERDA comments indicate its commitment to working collaboratively with the Utilities and further support the Utilities' proposal for an LMI Program Council, a statewide branding approach in conjunction with each utility's localized marketing, the possibilities for incremental funding being contributed by the Utilities to NYSERDA to expand reach of existing programs, and development and delivery of complementary programs.

EE Advocates do not support Con Edison's proposal to exclude their LMI Portfolio savings from its set of EAMs for incentivizing energy efficiency program performance based on concerns that it will result in insufficient prioritization of programs targeting this customer segment.

AEA, EEFA NY, and NYSERDA address various issues related to coordination both between the Utilities and NYSERDA, and the envisioned Statewide LMI Portfolio and other state entities providing services to this sector, namely the Division of Housing and Community Renewal (HCR) and the Office of Temporary and Disability Assistance (OTDA). Previous experiences related to the difficulty in utilities providing referrals to NYSERDA, with necessary customer data, was cited by EE Advocates as a consistent challenge that must be addressed to realize the vision of the Statewide LMI Portfolio. NYSERDA echoed challenges related to sharing customer data and further cited new requirements that have been placed upon NYSERDA by the

CLCPA requiring NYSERDA reporting of benefits in disadvantaged communities that must include utility-administered programs.[63]

EDA notes frustration with repeated requests for comments and input without, in their opinion, meaningful action or response on that input in other proceedings and hopes for a different outcome within this proceeding. EDA commends NYSERDA and DPS for holding a series of stakeholder forums in their communities and for clearly articulating the recommendations which they support, into a summary report. EDA notes with disappointment, despite a clear expectation that the Utilities would take up many of recommendations and develop them further into implementation plans in their March 31, 2019 filing, the Utilities failed to do so. EDA's comments include specific reference to ten of the forty-four recommendations contained in the summary report. Those not detailed elsewhere in this discussion include: leveraging the Utilities' bill discount programs for energy efficiency; development of a single point of entry for low-income assistance programs; and piloting of inclusive financing models to increase access to clean energy

[63] The Commission notes that the CLCPA directs the Commission to require both NYSERDA and the utilities "develop and report metrics for energy savings and clean energy market penetration in the low- and moderate-income market and in disadvantaged communities, as defined in article seventy-five of the environmental conservation law and post such information on the authority's website." While details will be further developed through the process established by CLCPA, it is anticipated that metrics to be reported may result from program activities, including but not limited to the LMI programs.

solutions among customers that face barriers to traditional lending.[64]

EEFA NY joins EDA in requesting meaningful opportunity for stakeholder input, including on the Utilities' implementation plans and during implementation. EDA requests public comment processes be more assessible to residents and that program administrators co-design program offerings with residents and communities. Further it is requested that when stakeholder input is not accepted, there is transparency as to the reason why. EEFA NY further provides recommendations for the elements that should be addressed in the implementation plan.

1. Discussion Regarding LMI Portfolio

The Utility Proposal was generally responsive to the requirements established in the Accelerated Efficiency Order; however, parties correctly observe that the proposal lacked sufficient implementation details.

The Commission reasserts its commitment to the development of a Statewide LMI Portfolio in this Order. A Statewide LMI Portfolio will improve access to programs, overall customer experience and impact for customers in this sector. To achieve this goal, a business as usual approach will not be adequate. Innovation in program designs and delivery must be pursued. Utilities and NYSERDA must maximize the impact of available resources and leverage existing program infrastructure to maximize cost reduction potential wherever possible. This

[64] EDA also commented the State should develop and provide assistance to enable local ownership of DER to facilitate local decision making, economic development, and maximizing benefits for lower-income or disadvantaged communities, arguing this will also help to make project siting less contentious and expensive. The Commission notes this is outside the purview of this proceeding.

should include streamlining program participation for LMI customers and affordable property owners, where possible. It will also be necessary to ensure program offerings are complementary and remove redundancy by leveraging the strengths and market reach of each program administrator.

The Commission supports the proposed Customer Hub to streamline access to initiatives among LMI customers and affordable property owners, as well as statewide branding operating in conjunction with localized marketing and customer outreach within each service territory. This will require resources and active support from both the Utilities and NYSERDA. The Utilities and NYSERDA are directed to develop a co-funding agreement and utilize past practice for allocating costs among utility companies to inform an appropriate cost-sharing approach. This approach will be detailed in the Statewide LMI Portfolio Implementation Plan. As the Customer Hub is implemented, NYSERDA and the Utilities should determine the feasibility of further utilizing it for streamlined access to other low-income assistance programs, including, but not limited to, the Weatherization Assistance Program.

The Utility Proposal acknowledges the significant opportunity that exists in affordable multifamily properties, noting differences among utility territories, but fails to explicitly address consideration of a 40% allocation of the incremental LMI funding to multifamily programs. Given the large percentage of LMI households residing in multifamily properties, the Commission places a high priority on ensuring that adequate and appropriate resources are directed towards the affordable multifamily buildings sector. Therefore, NYSERDA and the Utilities are directed to detail, in the Statewide LMI Implementation Plan, funding allocations that will achieve the

collective 40% allocation of incremental LMI funding to multifamily programs.[65]

The Utility Proposal notes Con Edison, National Grid, and NYSEG/RG&E's existing programs and infrastructure that has been developed targeting the affordable multifamily building sector and proposes they continue with NYSERDA serving as the default provider elsewhere as well as offering complementary efforts to address market barriers. In order to increase adoption of energy efficiency and drive energy savings in this sector, it is clear a prescriptive rebate approach will not be adequate. The Utilities and NYSERDA are directed to develop a complementary set of offerings that include: (a) incentives to enable comprehensive energy efficiency retrofits and achievement of deeper energy savings; and (b) support for predevelopment assistance and other forms of technical assistance for building owners and managers. The Utilities and NYSERDA should work with market participants such as affordable housing agencies, financiers, and trade associations to ensure that program offerings are developed and administered to maximize impact, including, where possible, leveraging the refinancing capital budget cycles common in affordable housing.

The Utility Proposal, as well as some parties' comments, support NYSERDA's role in conducting income verification at the individual customer level and for informing utilities of income eligible customers who may participate in the LMI Portfolio. The Commission finds centralizing this function with NYSERDA is a sensible approach that may result in

[65] Variations in housing stock throughout utility service territories is noted and this requirement is placed at the statewide portfolio level. Multifamily housing stock by utility area should be considering in determining individual utility budgets dedicated to the multifamily sector.

administrative efficiencies. NYSERDA is directed to work with Staff to effectuate this implementation and to involve its agency partners from the Low Income Task Force.[66] This approach, however, will require data sharing between the Office of Temporary and Disability Assistance, NYSERDA, and the Utilities. This too will require a level of data sharing of utility program performance data with NYSERDA that has not previously been required. NYSERDA and the Utilities are directed to update their standard data security MOU to reflect these requirements.[67]

With regard to comments regarding leveraging bill discount programs for energy efficiency and piloting inclusive financing models, the Commission notes these areas are currently being assessed by NYSERDA and the Utilities.

The Utilities and NYSERDA must solicit and respond to stakeholder input in the development and administration of the Statewide LMI portfolio. As recognized by EDA, in the course of this proceeding, DPS and NYSERDA have conducted extensive stakeholder engagement to solicit input on the LMI portfolio and opportunities to increase the impact of LMI clean energy initiatives. Results of this engagement are outlined in the LMI Stakeholder Summary Report and the subsequent Assessment of Input from LMI Stakeholder Forums. The breadth of the comments received demonstrates the challenges experienced in serving this sector, as some recommendations are beyond the jurisdiction of the Commission and beyond the scope of the Utilities or NYSERDA.

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[66] Case 14-M-0565, Proceeding on Motion of the Commission to Examine Programs to Address Energy Affordability for Low Income Utility Customers, Order Adopting Low Income Program Modifications and Directing Utility Filings (issued May 20, 2016) at pages 9, 16 and 42.

[67] See Cases 14-M-0094 et al., Proceeding on Motion of the Commission to Consider a Clean Energy Fund, Order Regarding New York State Energy Research and Development Authority Data Access and Legacy Reporting (issued January 17, 2019).

While many of those recommendations cannot be directly acted upon in this proceeding, the Commission takes note of these items and directs Staff to raise these complementary issues in its role on the Interagency LMI Task Force.

Given the collaboration necessary, an LMI Management Committee will be established, made up of representatives from the Utilities and NYSERDA. Staff will serve in an oversight and consultative role. The LMI Management Committee is directed to include a mechanism for obtaining stakeholder input on a regular basis, and no less frequently than twice per year.

Within 120 days of the issuance of this Order, the Utilities and NYSERDA shall jointly file a single Statewide LMI Portfolio Implementation Plan that reflects the program goals and implementation strategies. The Plan shall be developed in consultation with Staff and include, at a minimum, the following items:

1) Statewide LMI Portfolio Objectives;
2) Budgets and Metrics;
3) Program Offerings;
4) Roles and Responsibilities
5) Customer Outreach and Engagement;
6) Transitional Issues, Including Schedule of Implementation Milestones;[68]
7) Co-funding Arrangements;
8) LMI Management Committee;
9) Evaluation, Measurement & Verification Approach;

[68] The Commission acknowledges that it will take time to develop new offerings and does not expect that new offerings will necessarily be made available immediately. However, the utilities and NYSERDA are directed to implement new approaches as soon as possible.

10) Investment of budgets in compliance with the CLCPA requirements for energy efficiency funds, as applicable; and

11) Preliminary Benefit Cost Analysis.[69]

Given the lack of detail in the Utility Proposal, additional opportunities for stakeholder input will be required. The Utilities and NYSERDA are directed to conduct at least three regional sessions throughout the State to present the key elements of the Statewide LMI Portfolio under development and solicit stakeholder and market participant feedback to be considered as the Statewide LMI Portfolio Implementation Plan is finalized for initial filing.

The Director of the Office of Markets and Innovation shall issue a letter of approval, in a timely manner, confirming compliance of the Statewide LMI Portfolio Implementation Plan with the provisions set forth in this Order or a letter of denial with justification and options to remedy.

2. LMI Portfolio Filing & Reporting Requirements

The annual Statewide LMI Portfolio Implementation Plan will serve as the primary filing requirement reflecting details of the Portfolio for all utilities and NYSERDA and therefore this level of detail is not necessary in each utilities' SEEP or NYSERDA's CEF Investment Plan filings. For transparency, however, Staff is directed to work with the Utilities and NYSERDA to identify budget and target information that should be included in the aforementioned filings.

Staff is directed to work with the Utilities and NYSERDA to develop any necessary templates to facilitate

[69] The Commission acknowledges BCA analysis conducted at this initial stage shall be considered preliminary and be refined as program offerings are further developed.

quarterly reporting for Statewide LMI Portfolio to be filed in DMM and reflected in the Clean Energy Dashboard.

The Utilities and NYSERDA are directed to jointly file a Statewide LMI Program Annual Report by April 1, 2021 and annually thereafter detailing the programs' performance through the previous calendar year and any substantive findings and planned areas for improvement. On an annual basis, the Utilities and NYSERDA, in consultation with Staff, will conduct a minimum of two sessions to review the Statewide LMI Portfolio's performance and planned areas of improvement to solicit input from stakeholders and market participants. In the event substantive changes are required to the Statewide LMI Portfolio Implementation Plan, the Utilities and NYSERDA shall refile the Implementation Plan for approval by the Director of the Office of Markets and Innovation.

Public Service Law Section 66-p(6), enacted as part of the CLCPA, requires that the Commission ensure that, where practicable, at least 20% of investments in residential energy efficiency, including multi-family housing, be invested in a manner that will benefit disadvantaged communities, as defined pursuant to ECL 75-0101(5), including low to moderate income customers. PSL 66-p(7)(c) further requires that, in allocating customer funds for clean energy, the Commission direct NYSERDA to develop and report metrics for energy savings and market penetration in the LMI sector and in disadvantaged communities.

The program budgets established in this Order are not divided by sector and therefore there is no specific residential budget. However, as 20% of the total incremental energy efficiency funding in this Order is allocated to LMI programs, and as some of the non-LMI funds are expected to be used for non-residential sectors, this Order allocates more funding than PSL §66-p(6) requires to LMI customers. As the identification

of disadvantaged communities will be performed by the Climate Justice Working Group pursuant to ECL Sec. 75-0111, it is not currently possible to identify the total amount of funding or benefits that will accrue to disadvantaged communities. Consistent with PSL §66-p(7) and supported by data from program administrators, NYSERDA is directed to track and report on resources allocated to LMI customers and to develop and update its tracking mechanism as further information becomes available regarding the identification of disadvantaged communities. The Commission will monitor these developments to ensure that the program is on track to meet the statutory requirement, and will make adjustments if needed, including through the Interim Review process established above.

J. Earnings Adjustment Mechanisms

The Utility Proposal suggests that because all utilities are on different rate case cycles, the Commission's most efficient course of action would be to provide each utility flexibility to propose EAMs consistent with the principles already established in the Accelerate Efficiency Order.

AEA comments that there should be some degree of consistency in the metrics across utilities and recommends that the Commission direct an exploration of an EAM for rewarding progress in serving low- and moderate-income populations beyond the 20% of funds required under the Accelerated Efficiency Order. Additionally, it recommends that utilities should be required to track progress in serving the LMI population and that this tracking should distinguish between low- and moderate-income populations.

EE Advocates recommends that the Commission should establish EAMs consistently across the state, in order to apply best practices state-wide, reduce confusion, enable stakeholder input, and maximize the value of EAMs, with the result being a

core set of EAMs to be adopted by all the Utilities. It suggests that Con Edison's currently proposed EAMs, which included three fuel-neutral measures and incorporated shared cost savings and lifetime energy savings considerations, could serve as basis for the set to be adopted by all utilities with some refinement.

EE Advocates expresses concern that Con Edison's peak reduction EAM appears to be unnecessarily complicated and does not include a gas peak reduction measure. It also indicates that several of Con Edison's EAMs overlap, that they exclude LMI, and that they suggest a stepwise incentive formulation, rather than a continuous one, providing discontinuous incentives that cut-off at a maximum level of performance.

EE Advocates recommends that EAMs should be clearly tied to policy goals, unambiguously defined, and easily quantifiable, and that EAM targets should be calibrated to ensure that attainment is largely free of outside influence. It recommends setting incentive formulas consistent with the desired outcome that use continuous, rather than stepwise incentive formulas, without ceilings, and requiring that program investments be cost-effective in order to qualify for incentive earnings. It further recommends that the Commission establish a set of EAMs in a generic docket, with additional EAMs possible if warranted. It proposes the following as the eight core EAMs: Annual MMBtu, Electric Peak Reduction, Gas Peak Reduction, GHG Emissions Reduction, Electric DER Utilization, Share the Savings, Low Income and Moderate Income.

EDA comments that the Commission should incentivize and hold the Utilities accountable with penalties if necessary, for achieving affordability outcomes.

MI agrees with a requirement that EAMs not impose any additional costs on customers and, instead, be limited to

saving-sharing mechanisms. While suggesting that EAMs may not be necessary in this context, MI proposes that EAMs be limited to exemplary performance that is in excess of Commission-established goals and that subpar performance should be penalized. MI also expresses concern regarding informational asymmetries associated with energy efficiency EAMs because a utility could propose cost-sharing targets that require little to no effort to achieve.

The City expresses concern with the redundancy of some EAMs and proposes an alternative performance-based ratemaking incentive mechanism in which benefits are shared between customers and shareholders. The City contends that the primary benefit of such a system is the elimination of limits on annual positive revenue adjustment that may inhibit Con Edison's efforts by deterring more extensive actions in achieving energy efficiency.

The City also expresses concern regarding the continued use of outcome-based incentives. The City notes that, ideally, outcome-based incentives should encourage utilities to undertake market transformation efforts to encourage energy efficiency, but that in practice, they are prone to reward shareholders for results achieved not by direct company actions, but independently through customer behavior. Accordingly, the City supports moderate, focused, and non-duplicative shareholder incentives designed to directly foster utility actions and advance policy goals.

1. Discussion Regarding EAMs

The fundamental purpose of EAMs is to focus management attention on and reward superior outcomes. This is complicated in practice by the range of outcomes desired from efficiency programs. These include reduced energy usage, minimizing costs to customers, achieving deeper savings, maximizing societal

benefits, and others. A single metric cannot capture all desired outcomes, both statewide and service territory specific, while accounting for continued evolution of policies and goals. More than one metric will be needed to indicate success and reward utilities for achievements above and beyond normal expectations. However, too many metrics can create confusion and potentially thwart innovation and achievement. A balance must be sought, to optimize the combination of metrics in the simplest and most effective manner.

The Accelerated Efficiency Order stated that EAMs should be funded via cost savings within the budgets authorized. However, taken strictly in certain cases this can have the effect of limiting the achievements of highly effective programs. Where a program is achieving excellent results at below-budgeted levels, a cap on EAMs within the original budget level should not have the effect of capping the implementation of the program. Where program targets can be exceeded at per-unit costs that are beneath, or consistent with, the assumptions in the original budget, EAMs may be derived from other funding sources within the utility rate plan. The framework adopted in the Accelerated Efficiency Order prioritizes cost reduction and lifetime savings while achieving aggressive targets. A degree of flexibility is needed in developing future EAMs, in order to avoid deterring high achievement in the most successful programs as well as to balance overall policy objectives.

Within rate proceedings, utility-specific issues may arise that warrant adjustments to EAMs established in prior rate plans. The current approach is to shape EAMs in individual cases, while maintaining uniformity and continuity to the extent possible. This approach will be continued, at this time. As in-field experience with EAMs continues to grow, metrics for EAMs will continue to be refined and approaches to enhance

efficiency and effectiveness of EAMs will be examined. This is expected to include EAM metrics that will balance the multiple policy objectives being sought, including metrics associated with the delivery of the Statewide LMI Portfolio.

K. Technical Reference Manual

RHN, EE Organizations, EEFA NY, AEA, and EE Advocates comment on what they perceive to be deficiencies of the current TRM. These include, its inability to support the development of synergistic packages of energy efficiency measures; the lack of protocols for calculating savings associated with fossil fuel conversions; barriers to program design and cost effectiveness due to code minimum retrofit baseline assumptions; and the lack of opportunity for meaningful and timely input from energy efficiency stakeholders to be incorporated into updating of the TRM. AEA further comments that New York should be working on adopting open-source technologies such as the U.S. Department of Energy supported EnergyPlus and OpenStudio. EE Advocates similarly comments recommending the Utilities should be directed to work with NYSERDA and the TRM Committee to investigate opportunities for implementing a modern framework of open-source standardized simulation-based calculation methods supporting an expanding range of state-of-the-art energy efficiency technologies.

1. Discussion Regarding TRM

The use of a TRM to provide a standardized approach for measuring program energy savings across various program administrators has been an effective tool in New York as well as many other jurisdictions. Its primary focus, however, is to provide prescriptive energy savings calculations and assumptions, at the measure level, for estimating energy and demand savings. The prescriptive approach is an alternative to custom energy modeling and often is an effective means to lower

the cost of program implementation, particularly for many mass-market efficiency measures. This approach, however, may be limiting for more complex energy efficiency applications. Custom analysis using simulation and/or modeling of the energy savings potential is not prohibited by the TRM; this approach is described in Category 4 – Whole Building Analysis in the Custom Measure section of the TRM.

Given the nature of the TRM as the foundational tool for calculating savings for the energy efficiency programs, the Commission agrees further action should be pursued to ensure transparency of the TRM revision process and consider input from stakeholders regarding areas for improvement.

The Commission believes efforts would be best served through technical discussions and collaboration with industry stakeholders. The Utilities are directed to hold, at a minimum, two technical conferences with participation from NYSERDA, outside stakeholders, and industry professionals. Participants shall be invited to bring forth specific proposals for areas of improvement. Staff is directed to serve in a consultative and oversight role. The Utilities shall file a summary report compiling recommendations received, status of implementation, or justification for not pursuing by October 1, 2020.

L. Reporting Time Frame

The Utilities' request to extend the due date of the quarterly scorecard report filing from the current 45-day post-quarter end to 60-day post-quarter end is granted. As the scorecard reporting is now supporting uploads to the Clean Energy Dashboard across all program administrators, the 60-day post-quarter time frame shall also be applied to NYSERDA CEF quarterly reporting to allow for all information utilized by the Clean Energy Dashboard to be consolidated on the same schedule.

VI. STATE ENVIRONMENTAL QUALITY REVIEW ACT

On October 24, 2014, the Commission issued a Draft Generic Environmental Impact Statement relating to REV and the CEF for comment, which included specific consideration and analysis related to increased energy efficiency activity as part of REV and the CEF. Fifteen comments were received, and on February 6, 2015 the Commission adopted the Final Generic Environmental Impact Statement. In accordance with the State Environmental Quality Review Act, a Findings Statement prepared by the Commission as lead agency in this action is attached to this Order as Appendix F.

CONCLUSION

The need to address climate change, evolve the utility system, and ensure that customers continue to receive safe and reliable service at just and reasonable rates demands ambitious clean energy goals and aggressive action to meet those goals. The energy efficiency and electrification portfolios authorized in this Order will contribute substantially towards meeting New York's clean energy goals. This Order allocates budgets of $892 million to electric energy efficiency, $552 million to gas energy efficiency, and $454 million to heat pumps, incremental to the baseline budgets of $986 million for electric energy efficiency and $326 million for gas energy efficiency, through 2025. This will result in total achievement of at least 53 TBtu of energy savings by 2025. Substantial benefits will be created for the environment, the utility system, energy efficiency and heat pump participants, and utility customers. The determinations made in this Order will drive cost-effective spending, support achievement of the State's goals, and ensure that the benefits of energy efficiency are available to all New Yorkers.

The Commission orders:

1. Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., KeySpan Gas East Corporation, The Brooklyn Union Gas Company, National Fuel Gas Distribution Corporation, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation (collectively, the Utilities) shall conduct energy efficiency programs consistent with the discussion in this Order and its appendices.

2. The Utilities are directed to reflect the energy efficiency targets and budgets authorized herein in an updated System Energy Efficiency Plan (SEEP) filing, consistent with this Order.

3. The Utilities shall incorporate the energy efficiency targets and budgets authorized in this Order in their quarterly scorecard reporting, which shall be filed with the Commission and reflected in the Clean Energy Dashboard maintained by the New York State Energy Research and Development Authority (NYSERDA).

4. Consistent with this Order, a utility may shift funds between years and between programs within a portfolio. In addition, a utility may shift funds among its electric, gas, and heat pump targets if it demonstrates that after the shift it will still meet the targets for the portfolio from which funds are being transferred.

5. Within 60 days of the issuance of this Order, the Electric Utilities and NYSERDA shall jointly file a single Statewide Heat Pump Program Implementation Plan and accompanying Program Manual consistent with this Order. The Director of the Office of Markets and Innovation will issue a letter of approval confirming compliance of the Implementation Plan with the

provisions set forth in this Order or a letter of denial with justification and options to remedy. To make material changes to the Implementation Plan, the Electric Utilities and NYSERDA may make a joint filing of the revised Implementation Plan for review by the Director of the Office of Markets and Innovation for compliance with the provisions set forth in this Order.

6. Within 120 days of the issuance of this Order, the Utilities and NYSERDA shall jointly file a single Statewide low- to moderate-income (LMI) Portfolio Implementation Plan consistent with this Order. At least three regional information sessions throughout the State must be held in advance of filing to present the key elements of the Statewide LMI Portfolio under development and solicit stakeholder and market participant feedback. The Director of the Office of Markets and Innovation will issue a letter of approval confirming compliance of the Implementation Plan with the provisions set forth in this Order or a letter of denial with justification and options to remedy. To make material changes to the Implementation Plan, the Utilities and NYSERDA may make a joint filing of the revised Implementation Plan for review by the Director of the Office of Markets and Innovation for compliance with the provisions set forth in this Order.

7. The Utilities and NYSERDA shall file quarterly reports regarding their energy efficiency programs and the Clean Energy Fund, respectively, within 60 days of the end of each quarter.

8. Department of Public Service Staff (Staff) shall revise the Clean Energy Guidance Document CE-04: Layered Incentives Guidance consistent with this Order.

9. Department of Public Service Staff (Staff) shall revise the Clean Energy Guidance Document CE-02: ETIP/SEEP Guidance consistent with this Order.

10. The Electric Utilities and NYSERDA shall jointly file a Statewide Heat Pump Program Annual Report by April 1, 2021 and annually thereafter, detailing the programs' performance through the previous calendar year and any substantive findings and planned areas for improvement.

11. The Utilities and NYSERDA shall jointly file a Statewide LMI Program Annual Report by April 1, 2021 and annually thereafter detailing the programs' performance through the previous calendar year and any substantive findings and planned areas for improvement. On an annual basis, the Utilities and NYSERDA, in consultation with Staff, will conduct a minimum of two sessions to review the Statewide LMI Portfolio's performance and planned areas of improvement to solicit input from stakeholders and market participants.

12. Consistent with Public Service Law §66-p(7) and supported by data from utility program administrators, NYSERDA is directed to track and report on resources allocated to LMI customers and to develop and update its tracking mechanism as further information becomes available regarding the identification of disadvantaged communities.

13. The Utilities and NYSERDA shall work together to develop a Customer Hub to streamline access to initiatives among LMI customers and affordable property owners, as well as a statewide branding operating in conjunction with localized marketing and customer outreach within each service territory, consistent with the discussion in this Order.

14. The Utilities and NYSERDA shall develop the necessary processes and agreements for NYSERDA to conduct income verification for participation in LMI programs, consistent with the discussion in this Order.

15. The Electric Utilities and NYSERDA shall convene a Heat Pump Joint Management Committee, as discussed in this Order, with Staff serving in an oversight and consultative role.

16. The Utilities and NYSERDA shall convene an LMI Management Committee, as discussed in this Order, with Staff serving in an oversight and consultative role, which shall include a mechanism for obtaining stakeholder input on a regular basis, and no less frequently than twice per year.

17. Staff shall initiate a Performance Management and Improvement Process, as discussed in this Order, within 90 days of the issuance of this Order.

18. The Utilities shall hold at least two technical conferences regarding potential improvements to the Technical Resource Manual and shall file a summary report compiling recommendations received, status of implementation, or justification for not pursuing by October 1, 2020.

19. Consistent with the discussion in this Order, each utility is authorized to use its unspent energy efficiency funds to fund the activities authorized in this Order.

20. NYSERDA shall transfer all available uncommitted and unspent NYSERDA Energy Efficiency Portfolio Standard (EEPS) Gas funds to each utility concurrent with its filing of the Financial Reconciliation Report related to those funds, allocated to each of the gas utilities proportional to its respective share of the original collections. Each utility shall account for these funds as a regulatory liability in an interest-bearing account to be applied in a manner consistent with utility unspent funds as described herein.

21. After a utility has exhausted unspent energy efficiency funds, any balance resulting from energy efficiency spending by that utility in compliance with this Order may be

deferred for future recovery, with carrying charges accrued at the Other Customer Provided Capital Rate.

22. Within 30 days of the issuance of this Order, Staff shall provide finalized revisions to measures and associated appendices to document the savings attributable to heat pumps consistent with the analysis discussed in this Order, to the Technical Resource Manual Management Committee.

23. The Utilities, through the Technical Resource Manual Management Committee, are directed to incorporate the finalized measure and appendices revisions provided by Staff into the Technical Resource Manual no later than two weeks upon receipt, with an immediate effective date. This filing will be made in Matter 15-01319, In the Matter of the New York State Technical Resource Manual.

24. Within 30 days of the issuance of this Order, the Electric Utilities shall file a letter indicating their readiness to implement the Statewide Heat Pump Program by April 1, 2020.

25. NYSERDA will continue offering their current Heat Pump Program as part of the Clean Energy Fund in each utility service territory until such time as each utility-administered Heat Pump Program is launched. Each utility shall reimburse NYSERDA, from the heat pump budgets authorized in this Order, for all heat pump incentives paid by NYSERDA in its service territory for applications received after December 31, 2019 and before the launching of that utility's Heat Pump Program.

26. NYSERDA is directed to allocate at least thirty million dollars to LMI heat pump programs as part of the Clean Energy Fund.

27. NYSERDA shall publish, in 2020, the Commercial Statewide Baseline Study, Residential Building Stock Assessment

for New York State, and information on energy efficiency potential in the multifamily and industrial sectors.

28. Staff shall direct a statewide evaluation, measurement, and verification (EM&V) study of heat pump activities, in consultation with the Utilities, NYSERDA, and stakeholders, to be completed by June 1, 2022. Costs of the study shall be co-funded by the Electric Utilities' heat pump programs and NYSERDA's Clean Energy Fund.

29. NYSERDA, in consultation with the Utilities, Staff, and the Long Island Power Authority, shall complete and file a Statewide Energy Efficiency & Electrification Potential Study no later than June 1, 2022, consistent with the discussion in the body of this Order. Each utility shall provide NYSERDA with data on a timely basis, as needed, to conduct the Study.

30. Staff shall commence a formal interim review of the programs, budgets, and targets authorized in this Order in 2022 for Commission consideration in 2023, consistent with the discussion in this Order.

31. In the Secretary's sole discretion, the deadlines set forth in this order may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least one day prior to the affected deadline.

32. This proceeding is continued.

By the Commission,

(SIGNED) MICHELLE L. PHILLIPS
Secretary

Appendix A - Table A1

2021-2025 NE:NY Incremental Electric Budgets and Targets

	2021	2022	2023	2024	2025	Total
Central Hudson						
Non-LMI Electric Budget	$ 815,819	$ 1,454,067	$ 2,166,664	$ 2,788,614	$ 4,365,419	$ 11,590,583
Non-LMI Electric MWh Target	5,646	9,369	13,060	15,791	23,307	67,174
LMI Electric Budget	$ 63,233	$ 112,345	$ 169,517	$ 220,325	$ 345,018	$ 910,438
LMI Electric MWh Target	110	195	294	382	598	1,579
Total NENY Electric Budget	$ 879,053	$ 1,566,412	$ 2,336,181	$ 3,008,939	$ 4,710,437	$ 12,501,021
Total NENY Electric MWh Target	5,756	9,564	13,354	16,173	23,905	68,753
MMBtu-equivalent Electric MWh Target	19,639	32,633	45,566	55,182	81,565	234,586
Con Edison						
Non-LMI Electric Budget	$64,695,609	$ 82,002,525	$104,629,642	$127,411,994	$164,853,493	$543,593,263
Non-LMI Electric MWh Target	239,199	303,188	386,848	471,081	609,514	2,009,830
LMI Electric Budget	$ 5,863,662	$ 7,552,448	$ 9,649,673	$ 11,738,531	$ 14,923,397	$ 49,727,711
LMI Electric MWh Target	10,171	13,100	16,738	20,361	25,885	86,255
Total NENY Electric Budget	$70,559,271	$ 89,554,974	$114,279,315	$139,150,525	$179,776,889	$593,320,974
Total NENY Electric MWh Target	249,370	316,288	403,585	491,442	635,399	2,096,085
MMBtu-equivalent Electric MWh Target	850,851	1,079,176	1,377,033	1,676,800	2,167,981	7,151,841
Niagara Mohawk						
Non-LMI Electric Budget	$ 6,627,708	$ 12,123,855	$ 21,014,682	$ 29,097,253	$ 38,812,502	$107,676,000
Non-LMI Electric MWh Target	38,126	69,743	120,887	167,382	223,269	619,408
LMI Electric Budget	$ 538,196	$ 990,803	$ 1,713,758	$ 2,410,623	$ 3,246,699	$ 8,900,079
LMI Electric MWh Target	934	1,719	2,973	4,181	5,632	15,438
Total NENY Electric Budget	$ 7,165,904	$ 13,114,659	$ 22,728,441	$ 31,507,875	$ 42,059,201	$116,576,079
Total NENY Electric MWh Target	39,060	71,461	123,860	171,564	228,901	634,845
MMBtu-equivalent Electric MWh Target	133,271	243,826	422,610	585,375	781,010	2,166,092
NYSEG						
Non-LMI Electric Budget	$ 6,742,851	$ 11,065,191	$ 18,326,723	$ 26,625,616	$ 36,653,446	$ 99,413,828
Non-LMI Electric MWh Target	36,076	59,202	98,053	142,454	196,106	531,891
LMI Electric Budget	$ 569,704	$ 909,496	$ 1,476,762	$ 2,123,168	$ 2,902,533	$ 7,981,663
LMI Electric MWh Target	988	1,578	2,562	3,683	5,035	13,845
Total NENY Electric Budget	$ 7,312,555	$ 11,974,688	$ 19,803,485	$ 28,748,785	$ 39,555,979	$107,395,491
Total NENY Electric MWh Target	37,064	60,779	100,614	146,137	201,140	545,735
MMBtu-equivalent Electric MWh Target	126,463	207,379	343,296	498,619	686,291	1,862,048
O&R						
Non-LMI Electric Budget	$ 1,360,121	$ 2,040,181	$ 2,380,211	$ 2,686,238	$ 2,789,948	$ 11,256,699
Non-LMI Electric MWh Target	7,410	11,115	12,968	14,635	15,200	61,329
LMI Electric Budget	$ 163,825	$ 239,184	$ 305,818	$ 372,391	$ 420,021	$ 1,501,239
LMI Electric MWh Target	284	415	530	646	729	2,604
Total NENY Electric Budget	$ 1,523,945	$ 2,279,365	$ 2,686,029	$ 3,058,630	$ 3,209,968	$ 12,757,937
Total NENY Electric MWh Target	7,694	11,530	13,498	15,281	15,929	63,933
MMBtu-equivalent Electric MWh Target	26,253	39,341	46,056	52,139	54,349	218,138
RG&E						
Non-LMI Electric Budget	$ 3,975,994	$ 5,963,991	$ 8,614,654	$ 12,093,649	$ 15,655,478	$ 46,303,767
Non-LMI Electric MWh Target	22,276	33,414	48,264	67,756	87,711	259,421
LMI Electric Budget	$ 330,020	$ 501,410	$ 737,660	$ 1,027,151	$ 1,331,090	$ 3,927,330
LMI Electric MWh Target	572	870	1,280	1,782	2,309	6,812
Total NENY Electric Budget	$ 4,306,014	$ 6,465,401	$ 9,352,315	$ 13,120,801	$ 16,986,567	$ 50,231,098
Total NENY Electric MWh Target	22,848	34,284	49,544	69,537	90,020	266,233
MMBtu-equivalent Electric MWh Target	77,958	116,975	169,044	237,262	307,148	908,387
Total Electric Portfolios						
Non-LMI Electric Budget	**$84,218,102**	**$114,649,811**	**$157,132,577**	**$200,703,365**	**$263,130,285**	**$819,834,140**
Non-LMI Electric MWh Target	**348,734**	**486,031**	**680,080**	**879,099**	**1,155,107**	**3,549,052**
LMI Electric Budget	**$ 7,528,640**	**$ 10,305,687**	**$ 14,053,188**	**$ 17,892,189**	**$ 23,168,756**	**$ 72,948,461**
LMI Electric MWh Target	**13,059**	**17,876**	**24,376**	**31,035**	**40,187**	**126,532**
Total NENY Electric Budget	**$91,746,741**	**$124,955,498**	**$171,185,766**	**$218,595,554**	**$286,299,041**	**$892,782,600**
Total NENY Electric MWh Target	**361,792**	**503,907**	**704,456**	**910,134**	**1,195,294**	**3,675,584**
MMBtu-equivalent Electric MWh Target	**1,234,436**	**1,719,330**	**2,403,605**	**3,105,377**	**4,078,345**	**12,541,093**

Appendix A - Table A2

2021-2025 NE:NY Incremental Gas Budgets and Targets

	2021	2022	2023	2024	2025	Total
Central Hudson						
Non-LMI Gas Budget	$ 27,290	$ 43,865	$ 93,562	$ 149,051	$ 234,824	$ 548,593
Non-LMI Gas Target	1,937	2,898	5,783	8,655	12,857	32,130
LMI Gas Budget	$ 147,544	$ 262,138	$ 395,540	$ 514,091	$ 805,043	$ 2,124,356
LMI Gas Target	1,366	2,427	3,662	4,759	7,453	19,666
Total NENY Gas Budget	$ 174,835	$ 306,003	$ 489,102	$ 663,142	$ 1,039,867	$ 2,672,948
Total NENY GasTarget	3,303	5,325	9,445	13,414	20,309	51,797
MMBtu-equivalent Gas Target	3,303	5,325	9,445	13,414	20,309	51,797
Con Edison						
Non-LMI Gas Budget	$13,486,552	$18,696,788	$ 24,032,664	$ 29,101,752	$ 34,125,128	$119,442,883
Non-LMI Gas Target	411,787	549,728	681,379	796,647	903,021	3,342,563
LMI Gas Budget	$13,681,878	$17,622,380	$ 22,515,904	$ 27,389,906	$ 34,821,259	$116,031,326
LMI Gas Target	126,661	163,140	208,442	253,563	322,359	1,074,165
Total NENY Gas Budget	$27,168,430	$36,319,167	$ 46,548,567	$ 56,491,658	$ 68,946,386	$235,474,209
Total NENY GasTarget	538,448	712,868	889,821	1,050,211	1,225,381	4,416,728
MMBtu-equivalent Gas Target	538,448	712,868	889,821	1,050,211	1,225,381	4,416,728
KEDLI						
Non-LMI Gas Budget	$ 6,241,967	$10,538,700	$ 14,792,552	$ 20,394,201	$ 25,762,278	$ 77,729,697
Non-LMI Gas Target	252,554	410,609	555,764	739,800	903,376	2,862,103
LMI Gas Budget	$ 1,560,492	$ 2,634,675	$ 3,698,138	$ 5,098,550	$ 6,440,570	$ 19,432,424
LMI Gas Target	14,446	24,391	34,236	47,200	59,624	179,897
Total NENY Gas Budget	$ 7,802,458	$13,173,375	$ 18,490,690	$ 25,492,751	$ 32,202,848	$ 97,162,121
Total NENY GasTarget	267,000	435,000	590,000	787,000	963,000	3,042,000
MMBtu-equivalent Gas Target	267,000	435,000	590,000	787,000	963,000	3,042,000
KEDNY						
Non-LMI Gas Budget	$ 6,196,225	$11,036,198	$ 16,747,452	$ 24,075,014	$ 33,075,594	$ 91,130,484
Non-LMI Gas Target	213,660	366,458	536,240	744,281	988,450	2,849,089
LMI Gas Budget	$ 1,549,056	$ 2,759,050	$ 4,186,863	$ 6,018,754	$ 8,268,898	$ 22,782,621
LMI Gas Target	14,340	25,542	38,760	55,719	76,550	210,911
Total NENY Gas Budget	$ 7,745,282	$13,795,248	$ 20,934,315	$ 30,093,768	$ 41,344,492	$113,913,105
Total NENY GasTarget	228,000	392,000	575,000	800,000	1,065,000	3,060,000
MMBtu-equivalent Gas Target	228,000	392,000	575,000	800,000	1,065,000	3,060,000
NFG						
Non-LMI Gas Budget	$ 431,692	$ 1,339,738	$ 2,445,172	$ 4,284,134	$ 6,524,523	$ 15,025,259
Non-LMI Gas Target	9,001	26,899	47,341	80,085	117,900	281,226
LMI Gas Budget	$ 107,923	$ 334,935	$ 611,293	$ 1,071,034	$ 1,631,131	$ 3,756,315
LMI Gas Target	999	3,101	5,659	9,915	15,100	34,774
Total NENY Gas Budget	$ 539,615	$ 1,674,673	$ 3,056,465	$ 5,355,168	$ 8,155,654	$ 18,781,574
Total NENY GasTarget	10,000	30,000	53,000	90,000	133,000	316,000
MMBtu-equivalent Gas Target	10,000	30,000	53,000	90,000	133,000	316,000
Niagara Mohawk						
Non-LMI Gas Budget	$ 548,240	$ 1,086,858	$ 1,835,429	$ 3,044,384	$ 4,476,812	$ 10,991,722
Non-LMI Gas Target	32,731	62,485	101,752	162,954	231,639	591,561
LMI Gas Budget	$ 1,255,791	$ 2,311,875	$ 3,998,769	$ 5,624,786	$ 7,575,630	$ 20,766,851
LMI Gas Target	11,626	21,402	37,019	52,072	70,132	192,250
Total NENY Gas Budget	$ 1,804,031	$ 3,398,733	$ 5,834,198	$ 8,669,170	$ 12,052,442	$ 31,758,573
Total NENY GasTarget	44,357	83,887	138,771	215,026	301,771	783,811
MMBtu-equivalent Gas Target	44,357	83,887	138,771	215,026	301,771	783,811
NYSEG						
Non-LMI Gas Budget	$ 853,201	$ 1,061,429	$ 1,363,437	$ 1,683,295	$ 2,046,990	$ 7,008,351
Non-LMI Gas Target	43,025	53,526	68,756	84,885	103,226	353,418
LMI Gas Budget	$ 1,329,309	$ 2,122,158	$ 3,445,778	$ 4,954,059	$ 6,772,576	$ 18,623,881
LMI Gas Target	12,306	19,646	31,899	45,862	62,697	172,411
Total NENY Gas Budget	$ 2,182,510	$ 3,183,587	$ 4,809,215	$ 6,637,354	$ 8,819,566	$ 25,632,232
Total NENY GasTarget	55,332	73,172	100,655	130,748	165,923	525,830
MMBtu-equivalent Gas Target	55,332	73,172	100,655	130,748	165,923	525,830

O&R

Non-LMI Gas Budget	$ 824,207	$ 1,148,941	$ 1,697,359	$ 2,278,977	$ 2,810,331	$ 8,759,815
Non-LMI Gas Target	24,092	33,585	49,616	66,617	82,149	256,059
LMI Gas Budget	$ 382,257	$ 558,096	$ 713,575	$ 868,913	$ 980,049	$ 3,502,890
LMI Gas Target	3,539	5,167	6,606	8,044	9,073	32,428
Total NENY Gas Budget	$ 1,206,464	$ 1,707,037	$ 2,410,933	$ 3,147,890	$ 3,790,379	$ 12,262,705
Total NENY GasTarget	27,631	38,751	56,222	74,661	91,222	288,487
MMBtu-equivalent Gas Target	27,631	38,751	56,222	74,661	91,222	288,487

RG&E

Non-LMI Gas Budget	$ 424,269	$ 721,472	$ 1,220,816	$ 1,601,699	$ 2,092,382	$ 6,060,639
Non-LMI Gas Target	24,018	40,843	69,111	90,673	118,451	343,096
LMI Gas Budget	$ 770,046	$ 1,169,956	$ 1,721,207	$ 2,396,686	$ 3,105,876	$ 9,163,771
LMI Gas Target	7,129	10,831	15,934	22,187	28,753	84,834
Total NENY Gas Budget	$ 1,194,315	$ 1,891,429	$ 2,942,024	$ 3,998,385	$ 5,198,258	$ 15,224,410
Total NENY GasTarget	31,147	51,674	85,045	112,860	147,204	427,930
MMBtu-equivalent Gas Target	31,147	51,674	85,045	112,860	147,204	427,930

Total Gas Portfolios

Non-LMI Gas Budget	**$29,033,643**	**$45,673,989**	**$ 64,228,442**	**$ 86,612,507**	**$111,148,862**	**$336,697,444**
Non-LMI Gas Target	**1,012,805**	**1,547,032**	**2,115,742**	**2,774,598**	**3,461,069**	**10,911,245**
LMI Gas Budget	**$20,784,297**	**$29,775,263**	**$ 41,287,067**	**$ 53,936,779**	**$ 70,401,030**	**$216,184,435**
LMI Gas Target	**192,412**	**275,646**	**382,217**	**499,322**	**651,741**	**2,001,337**
Total NENY Gas Budget	**$49,817,940**	**$75,449,251**	**$105,515,509**	**$140,549,286**	**$181,549,892**	**$552,881,879**
Total NENY GasTarget	**1,205,216**	**1,822,678**	**2,497,959**	**3,273,920**	**4,112,809**	**12,912,583**
MMBtu-equivalent Gas Target	**1,205,216**	**1,822,678**	**2,497,959**	**3,273,920**	**4,112,809**	**12,912,583**

Appendix A - Table A3

2021-2025 Electric Budgets and Targets (Gross MWh)

	2021	2022	2023	2024	2025	2021-2025 Total
Central Hudson						
Base Budget	$ 9,773,000	$ 9,773,000	$ 9,773,000	$ 9,773,000	$ 9,773,000	$ 48,865,000
Incremental NENY Budget	$ 879,053	$ 1,566,412	$ 2,336,181	$ 3,008,939	$ 4,710,437	$ 12,501,021
Total Electric Budget	**$ 10,652,053**	**$ 11,339,412**	**$ 12,109,181**	**$ 12,781,939**	**$ 14,483,437**	**$ 61,366,021**
Base Target	53,262	53,262	53,262	53,262	53,262	266,310
Incremental NENY Target	5,756	9,564	13,354	16,173	23,905	68,753
Total Electric Target	**59,018**	**62,826**	**66,616**	**69,435**	**77,167**	**335,063**
Con Edison						
Base Budget	$ 86,178,022	$ 86,178,022	$ 86,178,022	$ 86,178,022	$ 86,178,022	$ 430,890,110
Incremental NENY Budget	$ 70,559,271	$ 89,554,974	$114,279,315	$139,150,525	$179,776,889	$ 593,320,974
Total Electric Budget	**$156,737,293**	**$175,732,996**	**$200,457,337**	**$225,328,547**	**$265,954,911**	**$1,024,211,084**
Base Target	199,008	199,008	199,008	199,008	199,008	995,040
Incremental NENY Target	249,370	316,288	403,585	491,442	635,399	2,096,085
Total Electric Target	**448,378**	**515,296**	**602,593**	**690,450**	**834,407**	**3,091,125**
Niagara Mohawk						
Base Budget	$ 63,897,894	$ 63,897,894	$ 63,897,894	$ 63,897,894	$ 63,897,894	$ 319,489,470
Incremental NENY Budget	$ 7,165,904	$ 13,114,659	$ 22,728,441	$ 31,507,875	$ 42,059,201	$ 116,576,079
Total Electric Budget	**$ 71,063,798**	**$ 77,012,553**	**$ 86,626,335**	**$ 95,405,769**	**$105,957,095**	**$ 436,065,549**
Base Target	319,383	319,383	319,383	319,383	319,383	1,596,915
Incremental NENY Target	39,060	71,461	123,860	171,564	228,901	634,845
Total Electric Target	**358,443**	**390,844**	**443,243**	**490,947**	**548,284**	**2,231,760**
NYSEG						
Base Budget	$ 17,035,451	$ 17,035,451	$ 17,035,451	$ 17,035,451	$ 17,035,451	$ 85,177,255
Incremental NENY Budget	$ 7,312,555	$ 11,974,688	$ 19,803,485	$ 28,748,785	$ 39,555,979	$ 107,395,491
Total Electric Budget	**$ 24,348,006**	**$ 29,010,139**	**$ 36,838,936**	**$ 45,784,236**	**$ 56,591,430**	**$ 192,572,746**
Base Target	59,508	59,508	59,508	59,508	59,508	297,540
Incremental NENY Target	37,064	60,779	100,614	146,137	201,140	545,735
Total Electric Target	**96,572**	**120,287**	**160,122**	**205,645**	**260,648**	**843,275**
O&R						
Base Budget	$ 9,900,000	$ 9,900,000	$ 9,900,000	$ 9,900,000	$ 9,900,000	$ 49,500,000
Incremental NENY Budget	$ 1,523,945	$ 2,279,365	$ 2,686,029	$ 3,058,630	$ 3,209,968	$ 12,757,937
Total Electric Budget	**$ 11,423,945**	**$ 12,179,365**	**$ 12,586,029**	**$ 12,958,630**	**$ 13,109,968**	**$ 62,257,937**
Base Target	53,076	53,076	53,076	53,076	53,076	265,380
Incremental NENY Target	7,694	11,530	13,498	15,281	15,929	63,933
Total Electric Target	**60,770**	**64,606**	**66,574**	**68,357**	**69,005**	**329,313**
RG&E						
Base Budget	$ 10,482,078	$ 10,482,078	$ 10,482,078	$ 10,482,078	$ 10,482,078	$ 52,410,390
Incremental NENY Budget	$ 4,306,014	$ 6,465,401	$ 9,352,315	$ 13,120,801	$ 16,986,567	$ 50,231,098
Total Electric Budget	**$ 14,788,092**	**$ 16,947,479**	**$ 19,834,393**	**$ 23,602,879**	**$ 27,468,645**	**$ 102,641,488**
Base Target	35,307	35,307	35,307	35,307	35,307	176,535
Incremental NENY Target	22,848	34,284	49,544	69,537	90,020	266,233
Total Electric Target	**58,155**	**69,591**	**84,851**	**104,844**	**125,327**	**442,768**
Total Electric						
Base Budget	**$197,266,445**	**$197,266,445**	**$197,266,445**	**$197,266,445**	**$197,266,445**	**$ 986,332,225**
Incremental NENY Budget	**$ 91,746,741**	**$124,955,498**	**$171,185,766**	**$218,595,554**	**$286,299,041**	**$ 892,782,600**
Total Electric Budget	**$289,013,186**	**$322,221,943**	**$368,452,211**	**$415,861,999**	**$483,565,486**	**$1,879,114,825**
Base Target	**719,544**	**719,544**	**719,544**	**719,544**	**719,544**	**3,597,720**
Incremental NENY Target	**361,792**	**503,907**	**704,456**	**910,134**	**1,195,294**	**3,675,584**
Total Electric Target	**1,081,336**	**1,223,451**	**1,424,000**	**1,629,678**	**1,914,838**	**7,273,304**

Appendix A - Table A4

2021-2025 Gas Budgets and Targets (Gross MMBtu)

	2021	2022	2023	2024	2025	2021-2025 Total
Central Hudson						
Base Budget	$ 1,182,000	$ 1,182,000	$ 1,182,000	$ 1,182,000	$ 1,182,000	$ 5,910,000
Incremental NENY Budget	$ 174,835	$ 306,003	$ 489,102	$ 663,142	$ 1,039,867	$ 2,672,948
Total Gas Budget	**$ 1,356,835**	**$ 1,488,003**	**$ 1,671,102**	**$ 1,845,142**	**$ 2,221,867**	**$ 8,582,948**
Base Target	58,016	58,016	58,016	58,016	58,016	290,080
Incremental NENY Target	3,303	5,325	9,445	13,414	20,309	51,797
Total Gas Target	**61,319**	**63,341**	**67,461**	**71,430**	**78,325**	**341,877**
Con Edison						
Base Budget	$ 14,533,466	$ 14,533,466	$ 14,533,466	$ 14,533,466	$ 14,533,466	$ 72,667,330
Incremental NENY Budget	$ 27,168,430	$ 36,319,167	$ 46,548,567	$ 56,491,658	$ 68,946,386	$ 235,474,209
Total Gas Budget	**$ 41,701,896**	**$ 50,852,633**	**$ 61,082,033**	**$ 71,025,124**	**$ 83,479,852**	**$ 308,141,539**
Base Target	303,462	303,462	303,462	303,462	303,462	1,517,310
Incremental NENY Target	538,448	712,868	889,821	1,050,211	1,225,381	4,416,728
Total Gas Target	**841,910**	**1,016,330**	**1,193,283**	**1,353,673**	**1,528,843**	**5,934,038**
KEDLI						
Base Budget	$ 7,164,182	$ 7,164,182	$ 7,164,182	$ 7,164,182	$ 7,164,182	$ 35,820,910
Incremental NENY Budget	$ 7,802,458	$ 13,173,375	$ 18,490,690	$ 25,492,751	$ 32,202,848	$ 97,162,121
Total Gas Budget	**$ 14,966,640**	**$ 20,337,557**	**$ 25,654,872**	**$ 32,656,933**	**$ 39,367,030**	**$ 132,983,031**
Base Target	166,821	166,821	166,821	166,821	166,821	834,105
Incremental NENY Target	267,000	435,000	590,000	787,000	963,000	3,042,000
Total Gas Target	**433,821**	**601,821**	**756,821**	**953,821**	**1,129,821**	**3,876,105**
KEDNY						
Base Budget	$ 12,771,114	$ 12,771,114	$ 12,771,114	$ 12,771,114	$ 12,771,114	$ 63,855,570
Incremental NENY Budget	$ 7,745,282	$ 13,795,248	$ 20,934,315	$ 30,093,768	$ 41,344,492	$ 113,913,105
Total Gas Budget	**$ 20,516,396**	**$ 26,566,362**	**$ 33,705,429**	**$ 42,864,882**	**$ 54,115,606**	**$ 177,768,675**
Base Target	282,740	282,740	282,740	282,740	282,740	1,413,700
Incremental NENY Target	228,000	392,000	575,000	800,000	1,065,000	3,060,000
Total Gas Target	**510,740**	**674,740**	**857,740**	**1,082,740**	**1,347,740**	**4,473,700**
NFG						
Base Budget	$ 10,040,000	$ 10,040,000	$ 10,040,000	$ 10,040,000	$ 10,040,000	$ 50,200,000
Incremental NENY Budget	$ 539,615	$ 1,674,673	$ 3,056,465	$ 5,355,168	$ 8,155,654	$ 18,781,574
Total Gas Budget	**$ 10,579,615**	**$ 11,714,673**	**$ 13,096,465**	**$ 15,395,168**	**$ 18,195,654**	**$ 68,981,574**
Base Target	385,468	385,468	385,468	385,468	385,468	1,927,340
Incremental NENY Target	10,000	30,000	53,000	90,000	133,000	316,000
Total Gas Target	**395,468**	**415,468**	**438,468**	**475,468**	**518,468**	**2,243,340**
Niagara Mohawk						
Base Budget	$ 14,014,262	$ 14,014,262	$ 14,014,262	$ 14,014,262	$ 14,014,262	$ 70,071,310
Incremental NENY Budget	$ 1,804,031	$ 3,398,733	$ 5,834,198	$ 8,669,170	$ 12,052,442	$ 31,758,573
Total Gas Budget	**$ 15,818,293**	**$ 17,412,995**	**$ 19,848,460**	**$ 22,683,432**	**$ 26,066,704**	**$ 101,829,883**
Base Target	870,798	870,798	870,798	870,798	870,798	4,353,990
Incremental NENY Target	44,357	83,887	138,771	215,026	301,771	783,811
Total Gas Target	**915,155**	**954,685**	**1,009,569**	**1,085,824**	**1,172,569**	**5,137,801**
NYSEG						
Base Budget	$ 2,038,215	$ 2,038,215	$ 2,038,215	$ 2,038,215	$ 2,038,215	$ 10,191,075
Incremental NENY Budget	$ 2,182,510	$ 3,183,587	$ 4,809,215	$ 6,637,354	$ 8,819,566	$ 25,632,232
Total Gas Budget	**$ 4,220,725**	**$ 5,221,802**	**$ 6,847,430**	**$ 8,675,569**	**$ 10,857,781**	**$ 35,823,307**
Base Target	94,486	94,486	94,486	94,486	94,486	472,430
Incremental NENY Target	55,332	73,172	100,655	130,748	165,923	525,830
Total Gas Target	**149,818**	**167,658**	**195,141**	**225,234**	**260,409**	**998,260**

O&R

Base Budget	$ 703,000	$ 703,000	$ 703,000	$ 703,000	$ 703,000	$ 3,515,000
Incremental NENY Budget	$ 1,206,464	$ 1,707,037	$ 2,410,933	$ 3,147,890	$ 3,790,379	$ 12,262,705
Total Gas Budget	**$ 1,909,464**	**$ 2,410,037**	**$ 3,113,933**	**$ 3,850,890**	**$ 4,493,379**	**$ 15,777,705**
Base Target	22,853	22,853	22,853	22,853	22,853	114,265
Incremental NENY Target	27,631	38,751	56,222	74,661	91,222	288,487
Total Gas Target	**50,484**	**61,604**	**79,075**	**97,514**	**114,075**	**402,752**

RG&E

Base Budget	$ 2,720,749	$ 2,720,749	$ 2,720,749	$ 2,720,749	$ 2,720,749	$ 13,603,745
Incremental NENY Budget	$ 1,194,315	$ 1,891,429	$ 2,942,024	$ 3,998,385	$ 5,198,258	$ 15,224,410
Total Gas Budget	**$ 3,915,064**	**$ 4,612,178**	**$ 5,662,773**	**$ 6,719,134**	**$ 7,919,007**	**$ 28,828,155**
Base Target	141,246	141,246	141,246	141,246	141,246	706,230
Incremental NENY Target	31,147	51,674	85,045	112,860	147,204	427,930
Total Gas Target	**172,393**	**192,920**	**226,291**	**254,106**	**288,450**	**1,134,160**

Total Gas

Base Budget	**$ 65,166,988**	**$ 65,166,988**	**$ 65,166,988**	**$ 65,166,988**	**$ 65,166,988**	**$ 325,834,940**
Incremental NENY Budget	**$ 49,817,940**	**$ 75,449,251**	**$105,515,509**	**$140,549,286**	**$181,549,892**	**$ 552,881,879**
Total Gas Budget	**$114,984,928**	**$140,616,239**	**$170,682,497**	**$205,716,274**	**$246,716,880**	**$ 878,716,819**
Base Target	**2,325,890**	**2,325,890**	**2,325,890**	**2,325,890**	**2,325,890**	**11,629,450**
Incremental NENY Target	**1,205,216**	**1,822,678**	**2,497,959**	**3,273,920**	**4,112,809**	**12,912,583**
Total Gas Target	**3,531,106**	**4,148,568**	**4,823,849**	**5,599,810**	**6,438,699**	**24,542,033**

Appendix B - Table B1
Calculation of 2025 Gas EE as Percentage of Gas Sales

	2018	2019	2020	2021	2022	2023	2024	2025
Incremental NE:NY MMBtu Acquired Savings	n/a	174,209	299,367	1,205,216	1,822,678	2,497,959	3,273,920	4,112,809
NYSERDA Acquired MMBtu Savings [1]	1,400,000	1,150,000	1,200,000	1,387,000	1,737,000	2,337,000	2,637,000	2,637,000
Current IOU Acquired MMBtu Targets [2]	2,530,234	2,638,516	2,645,969	2,351,118	2,354,360	2,369,360	2,384,360	2,397,060
Total Incremental MMBtu Acquired Savings	3,930,234	3,962,725	4,145,336	4,943,334	5,914,038	7,204,319	8,295,280	9,146,869
2018 SBC Gas MMBtu Sales	761,064,543	761,064,543	761,064,543	761,064,543	761,064,543	761,064,543	761,064,543	761,064,543
2018 SBC Gas MMBtu Sales Adj. for EE [3]	740,470,247	740,450,192	736,387,693	731,495,161	725,576,078	718,889,902	711,868,264	704,242,737
EE as % of EE-Adjusted Sales	0.53%	0.54%	0.56%	0.68%	0.82%	1.00%	1.17%	1.30%

1 NYSERDA's Clean Energy Fund (CEF) goals are established and reported on a commitment basis, including a 10-year minimum goal for fuel savings which encompasses natural gas, heating oil, propane, and other non-electric fuel savings. To inform Staff's analysis of gas efficiency targets, NYSERDA prepared an updated projection for how CEF direct and indirect savings would be acquired specifically for natural gas. NYSERDA's updated projection for acquired gas savings is based on approved CEF Investment Plans filed with the PSC as of April 2019, which NYSERDA filed after conducting a bottom-up reforecast of all plans based on performance and market intelligence to date. As shown in Table immediately below, NYSERDA's current projection of acquired direct gas savings peaks in 2021, driven by planned projects with large commercial and industrial (C&I) customers that are anticipated for installation. NYSERDA's projection of acquired indirect savings is concentrated in 2020-2021 and in 2024-2026, since NYSERDA expects to evaluate and report on the indirect savings from CEF activities on a periodic basis. For the purposes of modeling annual natural gas savings from both NYSERDA and IOU activities as a percentage of IOU sales, the concentration of CEF gas savings in certain years – due both to the anticipated installation schedule for large C&I projects and the anticipated evaluation schedule for indirect savings – creates "lumpiness" in specific years that does not reflect the average trend of accumulating savings. Staff therefore created an analytic assumption for use in modeling, as reflected above, which smooths CEF savings over additional years while ensuring that the cumulative annual gas savings acquired through 2025 aligns with NYSERDA's projection. See Table B2 below.

2 Includes Commission-authorized 2018-2020 ETIP targets, continued 'ETIP' budgets for 2021-2025, and incremental rate case targets.

3 Adjusted to reflect actual or projected energy efficiency achievements.

Appendix B - Table B2
Projection of Acquired NYSERDA Gas Savings (MMBtu)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NYSERDA CEF: Direct Gas Savings	150,000	470,000	1,400,000	1,200,000	2,000,000	2,200,000	2,000,000	1,800,000	1,100,000	785,000
NYSERDA CEF: Indirect Gas Savings	0	0	0	0	100,000	200,000	0	0	700,000	1,000,000
Total NYSERDA CEF Acquired Gas Savings	150,000	470,000	1,400,000	1,200,000	2,100,000	2,400,000	2,000,000	1,800,000	1,800,000	1,785,000

Appendix B - Table B3
Calculation of 2025 Electric EE as 3.0% of Electric MWh Sales

	2018	2019	2020	2021	2022	2023	2024	2025
Incremental NE:NY Acquired MWh Savings	n/a	46,505	255,132	361,792	503,907	704,456	910,134	1,195,294
NYSERDA Acquired MWh Savings [4]	365,000	512,000	836,000	804,000	1,046,500	1,046,500	1,046,500	1,046,500
Current IOU Acquired MWh Targets [5]	722,035	831,052	709,900	719,544	719,544	719,544	719,544	719,544
Total Acquired MWh Savings	1,087,035	1,389,557	1,801,032	1,885,336	2,269,951	2,470,500	2,676,178	2,961,338
2025 Forecast [6]	155,669,236	157,341,418	159,102,612	159,699,627	160,435,634	161,142,724	162,084,888	162,527,052
Jurisdictional Load	115,662,242	116,904,674	118,213,241	118,656,823	119,203,676	119,729,044	120,429,072	120,757,600
Adjusted Jurisdictional Load [7]	106,787,367	107,713,030	107,378,486	106,100,780	104,563,546	102,823,990	101,082,433	98,711,084
EE as % of Jurisdictional Load	1.018%	1.290%	1.677%	1.777%	2.171%	2.403%	2.648%	3.000%

4 NYSERDA's Clean Energy Fund (CEF) goals are established and reported on a commitment basis. In Q1 2018, for use in the New Efficiency: New York analysis, NYSERDA prepared a projection for how CEF direct and indirect savings would be acquired, as well as a projection for committed EEPS savings that are still to be acquired. NYSERDA recently updated its projection of EEPS savings to be acquired through 2020. NYSERDA will review and update its projection of acquired CEF savings in Q1 2019, and annually thereafter. At present, NYSERDA's projection of CEF indirect savings follows the timing shown in CEF Investment Plans filed with NY DPS, resulting in significant "lumpiness" as indirect savings are concentrated in 2020, 2024, and 2025 as shown in the table immediately below. In practice, NYSERDA will evaluate and report on acquired indirect savings from CEF activities on a periodic basis, which is anticipated to be more frequent but to nonetheless result in some degree of lumpiness in terms of reported CEF savings. For the purposes of modeling annual electricity savings from both NYSERDA and IOU activities as a percentage of IOU sales, the concentration of NYSERDA CEF indirect savings in 2020, 2024, and 2025 creates distortions. Staff therefore created an analytic assumption for use in modeling, as reflected above, which smooths CEF indirect savings over additional years. See Table B3 below.

5 Includes Commission-authorized 2018-2020 ETIP targets, continued 'ETIP' budgets for 2021-2025, and incremental rate case targets.

6 Electricity forecast based on CES and 2015 NYISO Gold Book. Onsite fuel consumption forecast based on 2015 EIA AEO.

7 Adjusted to reflect actual or projected energy efficiency achievements, and NYISO assumed Codes & Standards occurring throughout this period.

Appendix B - Table B4
Projection of Acquired NYSERDA Electric Savings (MWh)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NYSERDA EEPS (rev. Q3 2018)	353,000	413,000	163,000	252,000	63,000	0	0	0	0	0
NYSERDA CEF: Direct Savings	14,000	49,000	182,000	260,000	483,000	514,000	514,000	514,000	514,000	514,000
NYSERDA CEF: Indirect Savings	3,000	11,000	20,000	0	580,000	0	0	0	580,000	1,550,000
Total Acquired Projection	370,000	473,000	365,000	512,000	1,126,000	514,000	514,000	514,000	1,094,000	2,064,000

Appendix C - Table C1

2020-2025 Heat Pump Budgets and Targets (Gross MMBtu)

	2020	2021	2022	2023	2024	2025	2020-2025 Total
Central Hudson							
Base Budget	$ 3,354,852	$ 5,559,173	$ 7,049,949	$ 8,265,836	$ 9,186,504	$ 9,804,997	$ 43,221,312
Base Target	17,728	30,183	38,850	48,190	56,479	63,863	255,292
Con Edison							
Base Budget	$18,037,338	$29,128,534	$35,884,450	$42,823,631	$48,526,394	$ 52,915,488	$ 227,315,834
Base Target	72,921	119,716	151,334	186,941	219,927	249,162	1,000,000
Niagara Mohawk							
Base Budget	$ 6,983,416	$11,891,672	$14,789,044	$16,424,789	$17,190,980	$ 17,118,933	$ 84,398,834
Base Target	71,239	132,010	172,203	210,694	245,889	280,647	1,112,681
NYSEG							
Base Budget	$ 6,204,522	$10,605,014	$13,173,160	$14,628,326	$15,300,267	$ 15,219,288	$ 75,130,577
Base Target	63,614	117,911	153,328	187,944	219,558	250,383	992,737
O&R							
Base Budget	$ 1,236,326	$ 1,973,311	$ 2,397,539	$ 2,828,131	$ 3,164,633	$ 3,403,947	$ 15,003,888
Base Target	6,440	10,421	13,027	16,109	18,912	21,748	86,657
RG&E							
Base Budget	$ 747,986	$ 1,278,915	$ 1,611,466	$ 1,799,548	$ 1,900,472	$ 1,909,389	$ 9,247,775
Base Target	7,541	14,206	18,304	22,468	26,422	30,282	119,223
Total Heat Pumps							
Base Budget	**$36,564,440**	**$60,436,619**	**$74,905,608**	**$86,770,261**	**$95,269,250**	**$100,372,042**	**$ 454,318,220**
Base Target	**239,482**	**424,448**	**547,045**	**672,345**	**787,186**	**896,085**	**3,566,590**

Appendix D - Table D1

Uncommitted and Unspent NYSERDA EEPS Gas Funds *

Central Hudson	$ 895,652.16
Con Edison	$ 12,438,008.24
KEDLI	$ 6,727,021.88
KEDNY	$ 10,015,895.14
NFG	$ 5,060,916.24
Niagara Mohawk	$ 5,706,171.03
NYSEG	$ 3,038,475.88
O&R	$ 1,357,924.24
RG&E	$ 2,913,277.19
Total	$ 48,153,342.00

* Figures are as of 12/31/2019.

COMMENT SUMMARIES

Party Commenters

Alliance for a Green Economy (AGREE)

Alliance for Clean Energy New York (ACE NY) and the Advanced Energy Economy Institute (AEEI), on behalf of member and stakeholder companies engaged in energy efficiency activities (EE Organizations)

Association for Energy Affordability (AEA)

City of New York (City)

Dandelion Energy (Dandelion)

Energy Democracy Alliance (EDA)

Energy Efficiency for All New York (EEFA NY)

HeatSmart

Multiple Intervenors (MI)

Natural Resources Defense Council (NRDC), Building Performance Association, Building Performance Contractors Association, Centsible House, Citizens Campaign for the Environment, Damascus Citizens for Sustainability, New Yorkers for Clean Power, Pace Energy & Climate Center, Sallan Foundation, Sierra Club, Lime Energy, Sealed, TRC Companies (collectively Energy Efficiency Advocates)

New York Geothermal Energy Organization (NY-GEO)

New York Power Authority (NYPA)

New York State Energy Research and Development Authority (NYSERDA)

Renewable Heat Now (RHN)

1. Energy Efficiency Targets and Budgets

AEA states that the Commission must ensure that the utilities pursue all cost-effective energy efficiency, and comments that the Utility Proposal lacks sufficient detail on likely programs, collaboration with NYSERDA, and precisely how the utilities will meet their energy savings obligations, noting that several utilities indicates that they are not even planning to meet the goals necessary for achievement of the collective targets. As such, AEA recommends that the Commission direct the utilities to provide concrete opportunities for stakeholder input during preparation of the implementation plans and suggests the creation of a formal advisory group to review and advise on the state's efficiency efforts.

AEA comments that the budgets and targets established by the Commission should be floors and not ceilings for each utility and indicates that Con Edison filed a rate case proposal in January of 2019 that included efficiency targets that it then reduced to the level proposed by the Commission in the Accelerated Efficiency Order. AEA fully supports a fuel neutral approach that includes customers relying on delivered fuels and using a combined electric and gas portfolio approach as Con Edison has indicates is its preference. However, AEA insisted that the individual electric, gas, and heat pump targets should each be met "as a floor."

AEA further agrees with the Utility Proposal that some budget flexibility is appropriate for utility programs and that the rate impact should be raised if needed to achieve efficiency targets, and it emphasized that the Commission should ensure that the utilities can capture all cost-effective energy efficiency and not be constrained by targets and budgets when savings provide benefits to New Yorkers in reduced costs for meeting climate goals.

AEA comments that transparency and regular reporting on progress toward achievement of the targets and on expenditures are necessary and indicates that there will be some lumpiness in achievements, especially in LMI programs. It suggests that reporting be accompanied by narrative reporting by each utility, including distinguishing between serving low income populations and middle-income populations.

AEA comments that utilities do not incentivize measures unless indicated on a stand-alone basis using simplified deemed and partially deemed calculations under the TRM, resulting in program design based on specific measures rather than a comprehensive portfolio which biases programs away from fuel neutral approaches. AEA comments that New York needs to be working to adopt new open-source TRM technologies such as the U.S. Department of Energy supports EnergyPlus and OpenStudio,

and that the BCA needs revision in its application and increased transparency on its calculations.

EE Organizations supports the goals of the Order, and it stressed that the targets for energy efficiency programs as outlined in the Utility Proposal should be treated as a floor, and not a ceiling. EE Organizations comments that the Utility Proposal does not contain detailed information about other energy efficiency programs that are or might be conducted by the utilities with the except of lighting and heat pump programs, and they request that the Commission require the utilities to pursue all cost-effective energy efficiency measures. Additionally, they express concern over energy efficiency plans that propose mandatory effective useful lives or incentives that encourage utilities to deploy long-lived measures.

Energy Efficiency Advocates recommends that the Commission clarify that the electricity and gas savings targets proposed in the Accelerated Efficiency Order be treated as minimum savings targets, and that the utilities should plan to exceed those targets to the extent that there is additional cost-effective energy efficiency available. Energy Efficiency Advocates further recommends that the Commission direct all utilities to identify all cost-effective energy savings beyond those in the Accelerated Efficiency Order. Energy Efficiency Advocates comments that potential for cost-effective savings beyond the targets identifies in the Accelerated Efficiency Order exists and cites as an example that the electric efficiency savings proposed by Con Edison in its April filing are lower than both the targets in the Accelerated Efficiency Order and the savings that Con Edison itself proposed in its initial January rate case filing.

Energy Efficiency Advocates recommends that the Commission direct the utilities to achieve both the electricity and gas savings targets in the Accelerated Efficiency Order and clarify that utilities should not shift funding away from the programs "in one sector to pay for programs in another sector" with efficiency budgets that are flexible enough to be modified over time to meet the efficiency savings targets. Energy Efficiency Advocates expresses disappointment by the lack of programmatic details contained in the utilities' filing, and recommends that the Commission consider providing more detailed guidance as to what implementation plans should include, suggesting that such plans should focus on comprehensive energy efficiency measures, especially in the context of building retrofits that would involve deeper and more comprehensive measures that produce larger energy savings. It indicates that utilities should be

allowed to provide greater incentives when related efficiency measures are packaged and achieve larger savings.

MI urges the Commission to consider the cumulative impact of the costs of existing, proposed and future energy efficiency and heat pump programs on customers with respect to how it may hinder New York's economic competitiveness, as well as the extent to which such programs may be reaching a point of diminishing returns. MI also notes that there is an assortment of other customer-funded policy programs already mandated by the Commission and suggests that the practice of repeated layering of expensive, customer-funded programs is not sustainable.

MI states that it is unjust to require a customer to fund a program from which it receives no direct benefit, and that, accordingly, energy efficiency program costs should be allocated on a cost-causation, beneficiaries-pay basis such that no customer type is funding a program from which it receives no direct benefit and may be ineligible to participate, further proposing that large non-residential customers should be treated distinctly from small non-residential customers because of their different energy usage characteristics. Alternatively, MI suggests that program costs be allocated based on class demand and/or contribution to peak demand. Energy efficiency costs should be recovered through customer and/or demand charges for demand-metered customers, and that energy-based recovery creates undue rate impacts for large, high-load factor customers.

NYSERDA notes that the Utility Proposal failed to meet the overall 31 TBtu goal for incremental energy savings adopted by the Accelerated Efficiency Order because the heat pump targets proposed by the utilities fall well short of the 5 TBtu subsidiary heat pump target established by the same order; NYSERDA considered 5 TBtu to be an achievable minimum target for heat pumps.

It supports Con Edison's proposal to manage its electric, natural gas, and heat pump programs as a single portfolio with a combined MMBtu target and flexibility to move expenditures between fuel types as an appropriate model to adopt across the utilities, one that is consistent with a more fuel-neutral approach that would allow utilities to better respond to market conditions and focus on cost-effectiveness. Similarly, NYSERDA indicates that utility programs should extend to and appropriately account for oil and propane savings, including utility-administered programs for building-shell improvements and building management systems and advanced HVAC controls that save both electricity and delivered-fuel at the customer site.

RHN comments that the Commission must make clear that the Accelerated Efficiency Order's targets and budgets are a minimum, and that each utility should pursue all cost-effective energy efficiency strategies, across all fuels including natural gas. It notes that several utilities decreased their expectations of achievable targets. RHN supports some flexibility to adjust budgets between programs/fuels but did not support a combined savings goal, asserting that utilities should be required to meet both the gas and electric savings targets outlined in the Commission's Accelerated Efficiency Order.

The City provided its comments in the form of previously submitted testimony in the pending Con Edison rate cases (Case 19-E-0065 and Case 19-G-0066). The City comments that approved funding, program performance, and achieved conservation be closely scrutinized, particularly for program viability, cost-effectiveness, and financial prudence. The City recommends an obligation for Con Edison to file a report outlining such information biannually at a minimum.

The City is concerned about limitations of Con Edison's apparent plan to continue offering discrete energy efficiency measures, rather than more comprehensive programs that provide complementary measures, or energy efficiency measures coupled with building envelope improvements. The City reasons that such interactions between complementary measures and architectural retrofits to improve climate control will achieve greater energy conservation and should be facilitated with greater incentives to encourage projects that maximize conservation, rather than relying only on the most expedient installations to meet regulatory deadlines. The City notes that this approach is likely to require a longer implementation process realized in stages, necessitating improved coordination with project financers. While the City offers these comments in testimony specific to the pending Con Edison rate case, it recommends these policies be adopted generally.

The City also advocates the use of smart meters to reduce or replace some burdensome and expensive measurement and verification activities associated with energy efficiency program administration.

The City urges the Commission to allow energy efficiency budgets and targets as they pertain to the Con Edison to be addressed in the pending rate proceedings. The City argues that rate cases are the more appropriate venues for reviewing utility rate-setting proposals, including energy efficiency budgets and targets that may greatly affect revenue requirements. The City notes that it (and many other parties) have already addressed Con Edison's energy efficiency proposals in testimony submitted in the pending rate case. Accordingly, the City submitted its

comments in the present case in the form of its direct testimony in these pending rate proceedings (originally filed in May 2019).

2. Collaboration

AEA comments that the Utility Proposal contains very little concrete information on precisely how collaboration between NYSERDA and the utilities will work beyond a central hub for LMI programs. AEA comments that the State's previous efficiency program, the Energy Efficiency Portfolio Standard (EEPS), produced some successes despite egregiously pitting NYSERDA and the utilities against each other in a fight for customers and documented energy savings, and applauds the acknowledgement of the failures under EEPS. AEA states that it failed to see significant progress in establishing a framework for collaboration and indicates that further opportunities for stakeholder engagement are necessary.

AEA notes that a neutral third party not directly implementing efficiency programs itself can play an important role in performing coordination and reporting, suggesting that NYSERDA could play that role when it no longer itself designs and manages programs. AEA comments that NYSERDA could play a particularly important role in workforce training and certification to ensure high quality work, especially for heat pump installations, and suggests that the utilities collaborate with and support NYSERDA's workforce development investments.

AEA and EEFA NY suggests that NYSERDA and the utilities should refrain from penalizing consumers for participating in the programs of the other one or preventing customers from using more than one program, with EEFA NY further adding that the concept of layered incentives for different purposes should be part of program design when it leverages multiple resources for greater savings. EEFA NY and AEA also comments that coordination should ensure that all building and customer types are served by either utility programs or NYSERDA programs or a combination of the two and there should be both measure specific and whole building offerings, and EEFA NY further comments that NYSERDA and the utilities must ensure coordination between heat pump programs and low income programs, including EmPower and weatherization, such that they are not mutually exclusive, and customers can take advantage of a package of incentives.

EE Organizations are supportive of the collaboration between NYSERDA and the utilities.

NYSERDA strongly supports collaboration with the utilities to coordinate energy efficiency efforts, share best practices,

and align mutual efforts with State goals, with the overarching intent being the support of planning by the utilities and NYSERDA to address identifies market needs and to drive value for customers. NYSERDA believes that the collaboration structure must address sharing information on current programs as well as for prospective programs early in the planning process, decision makers and subject matter experts from each entity regularly scouting strategic opportunities or market gaps, and including combined impact analysis to ensure programs are motivating market participation and tracking toward overall goal attainment.

NYSERDA indicates that, although development and delivery of a statewide portfolio of LMI programs and a statewide framework to accelerate heat pump adoption will remain focal points for collaboration among the utilities and NYSERDA, other points of NYSERDA-utility collaboration include the achievement of a carbon neutral building stock including new construction statewide by 2050, efficiency solutions for the residential market including investment in building envelope upgrades to become "heat pump ready," reducing natural gas peak demand, and service delivery models such as Pay-for-Performance (P4P) and other innovative approaches.

NYSERDA concurs with the Utility Proposal that this collaboration will develop more uniform contractor eligibility and better align targeted marketing and customer outreach and indicates that it is critical that NYSERDA and each utility commit to enabling customers and market solution providers to easily learn about and access available clean energy services, whether those are offers by NYSERDA or the utility.

NYSERDA indicates that astute key account management and customer engagement practices offer another significant opportunity to cross-market available programs, and it proposes that NYSERDA and the utilities collaborate to develop a mechanism that would allow customers who engage with any clean energy program offers by NYSERDA or the utility to opt-in to receive follow up information about additional clean energy services, with leads routed to the relevant program administrator. This opt-in approach could also include the ability, with customer consent, for the sharing of information that can better enable the targeting of services to meet customers' needs. NYSERDA also asserts that it must also collaborate with the utilities in terms of accounting for indirect market transformation benefits.

For defined collaborative efforts, NYSERDA supports the policy of allowing a utility and NYSERDA to jointly contribute to the design and implementation of a pilot or program for which both the individual utility and NYSERDA will report the resulting energy savings. NYSERDA agrees with the utilities

that each defined collaborative effort need not be subject to a predetermined cap on the energy savings that may be counted toward utility achievements, provided that the effort is clearly described in publicly accessible filings to DPS. In NYSERDA's view, both the utility's ETIP/SEEP filing and the CEF Investment Plan filed by NYSERDA should contain clear descriptions of the effort, while the Utility Proposal could be interpreted to suggest that such description in either a utility filing or a NYSERDA filing would be sufficient. NYSERDA suggests that it could be appropriate for the Commission to establish oversight at the portfolio-level on the total quantity of dual reported savings that may be counted toward a utility's EAM target, whether those savings result from one or from multiple defined collaborative efforts, and that consideration of dual reported savings at the portfolio-level, rather than per partnership, may appropriately encourage utilities and NYSERDA to jointly pursue innovative pilots.

NYSERDA also cites the need for developing consistent methods of accounting for program- and project-level savings where appropriate, and the need for regular exchange of programmatic benefits data between utilities and NYSERDA so that the proper amount of "overlap" can be netted out, and suggests that the Commission could establish parameters for accounting for energy benefits according to the model of collaboration that is pursued. For broader NYSERDA-utility collaboration on cross-marketing and consumer education, NYSERDA suggests that the Commission establish no EAM rewards specific to such marketing efforts. For defined collaboratives in which the utility makes direct customer referrals to a specific NYSERDA program, NYSERDA supports allowing the utility to report toward its savings goals a modest percentage of the energy savings that are achieved from the efficiency measures installed by those refers customers. NYSERDA considered the range of 10 to 20 percent of the installed saving to be an appropriate referral credit depending upon program-specific considerations.

For defined collaboratives in which the utility and NYSERDA offer complimentary incentives, NYSERDA supports having each entity count the energy savings and related benefits for the services, measures, or value streams that are addressed in its offering, with mechanisms established to estimate dual reported savings (i.e., reported by both a utility and NYSERDA) to enable the overlap to be netted out at the state level. For defined collaboratives in which the utility and NYSERDA jointly allocate resources to co-design and co-implement a pilot or new program, NYSERDA supports having both the individual utility and NYSERDA report up to the full amount of the resulting energy savings during the defined period of the pilot, under a transparent structure to enable dual-reported savings to be netted out at

the state level. For defined collaboratives in which the utility and NYSERDA pool resources to extend the impact of an established initiative which is administered by a single lead entity, NYSERDA supports having the reported energy savings apportioned according to the financial resources budgeted and subsequently expended by each entity.

NYSERDA agrees with the utilities' proposal that DPS Staff revise the Clean Energy Guidance Document CE-04: Layered Incentives Guidance to reflect that a regularly updated inventory of energy efficiency programs will be maintained on the Dashboard by NYSERDA, with each program administrator responsible for providing updates as needed for its portfolio, and to remove references to CEAC Working Groups.

3. Accelerated Heat Pump Deployment

AEA strongly supports whole-building and fuel-neutral approaches to addressing a building's energy consumption and recommends that heat pump incentives be made available to existing utility gas customers, and not just to non-gas customers, as the imperative of climate change necessitates a transition to a green grid and electrification of our buildings, including heating and cooling and domestic hot water. It states that utilities should provide program details in October 2019 if they plan to take over heat pump program implementation from NYSERDA on Jan 1, 2020; otherwise, it suggests that NYSERDA continue to implement the programs in test and learn mode as the utilities finalize their plans.

AEA suggests statewide consistency to provide ease of participation for consumers and contractors, and states that heat pump programs should include targeting opportunities to replace aging gas infrastructure as well as equipment using delivered fuels. AEA indicates a belief that NYSERDA can support statewide heat pump efforts through awareness and education which should include proper operation and maintenance. It stressed the need for building envelope work to accompany heat pump installation and the availability of paired incentives for the building envelope work.

It further comments that limitations of the current heat pump calculations in the TRM, in combination with the pending changes to baselines, have led to confusion in the development of the heat pump plans, and that the current simplified equations and required baselines in the TRM are inadequate to support how technologies are being delivered and performing.

AGREE states that the upfront costs of heat pumps are prohibitive for many customers, rebate levels are insufficient to make heat pump adoption an easy decision, available on-bill

financing mechanisms are not flexible or inclusive enough to be useful for most customers, and heat pumps face unfair competition from utility rate-based fracked gas infrastructure expansion programs and gas appliance rebates. AGREE recommends that NYSERDA and the utilities be ordered to pursue all cost-effective energy efficiency strategies across all fuels. It recommends that all utilities have fully functional heat pump incentive programs in place by January 1, 2020, and that the new incentive levels and criteria be published by Oct 1, 2019, if the utilities take over the heat pump incentive programs, or, alternatively, that NYSERDA continue to offer its incentives so that no gap in incentives is created and no disruptive change happens.

AGREE recommends that incentives be funded at higher levels going forward, and that NYSERDA's theoretical model and heat pump potential numbers be used by the Commission as a starting point for setting incentive levels. It further recommends that utilities be required to make heat pump rebates available to all customers regardless of current fuel source, and that a special assistance program be created that targets gas customers with old furnaces (15 years or older) to encourage those customers to convert to heat pumps. Furthermore, AGREE recommends putting an end to utility investments of ratepayer money for oil-to-gas conversions, gas appliances, and the expansion of fracked gas infrastructure.

Dandelion comments that the 5 TBtu heat pump target is achievable with the right incentives, and states that it can testify to the growth of heat pump market in the past two years. It believes that more than 70% of installation costs can be removed through technology and operational efficiency. Dandelion comments that the utilities' heat pump incentive programs have not yet proposed detailed incentive levels, structures, or timelines, and encouraged the consideration of significant, upfront, direct-to-consumer rebates such as those offers through NYSERDA's and Con Edison's incentive programs in Westchester County. It comments that NYSERDA's incentives have enabled it to operate at a scale that has allowed it to drive down the cost of installation and notes that, if it scales as planned, its heat pump installation costs over the next several years will be half of what they are today.

Dandelion supports the utilities' states intention to pursue incentive structures that reflect the appropriate level of uniformity while also maintaining flexibility at the program delivery level to reflect differences among utility service territories, and suggests that, while the process for applying for incentives, and how to qualify for incentives, be consistent across the state, incentives can and should vary across the

state provided those incentives exist within a consistent framework with consideration given to regional cost drivers such electricity, labor, customer buying power and awareness, permitting, and marketing.

EEFA NY comments that it is critical that incentives for heat pump customers be made available to existing gas distribution utility customers, suggesting that, if additional investment is needed to support such incentives, the Commission should authorize it. EEFA NY further comments that heat pump installations in affordable housing must also include ensuring affordability post-conversion if heating and cooling that was previously included in rent then becomes part of the tenant's individual utility bill.

EE Organizations indicates support for NYSERDA's statewide actions to facilitate the installation of heat pumps, including workforce development, cooperative advertising with the utilities, marketing, tools and calculators, and technical assistance and financing. They see the need for a stronger inclusion of program pieces to address the building envelope, and they urge the Commission to ensure that building shell improvement is synchronized with heat pump installations in the implementation phase.

EE Organizations also comments that the Commission should direct the utilities to make heat pump incentives available for all types of customers, no matter what type of heating fuel they currently use. They comments that "deemed" savings estimates and TRM values for the heat pump programs should be revised to match the real-world savings achieved by heat pumps, and to the extent that the savings fall short of expectations, the EE Organizations agree with the utilities that the portion of overall energy efficiency target attributable to heat pump savings should be revised, increasing other programs' targets as necessary to ensure that the overall 31 TBtu goal is met.

EE Organizations indicates support for efforts to create a uniform program framework for heat pump programs, a common program manual and similar incentive levels for utilities in the same region, and further supports the development of a new statewide collaborative approach model for the program framework and program delivery.

Energy Efficiency Advocates comments that heat pumps represent a promising and cost-effective way to reduce fossil fuel end-use consumption and recommends that the state and the utilities should investigate additional heat pump savings opportunities, including new and innovative deployment models.

HeatSmart, a collective of organizations managing programs partially funded by NYSERDA's Clean Heating and Cooling Communities (CH&CC) program, expresses concern regarding the plans to transfer the authority to implement the incentive programs from NYSERDA to the utilities. It comments that the utilities should be required to adhere to what it considers to be the modest heat pump targets previously set forth by the Commission, indicating that the goal is far below the number of heat pumps needed to achieve adequate decarbonization of the heating sector. HeatSmart expresses disappointment at the number of utilities attempting to lower Commission-proposed targets in the Utility Proposal and recommends that the Commission clarify that the collective 5 TBtu target is a minimum and that each utility should pursue all cost-effective energy efficiency strategies across all fuels.

HeatSmart comments that the continuity and predictability of incentives are critical to the success of the programs, and that if the utilities become responsible for administering the heat pump incentive programs, the Commission must ensure that the new incentive levels and criteria are published by October 1, 2019, and that all utilities will have fully functional heat pump incentive programs in place by January 1, 2020. If those dates for the transition are not achievable, it requests that NYSERDA must announce a plan by October 1, 2019 to continue to offer its incentives in 2020 so that there is no gap in the delivery of the incentives.

HeatSmart suggests that the administrative timetable for this proceeding makes it unlikely that the order will be final much before the end of this year, and that the "track record" of utility implementation of heat pump incentives to date is instructive. It asserts that when it launched the first round of programs, NYSEG promised that it would have a heat pump program to match that of National Grid ready by the end of 2018, and that, to date, NYSEG has not launched this incentive program and may not do so until their rate case is finalized. HeatSmart expresses concern regarding NYSERDA's plans to continue incentives in a piecemeal fashion depending on which utilities are lacking programs, and states that, if there is to be variability in incentives, it will be easier for the HeatSmart campaigns if those variations follow easily recognized geographic distinctions and do not vary within a given county.

HeatSmart urges the Commission to use NYSERDA's heat pump potential numbers only as a starting point for setting incentive levels because real world conditions and decisions are complex and cannot be accounted for in financial models. It is too soon to use a declining block structure for incentives before 2025, suggesting that complicates the message of incentive availability and conveys that support for this switch is

similarly declining, sending a mixed message about the importance of heat pumps in achieving New York State's climate goals, according to HeatSmart.

HeatSmart states that the Commission must require that utilities make incentives available to utility gas customers. It argues that, because all customers will pay for these incentives, all customers should be eligible to participate in them, and that despite limited fuel cost savings methane gas customers, for example, should have access to the same incentives as oil or propane customers. It requests that the Commission issue an order making this clear during the summer of 2019 to allow the utilities time to incorporate this requirement into their plans.

HeatSmart contends that continued NYSERDA management of LMI programs makes sense, as does promoting incentives for LMI customers through existing utility programs, and it encouraged NYSERDA to utilize the existing services and the New York State web portal to alert eligible recipients to available opportunities.

MI urges the Commission to consider the cumulative impact of the costs of existing, proposed and future heat pump programs on customers with respect to how it may hinder New York's economic competitiveness, and states that it may not be appropriate to pursue subsidized heat pump deployment at this time. It questioned whether the accelerated heat pump deployment programs are a cost-effective use of limited customer funds, while also noting that NYSERDA's estimation of those costs has increased by 34% from what had informed the Accelerated Efficiency Order to what appeared in its report one month later, as well as the fact that NYSERDA's analysis of heat pumps is still ongoing.

MI comments that the Commission should proceed with extreme caution before experimenting with hundreds of millions of dollars in customer funds, suggesting the consideration of a more limited and less expensive pilot effort as an alternative, MI observed that the heat pump programs identifies in the Utility Proposal are overwhelmingly targeted at residential and small commercial customers, and that the proposal does not suggest that any utility's heat pump program is designed for large non-residential customers, describing largely residential applications of heat pump technology instead. MI comments that the cost of heat-pump programs should be allocated entirely to the service classes that participate therein and allocated equitably based on cost-causation and beneficiaries-pay principles.

NY-GEO refers to its July 16, 2018 comments submitted in response to the April 2018 whitepaper, and recommends that utilities be held harmless for added beneficial electrification load and count the energy efficiency impacts of beneficial electrification toward the 185 TBtu goal. NY-GEO comments that that the amount of electricity used for beneficial electrification of the heating and cooling sectors is directly related to the heating and cooling loads that heat pumps replace, noting that NYSERDA's May 2019 updated heat pump analysis significantly reduced the deemed heating loads from those in its January 2019 report. It asserts that the new projected savings for geothermal systems are significantly below the actual savings being experienced and offers to assist in the development of these values going forward. Additionally, it requests an explanation for how the electric reduction target will be adjusted to reflect load increases from heat pumps and electric vehicles.

NY-GEO recommends that the Commission order the utilities to reset their heat pump savings target for residential buildings to meet the 5 TBtu minimum indicates in the Accelerated Efficiency Order. It referenced the glide path analysis submitted by Alliance for a Green Economy in the Orange & Rockland rate case in March 2019, which set an annual number of 226,000 replacements of fossil fuel heating systems with heat pumps from 2018 to 2030 for the heating sector to contribute adequately to the goal of a 40% reduction in GHG emissions by 2030. It asserts that a program providing for 83,000 residential installations and 5 TBTU in savings over five years needs to be embraced as a minimum. Additionally, it comments that Accelerated Efficiency Order identifies a statewide goal of 6 TBtu including a jurisdictional target of 5TBtu; it questioned what follow up has been associated with the sixth TBtu.

NY-GEO comments that the savings numbers projected for heat pump installation were significantly lower in NYSERDA's May update due to a change in the projected efficiency of the "counterfactual" against which heat pump savings would be measured, and the use of a different methodology to calculate the projected heating load. NY-GEO states that it considers NYSERDA's original numbers to be more accurate and closer to real-world savings experienced in the field, and caution that actual savings experienced in the field are significantly larger than those projected in NYSERDA's May 2019 update and assumed by the utilities as the basis for their May 2019 Utility Proposal.

NY-GEO recommends the integration of the likely impact of projected heat waves on demand for air conditioning, as well as the development of a plan to minimize the impact of increased air conditioning demand on peak summer electricity demand and the health of LMI New Yorkers. It urges the state to encourage

the largest possible penetration of ground source heat pumps to avoid what could become massively expensive summer peaks.

NY-GEO notes that geothermal heat pumps are more efficient than air source heat pumps, and the ground source heat pump efficiency advantage over air source heat pumps is particularly operational on the hottest and coldest days of the year. NY-GEO asserts that, when geothermal heat pumps replace central air conditioning, room air conditioning or cold climate heat pumps, the geothermal installation will lower peak demand significantly, and as the need for air conditioning increases across the State, it would be advantageous for a maximum number of new and replacement installations to be geothermal.

NY-GEO argues that there is a lack of recognition of the advantages of geothermal or ground source heat pumps as the most efficient and desirable solution to replacing fossil fuel heating, and that there is very little discussion of ground source heat pumps as a kicker technology. NY-GEO urges the utilities and the Commission to carve out a strong place within kicker proposals for ground source heat pumps.

NY-GEO recommends the adoption of a rate structure for heat pump customers that eliminates the current subsidy they pay in the form of excessive volumetric delivery rates, and indicates that it is currently prepared to support forthcoming proposals under VDER for a voluntary demand-based standby delivery rate that would be available to all ratepayers, including ground source heat pump ratepayers.

NY-GEO agrees that NYERDA and the NY Green Bank should play the lead roles in financing to overcome major barriers to market penetration for heat pump installations and suggests that PACE financing could also play an important role.

NY-GEO recommends the development of a worker training program whose key elements are International Ground Source Heat Pump Association (IGSHPA) training, education for building professionals and wage supplementation for on the job training, and it requests help from the utilities regarding outreach to HVAC contractors who are already networked with the utilities.

NYPA recommends that implementation plans for the heat pump programs and kicker proposals clearly define customer and technology eligibility, as well as all processes and timelines for program participation and implementation. NYPA proposes that any overlap between the technologies incentivized under both the kicker and the Heat Pump programs be identifies, and that, where a certain technology is eligible for the heat pump program but not the kicker (or vice-versa), this distinction be made clear in the implementation plans for both programs.

NYSERDA welcomes the Commission's introduction of a target for heat pump deployment as set out in the Accelerated Efficiency Order, as well as the Commission's instructions to develop a statewide heat pump policy framework. NYSERDA considers 5 TBtu to be an achievable minimum target for heat pumps for 2020-2025, particularly if large multifamily and commercial buildings are included in the portfolio. NYSERDA explained that the discrepancy between the Accelerated Efficiency Order's 5 TBtu target and the 2.7 TBtu target from the Utility Proposal can be explained in part as a result of adjustments made by NYSERDA to its methodology for estimating heat pump savings during the collaborative process with the utilities that followed the Order. NYSERDA notes that the Utility Proposal references this adjusted methodology and shows a potential scenario for achievement of the 5 TBtu heat pump target and indicates that a collaborative process is ongoing between DPS, NYSERDA, and the utilities, with stakeholder input as appropriate, to assess the methodology to estimate heat pump savings in the TRM.

NYSERDA indicates that NYSEG and RG&E's proposed combined target level of approximately 0.5 TBtu is significantly less than the 1.4 TBtu that NYSERDA had estimated. NYSERDA recommends that target levels for utilities be adopted based on its revised savings methodology. NYSERDA notes that its projected level of achievable deployment for NYSEG and RG&E through 2025 was around 24,800 small-scale residential installations, based on available resource potential in each utility, which were considered too ambitious by NYSEG and RG&E. Accordingly, NYSERDA carried out additional analysis of potential market adoption, based on the revised savings methodology, that reflect greater growth rate assumptions for NYSEG and RG&E, resulting in a revised NYSEG and RG&E combined projected savings level of nearly 1.3 TBtu over the program period. As such, NYSERDA asserts that the targets for NYSEG and R&GE should be increased above the levels proposed by these utilities, with appropriate adjustments to budgets.

NYSERDA notes that although Con Edison's target in the Utility Proposal matches the target level of 0.8 TBtu as per the analysis that NYSERDA provided to the utilities ahead of their filing, NYSERDA's analysis indicates a corresponding budget of $83M, while Con Edison's proposed budget was $189M. NYSERDA indicates that that a budget below Con Edison's proposal of $189M should suffice to meet Con Edison's target; or, conversely, that a budget set at the level proposed by Con Edison should allow a higher target to be delivered. NYSERDA provided two example scenarios in support of the proposed adjustment: The first would deliver 0.8 TBtu, consistent with Con Edison's target as proposed, at a budget level of around

$88M. The second would deliver almost 1.6 TBtu, or double the proposed target, at a budget level in line with Con Edison's proposal, at $189M.

NYSERDA estimated that the inverse cost shift would amount to around $11,000 (lifetime net present value) for a single-family GSHP replacing oil heating in New York City, or around $5,400-$8,000 (lifetime net present value) for this installation upstate. NYSERDA recommends that when determining the final utility heat pump program budget levels and assessing their cost effectiveness, the Commission considers the net impact of program budgets on ratepayers after taking account of the inverse cost shift. NYSERDA comments that for residential customers using standard residential rates and switching from oil heating to a heat pump, the lifetime inverse cost shift effect can in most cases be expected to exceed incentive levels that would reflect the "missing money" required to make the project a viable customer investment, and that heat pump program budgets will thus translate to significantly lower net burdens to ratepayers than the budget amounts suggest. NYSERDA agrees with the utilities that offering all customers the opportunity to choose rates that reflect cost causation more accurately is desirable but further comments that residential customers may not be comfortable choosing such revised rate structures given their typically more complex structure and limited visibility for customers as to whether their usage pattern would translate to bill savings.

NYSERDA comments that more clarity and detail are needed to address the tension between heat pump programs being simple, workable and uniform from the consumer standpoint while also affording utilities flexibility in the pursuit of their targets. NYSERDA asserts that statewide consistency can be achieved on critical market-enabling program features while providing utilities with this necessary flexibility, adding that incentive levels may need to vary by utility to accommodate the different market and consumer economics across New York State, but a range of other program parameters can be simplified and standardized statewide.

NYSERDA states that it does not consider the concept of a utility-only Joint Management Committee to be an adequate structure for program design and decision making for the statewide heat pump program, suggesting instead a collaboration between utilities and NYSERDA, with DPS guidance or oversight. NYSERDA recommends that the following program attributes be developed centrally (potentially by DPS and/or NYSERDA) and applied consistently across the state to support growth of the heat pump market: eligibility criteria, incentive structure, quality assurance and control, processes by which program changes would be made, among other program issues such as

equipment certification and installation best practice guidance. NYSERDA confirmed that it will also continue to develop non-financial programs that will accompany heat pump incentive programs.

Regarding eligibility criteria, NYSERDA proposed that all customer sectors and building vintages be eligible, regardless of their existing heating fuel and system, and that building shell and weatherization upgrades not be required. It further proposed which types of heat pump technologies, system designs and usages should be eligible for inclusion in heat pump programs. Regarding incentive structure, NYSERDA recommends that incentives be provided as upfront rebates, as opposed to payments over a period of time, and that consideration is given to adoption of a unit of incentive quantification other than nominal ton of installed (nameplate) capacity, particularly for large-scale commercial systems, suggesting two alternatives for small-scale incentives: Manual J design load or deemed lifetime MMBtu of net onsite energy savings.

For large-scale commercial systems, NYSERDA recommends that incentive categories be set up to differentiate incentives by utility, welcoming the utilities' proposal to structure incentives as three geographical regions across the state, by sector/size (with a 10-ton installation size cut-off point between small-scale and large-scale programs,) by technology and usage level, by existing heating fuel, and by building vintage. NYSERDA indicates that for ground source heat pumps, incentives made available to installers would be most appropriate, while an upstream or midstream incentive component, potentially targeting heat pump distributors, could be considered for air source heat pumps.

NYSERDA recommends that an incentive reduction structure such as a block structure be considered at a 2022 program review. Regarding quality assurance and control, NYSERDA has developed detailed QA/QC protocols for its heat pump programs and recommends that these be applied consistently across New York under the heat pump policy framework. Regarding a process for making ongoing program changes, NYSERDA recommends that the Commission set out a transparent and predictable process, and suggests that the NY-Sun process provides a good model. Additionally, NYSERDA agrees with the utilities' proposal to plan for a full program review. Regarding other program design and implementation issues, NYSERDA recommends drawing upon the existing NYSERDA ground source heat pump rebate program manual.

NYSERDA confirmed that it will also continue to develop non-financial programs that will accompany heat pump incentive programs, and in an effort to ensure continuity in incentives, indicates that, if a utility is not ready to transition entirely to the new statewide framework in January 2020, NYSERDA would

continue to offer the current CEF heat pump programs for customers in that service territory until June 2020.

RHN asserts that a minimum threshold should be set at the current incentive levels to give certainty to the marketplace, and that incentives must be funded at higher levels in order to increase adoption rates and move the market to scale. It requests that the paperwork and steps involved in accessing heat pump rebates be limited, and requests that the requirement that applicants upload building permits and certificate of occupancy (or certificate of compliance), or a letter from the authority having jurisdiction be discontinued. RHN further requests that the utilities use their unique role and legal abilities to provide financing that is not tied to individuals' credit scores or burdens them with further debt.

RHN recommends that the Commission require as much consistency as possible between incentive programs to keep them easy to convey for marketing purposes, and suggests that variations be limited by region, as necessary. It also encouraged the Commission to direct utilities to pair their heat pump incentives with building envelope improvement incentives and suggests that it is too soon to use a declining block structure for incentives, as proposed by the utilities. RHN also recommends that NYSERDA or the utilities create a special incentive program targeting gas customers with old gas furnaces (15 years or older) to encourage those customers to convert to heat pumps, and that oil-to-gas conversions should receive no incentives.

If the utilities will be taking over the heat pump programs, RHN has indicates that the Commission must ensure that all utilities have fully functional heat pump incentive programs in place by January 1, 2020, and that the new incentive levels and criteria are published by Oct 1, 2019; otherwise, NYSERDA must extend its timeframe for continuing to offer its incentives months in advance of January 1, 2020. Additionally, it identifies a need for an improved version of on-bill payment for upfront costs that will eliminate credit checks, reduce debt, and create better access to efficiency and renewable thermal, and it urges the Commission to order the utilities to develop inclusive finance offerings.

RHN indicates that current law requires the connection of customers within 100 feet of a natural gas pipeline and recommends that the Commission should not allow more generous connection terms. It further recommends that the Commission order an update to TRM savings calculations for ground source heat pumps to properly reflect actual/measured savings seen in the field, and that more accurate standardized efficiencies should be developed.

The City generally supports an expansion of heat pumps and cites the health benefits of heat pumps in their avoidance of onsite fossil fuel combustion and associated pollutant and greenhouse gas emissions, as well as the more efficient heat transfer advantage these devices have over legacy HVAC installations. The City recommends that heat pump adoption should be coupled with building envelope retrofits to reduce inefficient energy use.

The City favors imminent actions to install heat pumps, rather than delaying this deployment to wait for the availability of large-scale renewable sources of electrical power in New York City, and supports all efforts to eliminate market barriers to their adoption. The City identifies the high costs of incorporating heat pumps into existing buildings (due to heat pump incompatibility with existing plumbing and ductwork and their necessary replacement), the relatively high costs of winter operation (compared to natural gas heating systems), and inadequate understanding about heat pumps by retailers, contractors, and customers as significant market barriers to heat pump adoption.

The City finds the Utility Proposal inadequate and offers several recommendations for improvement. The City endorsed a per-kilowatt-hour bill credit based on the $48 million "kicker incentive" proposed by Con Edison to encourage heat pump adoption by defraying operating costs. The City contended that not only would such a credit fulfill the Commission directive to incentivize space cooling programs, but in its application to heat pump adoption, it would encourage efficient heating technology as well.

Moreover, the City argues that a bill credit constitutes the most reasonable incentive method presently available given the relative absence of adequate information necessary to design an equivalent incentive through the traditional ratemaking process. The City notes that an appropriate bill credit amount would have to be determined in a technical conference and that an incentive availability of three to five years is a reasonable period to demonstrate marketplace viability of heat pumps.

The City also notes recent municipal efforts to establish new codes and standards for energy efficiency, and collaboration with manufacturers, installers, and property owners and managers to develop the necessary training for installation.

4. LMI Portfolio

AEA indicates that there is simply too little detail in the Utility Proposal on LMI programs and on the collaboration between NYSERDA and the utilities to comment effectively and fully. AEA did agree that program funding should reflect the

proportionate share of residential units in multifamily buildings in each utility territory. It suggests the use of census tract or community-wide and other innovative approaches for the delivery of energy efficiency. LMI populations should have access to incentives for heat pumps, emphasizing that they must include program standards or requirements ensuring affordability post-conversion if heating that was previously included in rent then becomes part of the tenant's individual utility bill. AEA indicates that coordination with the existing Weatherization Assistance Program (WAP) and Low-Income Home Energy Assistance Program (LIHEAP) is critical and that coordination should include NYS Homes and Community Renewal (NYSHCR) and the Office of Temporary and Disability Assistance (OTDA).

AEA further suggests that the NY Green Bank can further the deployment of efficiency and building retrofits by providing an additional layer of confidence to the market. It advocated that other avenues for support of innovative financial products for LMI be pursued, including collaboration between the NY Green Bank and utilities in conjunction with third party providers.

AGREE and **RHN** agrees with the utilities' proposal that NYSERDA should run a separate LMI focused program that would be additive to the utility's basic heat pump incentives, and RHN recommends that the Commission direct the utilities and NYSERDA to collaborate with LMI stakeholders and affordable housing providers to co-design programs.

EDA expresses frustration with the continued request for comments and engagement by its member organizations without what it considers meaningful action or response on the input they provided. EDA commends NYSERDA and the DPS for holding an additional series of stakeholder forums and for compiling the recommendations heard at those events into a summary report. It indicates being disappointed that the utilities offer little detail about their intended approach to LMI programs and largely ignored the recommendations developed at the LMI stakeholder forums.

Energy Efficiency Advocates and **AEA** supports the Commission's dedication of at least 20% of incremental efficiency funding to LMI programs and urges the Commission to explore ways to direct more resources to LMI programs above and beyond this target. Energy Efficiency Advocates recommends that 40% be allocated specifically to affordable multifamily buildings. It recommends that the Commission affirm this requirement of a statewide ratepayer LMI implementation plan to be filed by the Joint Utilities and NYSERDA 60 days following

the issuance of an order approving budgets and targets and further recommends that stakeholders be provided with the opportunity to review and comment on the LMI implementation plan. Energy Efficiency Advocates comment that the Utility Proposal did not provide information about how LMI programs will be rolled out in each utility service area, and that details on incentive amounts and strategies, service delivery, eligibility requirements, and eligibility verification were also missing.

Energy Efficiency Advocates note that identifying customers for enrollment in utility LMI efficiency programs and referrals to EmPower have been a consistent challenge and is one of the key issues New York must address as part of the LMI Portfolio. Energy Efficiency Advocates further state that it is unclear when cost-effectiveness testing will occur for this sector, to what extent differences within the state will be reflected, and whether this testing will provide information useful for targeting LMI efforts. Energy Efficiency Advocates asserts that benefit-cost analysis can help to guide LMI energy efficiency investments to the most effective.

Energy Efficiency Advocates also expresses concern that Con Edison's proposal to exclude LMI savings from its set of EAMs for incentivizing energy efficiency program performance will result in insufficient prioritization of programs targeting this customer segment.

Energy Efficiency Advocates recommends that the Commission should establish program funding policies that will encourage utilities to go above and beyond the baseline LMI, and that all utilities have two EAMs for LMI: one that encourages annual and lifetime savings for low-income customers and similar one for moderate-income customers. It also recommends that NYSERDA and the utilities be required to explicitly design LMI efficiency programs to address the barriers that are most prevalent in each utility's service territory. Further, it recommends that the utilities be required to regularly report energy efficiency savings, expenditures, and participation metrics for its programs serving LMI customers.

EEFA NY generally supports the Commission's LMI initiatives, and made the following recommendations: 1) the budgets and targets established by the Commission should be floors and not ceilings for each utility, and that the Commission clarify that utilities are encouraged to pursue all cost-effective energy efficiency and to treat efficiency as the emissions-free, preferable resource; 2) the Commission should direct the Joint Utilities and NYSERDA to work with stakeholders to develop the LMI Portfolio programs, and to develop mechanisms for evaluating the programs' effectiveness, with metrics that distinguish between low-income and moderate-income programs; 3)

heat pump incentives should be made available to existing utility gas customers, and not just to non-gas customers, with the Commission authorizing supplemental funding as needed if transitioning from gas to heat pumps is less cost-effective than fuel oils to heat pumps; 4) utility affordability programs and efficiency and clean energy program offerings should be working; 5) NY Green Bank should be an essential partner in the effort to reduce financial barriers, and work closely with NYS Homes and Community Renewal (HCR) to support New York's mortgage agency in a significant and meaningful underwriting effort that will support market transformation in efficiency in affordable housing, and 6) stakeholders must have the opportunity to review and respond to the individual utility implementation plans.

EEFA NY recommends that the Commission direct NYSERDA and the Joint Utilities to propose a schedule and process for developing the LMI Portfolio components described in the Utility Proposal, and recommends that the following information be included in the implementation plans: 1) LMI Portfolio evaluation metrics, including those that capture program participation by affordable multifamily buildings; 2) Improved application of the benefit cost analysis (BCA) framework to account for fuel switching, other fuel benefits, and non-energy benefits; 3) Stakeholder feedback and engagement in the development of any methodology for an LMI-specific benefit-cost analysis framework, and 4) Specific plans for revisions to the TRM to update and improve the TRM to account for synergistic and interactive measures and fuel switching.

EEFA NY strongly supports the development of robust metrics, and suggests that the use of the Customer-Facing Hub should also be tracked. It recommends that the Commission direct the utilities to document their progress in serving LMI populations, and that the Commission should consider directing the adoption of an EAM, or scorecard as a starting point, to incentivize utilities for serving this population above the required level.

EEFA NY generally supports the utilities' proposed approach to the Customer Facing Hub but questioned how target segments will be notified of the existence and availability of the Hub, and comments that the development of the Hub must include a robust outreach and engagement plan that makes customers and those that serve them aware of its availability.

EEFA NY recommends that the Commission direct the Joint Utilities and NYSERDA to submit a detailed roadmap and plan for income verification as part of the LMI Portfolio implementation plan, suggesting that identifying eligible affordable housing by using proxies for affordable housing is a sensible approach. Regarding the proposal that NYSERDA will manage the administrative infrastructure for programs serving buildings

with 1-4 units but not larger multifamily buildings, EEFA NY comments that there should be processes in place for sharing of data or transfer of data management responsibilities to meet program design parameters as needed. Regarding the utilities and NYSERDA working with other social service and affordable housing programs and agencies, EEFA NY suggests that the Interagency Low-Income Energy Work Group would be an ideal forum for such collaboration.

EEFA NY indicates that multifamily programs should include whole building approaches as well as measure-specific and in-unit programs and suggests a form of collaborative approaches by NYSERDA and the utilities. It suggests that multifamily programs should also be expanded to include buildings with 2-4 units, and that community-based efforts are worthy of exploration, stressing that the delivery of efficiency should be accomplished through actual installation.

EEFA NY supports the evaluation of LMI program BCAs separately from other program BCAs and the allowance for LMI program BCAs to score below 1.0, although the inclusion of nonenergy benefits would better reflect the contributions of energy efficiency to the environmental and social public good, and that the TRM requires significant revisions to align it with updated methodologies that are more appropriate.

EEFA NY supports the LMI Program Council but suggests a more robust process for stakeholder engagement, indicating that it should include members other than the utilities and NYSERDA. EEFA NY also supports using the Interagency Low-Income Energy Work Group to help inform collaborative LMI programming. EEFA NY strongly recommends that any Commission decisions made after receiving input on the record from advisory groups or other stakeholder engagement should be as transparent as possible and that, if recommendations are not adopted, NYSERDA should provide notice and a clear rationale. To the extent that there are public meetings, EEFA NY recommends the meetings be held at times accessible to the public.

EEFA NY recommends that the Commission consider raising the LMI percentage to 40%. EEFA NY comments that the Accelerated Efficiency Order required the utilities and NYSERDA consider directing 40% of incremental LMI program budgets to multifamily programs, and that the utilities' filing contained no such proposal. EEFA NY suggests that currently approved LMI funding levels should be viewed as a floor. EEFA NY also recommends that NYSERDA and the utilities develop an evaluation process to determine what portion of funds ultimately goes toward LMI programs.

NY-GEO recommends the adoption of substantial support for addressing upfront costs for ground source heat pump

installations, including strong incentives, third party ownership and ways to bring installations to the LMI market. It comments that a 6.25-year payback may be inappropriate for heat pumps considering their marketing life is in its infancy, and that NYSERDA's assumption that the ground source heat pump market would be able to deliver cost efficiencies at least equal to the value of expiring tax credits is optimistic. NY-GEO requests that the federal tax credit be taken out of the NYSERDA's missing money analysis because the tax credit will exist only for the first year of the 2021 to 2025 program time span. Higher incentives than NYSERDA's current $1,500 per ton are warranted to build the market, and it requests that feedback from the Heat Smart programs be compiled and factored into the calculations of incentives.

NY-GEO asserts that incentives are currently too low to be effective in the 1 to 4 family LMI market, and it proposed a Net Zero LMI Neighborhood program to be available to LMI residential communities across New York State as a pilot. The program would be designed and offers by NYSERDA, involve projects selected for blocks or block groups, and access a combination of conservation measures, solar panels, ground source heat pumps and EV charging/vehicle discounts designed to provide a minimum of a 10% reduction in overall energy costs to residents. The energy costs for owners would consist of on-bill financing for solar panels and geothermal installation after rebates, payments to utilities for fixed costs, loan/lease costs for EVs, and possible support from HEAP.

NY-GEO recommends the adoption of an incentive structure that balances the importance of locational and other granular factors with the importance of encouraging market penetration by virtue of being easy for property owners to understand and indicates that the four-tier system laid out by NYSERDA in its missing money analysis provides an acceptable level of variation for rebate levels. It comments, however, that the NYSERDA rebate program does yield some anomalies that reward less efficient installations with higher incentives.

NYSERDA supports the concept for the ratepayer-funded LMI portfolio outlined by the utilities in the Utility Proposal, noting that NYSERDA and the utilities continue to coordinate on the planning for the LMI portfolio. NYSERDA supports the utilities' proposal for the development of a customer-facing hub and indicates being in favor of pursuing statewide branding approach in conjunction with each utility's localized marketing. NYSERDA indicates a willingness to host the customer hub and to serve as its primary administrator, noting that successful implementation of the customer hub will require the participation of and co-funding from each of the utilities in

the design and ongoing maintenance of the hub and associated outreach and marketing efforts. NYSERDA comments that it would work with the utilities to develop a method for equitably sharing the costs associated with the hub and the necessary outreach and marketing efforts.

NYSERDA supports the utilities' request for flexibility with respect to the proportional distribution of budgets and targets by fuel type and recommends that the utilities fund energy efficiency improvements to the building envelope for electric customers regardless of primary heating fuel. NYSERDA comments that the presumptive electric and gas efficiency budgets and targets outlined in the Accelerated Efficiency Order are heavily weighted towards electric and suggests that a more appropriate distribution of funds would be closer to 70% gas and 30% electric.

NYSERDA agrees with the concept of utilities contributing incremental funding to increase the reach of the programs in their respective service territories. NYSERDA expresses an interest in exploring the incorporation of a direct install approach into these programs to provide energy efficiency opportunities to LMI customers that may not be able to undertake more comprehensive energy efficiency improvements. NYSERDA also recommends that better alignment of programs on Long Island take place with respect to statewide consistency in program design.

NYSERDA agrees that the affordable multifamily market segment presents the potential for substantial energy savings, and further supports the utilities' proposal that complementary efforts between NYSERDA and the utilities will be necessary to make progress. NYSERDA indicates that it is prepared to administer a default affordable multifamily energy efficiency offering through its Multifamily Performance Program in utility territories that will not have a utility-administered affordable multifamily program, and it encouraged utilities to develop more comprehensive multifamily program models. Additionally, NYSERDA indicates that it will provide complementary offerings to utility-funded programs targeting affordable multifamily buildings, which could include predevelopment and technical assistance, performance incentives for deeper levels of efficiency, and finance solutions.

NYSERDA comments that it will develop and fund an investment plan through the CEF to advance the adoption of heat pump technology in the LMI market segment by demonstrating heat pump solutions in various use cases, and will work with the utilities and Staff to determine an appropriate deployment mechanism and funding source for any models that prove to be effective at increasing access to heat pump technology.

NYSERDA indicates the need to develop an approach to sharing customer information necessary to administer the LMI

portfolio. NYSERDA notes that additional work will be required to identify and track the benefits to disadvantaged communities associated with the energy efficiency and clean energy investments made across the State and recommends that the Commission be proactive in establishing the expectation that a process for including utility program data in this tracking will be developed. NYSERDA further recommends that the Commission require that the utilities and NYSERDA jointly develop and adopt a standard data sharing agreement for the purpose of administration of the LMI portfolio to ensure efficiency and consistency across program administrators.

NYSERDA comments that, based on feedback received in a series of LMI stakeholder forums NYSERDA and DPS identifies 16 areas of specific input that were related to ratepayer funded LMI portfolio, and NYSERDA and DPS recommends that the utilities seek to address these recommendations in the Utility Proposal. NYSERDA states that, over the course of developing the portfolio and associated implementation plan, NYSERDA will work with the utilities to address the areas of feedback that were left unaddressed in the Utility Proposal. Additionally, NYSERDA supports the utilities' proposal for an LMI Program Council composed of the utilities and NYSERDA to plan and calibrate the portfolio over time, and it recommends that the development of the LMI Program Council be coordinated closely with the LMI advisory group, which DPS and NYSERDA outlined in their Assessment of Input Received at LMI Stakeholder Forums, filed January 31, 2019.

The City states that energy efficiency improvements are prohibitively expensive for many owners of low-income or rent-controlled buildings, a problem compounded by the provisions of incentives and other financial support from Con Edison on project completion. The City offers two possible solutions to this problem. First, the City proposes that Con Edison provide upfront funding for a limited number of multifamily residential energy efficiency projects – on a trial basis to start – with funds held in an escrow account until project completion, thereby permitting increased cash flow for property owners necessary to make energy efficiency improvements before their completion. Second, the City also proposes that Con Edison adopt NYSERDA's approach in issuing confirmation letters of energy efficiency improvement projects for multifamily residences before they are undertaken to secure private capital financing of a greater number of projects.

5. EAMs

AEA comments that there should be some degree of consistency in the metrics across utilities on what EAMs are used to incentivize and how they're measured and recommends that the Commission direct that there be an exploration of an EAM for rewarding progress in serving low- and moderate-income populations beyond the 20% of funds required under the December 2018 Order. Additionally, it recommends that utilities should be required to track progress in serving the LMI population and that this tracking should distinguish between low- and moderate-income populations.

Energy Efficiency Advocates recommends that the Commission should direct the utilities to establish EAMs consistently across the state, in order to apply best practices state-wide, reduce confusion, enable stakeholder input, and maximize the value of EAMs, with the result being a set of cores EAMs to be adopted by all the Joint Utilities. It suggests that Con Edison's currently proposed EAMs, which included three fuel-neutral measures and incorporated shared cost savings and lifetime energy savings considerations, could serve as basis for the set to be adopted by all utilities with some refinement. Energy Efficiency Advocates expresses concern that Con Edison's peak reduction EAM appears to be unnecessarily complicated and without corresponding gas peak reduction measure. It also indicates that several of Con Edison's EAMs overlap, that they exclude LMI, and that they suggest a stepwise incentive formulation, rather than a continuous one, providing discontinuous incentives that cut-off at a maximum level of performance.

Energy Efficiency Advocates recommends that the Commission expand its set of principles for the design of EAMs to ensure that EAMs are clearly tied to policy goals, unambiguously defined, and easily quantifiable, and that EAM targets are calibrated to ensure that attainment is largely free of outside influence. It recommends setting incentive formulas that determine how much the utility is compensated at different levels of achievement to be consistent with the desired outcome and calibrated to effectively incent utility performance, and further suggests using continuous, rather than stepwise incentive formulas without ceilings for potential earnings and requiring that program investments be cost-effective in order to qualify for incentive earnings. It further recommends that the Commission establish a set of EAMs in a generic docket, with additional EAMs possible if warranted. It proposed the following as the eight core EAMs: Annual MMBtu, Electric Peak Reduction,

Gas Peak Reduction, GHG Emissions Reduction, Electric DER Utilization, Share the Savings, Low income and Moderate income.

MI agrees with a requirement that EAMs not impose any additional costs on customers and, instead, be limited to saving-sharing mechanisms. While suggesting that EAMs may not even be deemed necessary and desirable in this context, MI proposes that EAMs be limited to exemplary performance that is in excess of Commission-established goals and that subpar performance should be penalized. MI also expresses concern regarding informational asymmetries associated with energy efficiency EAMS because of which a utility could propose cost-sharing targets that require little to no effort to achieve.

The City expresses concern with the redundancy of some the EAMs, an assessment also expresses in recent Staff testimony in the pending Con Edison rate cases. The City proposes an alternative performance-based ratemaking incentive mechanism in which benefits are shared between customers and shareholders. The City contended that the primary benefit of such a system is the elimination of limits on annual positive revenue adjustment that may inhibit Con Edison's efforts by deterring more extensive actions in achieving energy efficiency.

The City also expresses apprehension regarding the continued use of outcome-based incentives, particularly in view of statements by Con Edison in collaborative discussions on energy efficiency in the company's 2016 rate case, in which Con Edison – the City alleged – declined to alter its conduct or activities to incur such revenue adjustments. The City notes that, ideally, outcome-based incentives should encourage utilities to undertake market transformation efforts to encourage energy efficiency, but that in practice, they are prone to reward shareholders for results achieved not by direct company actions, but independently through customer behavior. The City opposed such ratemaking scenarios as defective and unmeritorious, and contends they result in unjust and unreasonable rates for customers. Accordingly, the City states its support for moderate, focused, and nonduplicative shareholder incentives designed to directly foster utility actions and advance policy goals.

6. Company-Specific Comments

AEA applauds Con Edison for providing significantly more detail than the other utilities in the Utility Proposal and supports its proposal to help achieve fuel neutral program implementation.

NY-GEO commends the informative detail of Central Hudson's chapter but sought clarification of its projected average incentive figures. Additionally, it expresses concern regarding the projected role of ground source heat pumps within the total mix of air source heat pumps, mini-splits and ground source heat pumps. NY-GEO comments that the projected energy savings and installations figures in the Utility Proposal ranged from an average of 21.2 MMBtu for Central Hudson to an average of 68.7 MMBtu for Orange & Rockland, whose service area is adjacent to Central Hudson's, and sought an explanation for the variance in the savings per installation figures from year to year. NY-GEO was discouraged by the conflicting figures within Central Hudson's chapter with respect to its heat pump program mix of technologies.

NY-GEO commends Con Edison for its intention to meet their originally assigned TBtu target but expresses concern regarding Con Edison's mentioning of room air conditioners as a technology to encourage through a kicker incentive. While it encouraged Con Edison to continue supporting adequate incentive levels, NY-GEO states a belief that the company will not need to pay as many of those incentives to reach their TBtu goal, and may be able to adjust their budget downward, because heating loads and resulting energy savings are higher than NYSERDA's updated numbers. It further commends Con Edison for proposing "Cross-Commodity EAMs" for all-fuels increased efficiency (Annual MMBtu), an LMI focused EAM (Share the Savings EAM), and a CO2e emissions reduction EAM.

NY-GEO comments that National Fuel Gas Distribution Corporation's attempt to rework the kicker regime to apply to its system appears to be labored and forced, and that a kicker incentive does not seem to apply in its service territory.

NY-GEO expresses no support for National Grid's reduction of its installation goal by more than 9,500 installations and its energy savings goal by 549 GBtu, particularly given the presence and success of the Ground Up Alliance in its service territory. NY-GEO did express support for the KEDLI and KEDNY rate case proposals.

NY-GEO recommends against accepting NYSEG's and RG&E's proposed decreases in savings goals, stating that the utilities primarily referenced data from a Maine air source heat pump program. NY-GEO comments that despite Maine's program being limited to ductless mini-splits, it succeeded in installing over 30,000 units over a period of five years, contrasted with NYSEG's proposal call for 16,308 total installations.

NY-GEO commends Orange & Rockland for accepting its original heat pump savings target.

7. Other

Energy Efficiency Advocates recommend that utilities consider cost-effectiveness when designing each program, with the goal of achieving all cost-effectiveness savings available from that program (or customer type or market type addressed by that program,) and that efficiency programs that include overly expensive equipment should not be approved by the Commission, even if their net costs can fit within the net benefits of the total efficiency portfolio. The utilities BCA Handbooks should be updated to properly account for "other fuel savings," i.e., the savings of fuels that are not the primary target of the efficiency program. It noted that the January 2016 BCA Order categorizes other fuel savings as "operational and societal non-energy benefits (NEBs)" and that the Order is clear that monetizable NEBs should be included in the BCA and included in the utilities' BCA handbooks while the utility BCA handbooks do not address other fuel savings.

It also recommended that the Commission direct the utilities to update their BCA Handbooks to account for other NEBs such as low- and moderate-income NEBs and benefits such as reduced sick days, improved productivity, reduced environmental and safety costs, and improved system resilience. Energy Efficiency Advocates recommended that the Commission direct the utilities to update their BCA Handbooks to properly account for the benefits of avoiding gas infrastructure that is increasingly likely to become obsolete, for the lifecycle GHG emissions from the gas and electricity industries, the value of avoiding new gas infrastructure, even that which has not yet been identified. Additionally, it recommended that the Commission consider whether the BCA Order should be revisited considering the passage of the Climate Leadership and Community Protection Act (CLCPA).

Energy Efficiency Advocates commented that the TRM needs improvement and updates, noting that it is unable to support the development of synergistic packages of energy efficiency measures and that it does not have protocols for calculating savings associated with switching from equipment that consumes fuel to electricity measures. Regarding the TRM, Energy Efficiency Advocates recommended that the Commission direct the utilities to work with NYSERDA and the TRM Committee to investigate opportunities for implementing a modern framework of open source standardized simulation-based calculation methods supporting an expanding range of state-of-the-art energy efficiency technologies, and to update the TRM to support analyses of electrification and packages of efficiency measures within a single dwelling, business, or program . It also suggested that meaningful and timely input from energy

efficiency stakeholders should be incorporated into the updating of the TRM.

Energy Efficiency Advocates commented that reforms are needed to utility gas system planning processes to ensure that they are consistent with the state's climate policies and fully leverage all cost-effective non-pipe solutions, and, as such, recommended that gas efficiency programs, non-pipe solutions, and long-term gas infrastructure planning should be coordinated across the state. It further recommended that a policy framework should be developed to ensure that gas supply decisions and infrastructure investments are consistent with the State's energy, climate policy, and GHG reduction goals, and that this framework should incorporate a cost-benefit analysis that reflects a long-term societal perspective. It also recommended that the Commission should require that utilities improve the robustness, transparency, and organization of their processes for reviewing gas non-pipe solutions and gas-side investments in general, and that these processes should support and expand upon the Smart Solutions remedies. Lastly, it recommended that the Commission should require gas utilities to pursue all cost-effective energy efficiency measures.

NYPA requests that, like the heat pump implementation plans, the kicker implementation plans contain information related to differences in incentive levels, eligibility, application processes, and implementation timelines for residential and commercial customers.

NY-GEO recommends the adoption of a process to re-examine methane greenhouse gas emissions including the timeframe used and leakage rates assumed and requested that the Commission immediately convene a process for accurately recalibrating the CO2e values used for natural gas, fuel oil and propane. NY-GEO did commend the Commission and the Governor for cementing the relationship between increasing energy efficiency and reducing greenhouse gas (GHG) emissions as expressed in the Accelerated Efficiency Order, and further supported the adoption of an all-fuels approach to efficiency programs. It also recommended the formation and execution of a plan to integrate the initiatives adopted under 18-M-0084 in current rate cases as well in adopted rate cases through a reopening mechanism.

NY-GEO recommends the development of a detailed glide path to a net zero carbon emission building code for New York and asked the Commission to consider actions it can take, or direct NYSERDA to take, that will give the utilities and the building industry a clearer picture of the path and timeline for getting to a net zero building code. It also recommended the development of a statewide online pre-screening tool so building

owners can easily access data on the geothermal potential of their properties, building on models developed for New York City's Local Law 6 and the NYPA/NYSERDA Geothermal Clean Energy Challenge. It requested that the utilities consider developing a similar tool for their respective territory on their websites.

NY-GEO recommends the adoption of kWh as opposed to Btus as the unified energy efficiency unit of measurement, as well as the adoption of a process to prepare for decapitalization of the natural gas utility industry that minimizes the exposure of ratepayers.

Replies to Comments

1. Energy Efficiency Targets and Budgets

The **NY Utilities** noted that several parties called for more aggressive energy efficiency program budgets and targets, the pursuit of all cost-effective opportunities, and greater budget flexibility for utility-administered energy efficiency programs. The NY Utilities advised caution and cited several limitations to establishing budget caps and targets beyond five years based on historical cost information, but agreed that when appropriate, utilities should be granted additional funding to pursue more intensive energy efficiency programs and called for the ability to recover incremental costs of such actions. The NY Utilities also indicated appreciation for suggestions that support greater program administration flexibility.

NYSERDA agreed with the comments of the NRDC and the Alliance for Clean Energy New York that the CLCPA legislation heightens the urgency and need for aggressive progress on energy efficiency, including heat pumps. NYSERDA also agreed with the comments of the Energy Efficiency Advocates that gas efficiency and heat pumps can help reduce GHG emissions from buildings and can help utilities manage and alleviate gas supply and delivery constraints, and indicated that it intends to support policy and planning studies to evaluate changing conditions in the New York natural gas market on the path to carbon neutrality, including the role of energy efficiency and the electrification of heating and cooling in buildings. With respect to near-term energy efficiency programs, NYSERDA recommends that utilities direct incentives toward building envelope efficiency measures, smart thermostats, building energy controls, and thermal energy storage, and it urged that customers should be eligible for the statewide heat pump framework incentives regardless of their existing heating fuel and system, including customers that currently heat with natural gas.

EEFA NY agreed with NYSERDA's observation that targets and budgets are weighted more heavily towards electric savings over gas while the potential for savings in buildings is greater for heating fuels than electricity, and that the NY Utilities should have some flexibility to move funding between electric and gas programs, although minimum achievements in each should be required. EEFA NY also supported NYSERDA's recommendation that the NY Utilities develop whole-building efficiency offerings that include common areas and central system measures, as well as in-unit efficiency measures. EEFA NY also supported the City of New York's recommendations that Con Edison provide financing incentives in support of leveraging private capital, and adopt NYSERDA's process of issuing confirmation letters to third-party financiers that a project will receive energy efficiency funding from Con Edison.

AEA observed that many commenters pointed to the lack of detail in the Utility Proposal and the need for further stakeholder engagement as implementation plans are developed. AEA further indicated that an ongoing process, preferably via an advisory group structure, will be necessary, and that that the Technical Resource Manual and Benefit Cost Analysis need revision to be more accurate, up-to-date and reflective of state policy for climate change and the need to address fuel use for building heating and cooling. AEA opposed the comments of MI that costs for particular programs must be solely recovered from the rate classes that benefit from those particular programs. AEA asserted that the general framework for volumetric charges feeding into a common pool that then funds a variety of programs for a variety of customers has served the state well in the past. AEA did not express support for, and requested clarification of, NYSERDA's comment that the Commission could consider establishing limitations to the utilities' budget flexibility to ensure that neither electric nor gas customers are funding significantly more energy efficiency than initially authorized.

2. Collaboration

The **NY Utilities** concurred with several comments calling for greater collaboration between stakeholders and cite ongoing between the utilities and NYSERDA and the collaboration requirements of the CLCPA as examples of efforts to advance state energy policy. The utilities also expressed support for several collaborative opportunities identified by NYSERDA but endorsed efforts that exploit organizational strengths, avoid duplication, rely on manageable goals, allow flexibility, minimizes market confusion, avoids strict dictation of

coordinated efforts in favor of more unforced development, and which are tailored to the resources and capacities of each utility.

NYSERDA reaffirmed its commitment to continuing to deliver, in coordination with the utilities, heat pump market facilitation initiatives including workforce and supply chain development and community awareness. NYSERDA further indicated that supporting clean energy workforce development is a strategic priority for NYSERDA.

AEA observed that stakeholders do not know if the utilities agree with NYSERDA's comments related to collaboration between it and the utilities and suggested that additional stakeholder input is needed. AEA also stated that continued desire to have NYSERDA responsible for specific savings goals will hamper collaborative efforts.

3. Accelerated Heat Pump Deployment

The **NY Utilities** supported the development of incentives for heat pump adoption specific to each service territory proposed by Dandelion, agreeing that there is a significant variation in installation costs statewide. The utilities also concurred with opposition to the premature adoption of a declining block incentive structure for heat pumps articulated by Solar Tompkins/HeatSmart, noting that adequate adoption should be encouraged by establishing immediately sufficient incentive levels, rather than deciding how to reduce these should be reduced over time (which could compromise market and customer confidence). Regarding comments by several parties in favor of incentives for the conversion of natural gas heating systems to heat pumps, the NY Utilities requested flexibility in determining cost-effective program designs that more carefully consider factors such as customer and fuel eligibility and the various natural gas systems of its members. The NY Utilities also requested the flexibility in incentive adjustment, eligibility criteria, contractor relationships, and other administrative concerns, noting that this program management leeway is necessary to respond to local market conditions in the adoption of new energy technologies, and to ensure market maturation.

The NY Utilities identified and investigated three inconsistences by NYSERDA in its development of budgets and targets for heat pump deployment in the Con Edison service territory, and also observed that NYSERDA based earlier estimates of heat pump incentives on "missing money" but subsequently abandoned that approach without explaining the

apparent obsolescence of this approach, or what market conditions or analysis precipitated its rejection. Con Edison reiterated its preference for more generous incentives as proposed in its budget to encourage adequate market growth. The company also criticized the limitations of NYSERDA's approach to developing heat pump program incentives and budgets, which it alleges are based on incomplete market experiences with inadequate assessments involving limited customer segments and technologies. The NY Utilities also noted that NYSERDA has been inconsistent in its measure-specific forecasts of heat pump technology adoption, moving from predictions of a more equally distributed adoption of measures, to scenarios that involve a higher proportion of mini-splits, without explanation. This approach is opposed by Con Edison, which favors a more diverse mix that better reflects its market solicitation efforts. The NY Utilities did commend NYSERDA for corrections to its previous analysis of heat pump savings, and Con Edison reiterated both its budget request and its commitment to provide 0.8 TBtu of the statewide goal through company heat pump programs.

The NY Utilities explained that reductions to the heat pump installations and savings targets for Niagara Mohawk resulted from uncertainties in savings methodologies, market growth, and incentives at the time of filing that caused it to forecast only market-rate residential applications (excluding commercial and LMI applications). However, the NY Utilities noted that Niagara Mohawk will continue to investigate feasibility of commercial heat pump installations, as well as other efforts to advance state energy goals related to heating technology.

NYSERDA agreed with many of the stakeholders' comments that a robust policy framework should provide for a heat pump program that is as consistent as possible across the state in order to facilitate ease of participation for consumers and contractors, to reduce cost, and to enable market development, acknowledging that some variability of incentive amounts across regions, within a uniform program framework, is appropriate to reflect cost and other differences between regions. In agreement with stakeholders' comments, NYSERDA recognized the importance of establishing a strong link between the statewide heat pump program and promotion of building envelope efficiency.

NYSERDA agreed with the AEA that building envelope efficiency, carried out prior to or at the same time as installation of a heat pump, could reduce the size of the heat pump needed to serve the building's heating and cooling needs, reducing the customer's equipment cost and helping to mitigate the heat pump's impact on winter peak demand. NYSERDA reiterated its commitment to ensure an orderly transition and continuity in incentives from the current heat pump programs to the statewide framework, noting that if any utility is not ready to transition

to the new framework by January 2020, NYSERDA would continue to offer the current Clean Energy Fund (CEF) heat pump programs for customers in that territory. NYSERDA indicated that it will take into consideration the recommendation from parties that a formal announcement of NYSERDA's plans for the CEF GSHP and ASHP programs be issued with sufficient notice in advance of any potential transition date(s) to the statewide framework.

In its reply comments, **NY-GEO** noted that subsequent to its July 2019 comments in this proceeding objecting to the revised full load hour and energy savings numbers submitted in NYSERDA's Update in May of 2019, it met with the Joint Utility TRM committee. While NY-GEO noted that there was a good exchange on data and methodology at the meeting, and a recognition that there are a number of areas where more data might lead to revisions in full load hour and energy savings calculations, NY-GEO continues to object that the revised heat load and energy savings numbers do not correspond with its members' experience in the field. NY-GEO observed that in NYSERDA's May Update, heat pump analysis used full load hour and load factor values that expressed the correlation between nominal heat pump size and annual load, applying a modification factor of 30%. NY-GEO asserted that NYSERDA proceeded to divide the equivalent full load hours by a factor when it should have multiplied the hours by the factor, and further suggested that a 20% adjustment factor is more appropriate. NY-GEO further asserted that NYSERDA's May report significantly undervalued the peak shaving potential of modern geothermal systems, and that the NYSERDA report incorrectly uses Seasonal Energy Efficiency Ratio (SEER) values for the counterfactual conventional A/C units, and instantaneous Energy Efficiency Ratio (EER) rating for the GSHP systems. NY-GEO commented that corrected data should lead to a significantly larger peak grid value for GSHP installations and this means significant savings for all ratepayers.

In reply to comments, **AEA** observed that the insufficient detail provided in the Utility Proposal precluded parties from offering substantive comments. AEA expressed disagreement with the assertion of ACE NY and AEEI that improvements to the building envelope increase initial costs and program complexity. In contrast, AEA asserted that shell improvements can be very cost-effective efficiency measures and are likely to reduce the size of the new heating and cooling equipment. AEA also observed that MI appear to focus on geothermal heat pumps without appreciating the full range of technologies that heat pump programs are meant to support. AEA stressed a need for an aggressive education and awareness campaign to ensure the benefits of cold climate heat pumps are understood, pointing to

NYSERDA's comment that, of over 60,000 air source heat pumps sold in New York State in 2017, less than 5 percent met or exceeded the minimum Heating Seasonal Performance Factor (HSPF) efficiency requirement currently specified by NEEP.

4. Low-to Moderate-Income (LMI) Portfolio

The **NY Utilities** suggested that it would be premature to increase LMI program funding beyond the percentages established in the Energy Efficiency Order as was suggested by several parties, as the Climate Action Council is expected to devote two years to determine LMI funding in accordance with the CLCPA. However, the NY Utilities noted that they remain committed to matching or exceeding the current energy efficiency program allocation for LMI portfolios.

The NY Utilities appreciated the NYSERDA recommendation of funding for building envelope energy efficiency improvements for customers regardless of heating technology and fuel but contends that fuel neutrality policy needs to consider several additional factors best assessed during program implementation.
The NY Utilities were supportive of several NYSERDA recommendations of coordinated and complementary work with the utilities, specifically plans to investigate direct installations for LMI customers in its EmPower NY and Assisted Home Performance programs and offering to develop complementary technical assistance, performance incentives, and financing for multifamily programs. NY Utilities also supported NYSERDA's plan to investigate direct installation for LMI customers in its EmPower NY and Assisted Home Performance programs and recommend coordinated and complementary work with the utilities in these efforts.

The NY Utilities supported the NYSERDA proposal to create and administrate an LMI customer information website in collaboration with NY Utilities, with a sharing of costs when appropriate, including incremental cost recovery of funds not otherwise authorized by the Commission. However, NY Utilities noted that several proposals by NYSERDA relating to customer information are redundant of current Commission Orders defining protection requirements of such data, adding also that two pending proceedings are investigating these issues. The utilities generally agreed with the NYSERDA proposal to use census tract-level information and other community surveys to improve identification of LMI customers but caution that an inflexible approach to this process would allow situations in which non-LMI customers residing in defined LMI districts are served by LMI programs.

Additionally, the NY Utilities suggested that a proposal by Energy Efficiency for All New Yorkers to create an LMI

stakeholder engagement group would increase administrative burdens and impede implementation.

In reply to comments by the Alliance for a Green Economy and Renewable Heat Now that NYSERDA should administer a separate program to incent heat pump adoption in the LMI market segment and that the program should be additive to the utilities' base heat pump incentives, **NYSERDA** clarified that it is not planning to administer a separate LMI heat pump rebate or incentive program through the CEF, and that its investments are intended to demonstrate and identify scalable models that support effective heat pump installations for LMI customers and building owners. NYSERDA was supportive of EDA's recommended eleven areas of stakeholder input that should be prioritized by the utilities and NYSERDA that address program design considerations as well as improved engagement processes, but noted that progress on these recommendations will require a collaborative process between the utilities, NYSERDA, and DPS.

AEA supported the City's suggestions on programs that can be provided by Con Edison, specifically programs that use utility efficiency dollars to leverage private financing for work in multifamily buildings, which is where the majority of low-income households reside.

5. Earnings Adjustment Mechanisms

In addressing a proposal by NRDC to establish a generic proceeding on EAMs, the **NY Utilities** noted that this would be redundant, as EAMs are currently and more appropriately established in individual rate cases. NY Utilities supported the continued implementation of EAMs to avoid disincentives to energy efficiency program overachievement.

AEA agreed with the City's urging that utilities be required to report at least twice a year on metrics showing results of efficiency efforts, including expenditures, savings achievements (broken down by geography and building type), LMI efforts, program changes and proposed programs changes.

6. Any Company-Specific Comments

NFG recommended that the Commission disregard the comments of NY-GEO that NFG's attempt to rework the kicker regime to apply to its system appears to be labored and forced, and that in the absence of discussion of a peak gas problem in NFG's service territory that the kicker might address, a kicker incentive does not seem to apply. NFG's reply indicated that it

had transparently documented its Kickers Proposal on the record, and also included necessary cost recovery details for the Commission's consideration. NFG further clarified that it does not have a "peak gas problem" in its service territory, and noted that the Commission's Accelerated Efficiency Order in this proceeding did not indicate that such a "problem" needed to be present in order to advance kickers.

7. Other

The **NY Utilities** responded that MI's argument that energy efficiency program cost recovery should be equitably allocated based on program participation ignores societal and environmental benefits provided by incentives for energy efficiency and heat pumps. In response to comments calling for changes to the BCA framework, the NY Utilities noted that the analysis used in developing the Utility Proposal reflects the current Commission-authorized approach and that any future changes to this framework should be enacted through the statewide process established in the REV proceeding. The NY Utilities generally supported comments requesting revisions of the TRM to improve its ability to measure more complex energy efficiency efforts, establish more useful baselines, and better reflect energy efficiency achievement through improved reporting.

State Environmental Quality Review Act

FINDINGS STATEMENT

January 16, 2020

Prepared in accordance with Article 8 – State Environmental Quality Review Act (SEQRA) of the Environmental Conservation Law and 6 NYCRR Part 617, the New York State Public Service Commission (Commission), as Lead Agency, makes the following findings.

Name of Action:	Comprehensive Energy Efficiency Initiative (Case 15-M-0252) Order Adopting Accelerated Energy Efficiency Targets
SEQRA Classification:	Unlisted Action
Location:	New York State/Statewide
Date of Final Generic Environmental Impact Statement:	February 6, 2015
FGEIS available at:	http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-m-0101

I. Purpose and Description of Action

In the attached order, the Commission adopts annual budgets and targets for utility-run energy efficiency programs in New York State for 2021 through 2025 and establishes policies associated with achievement of those targets. This is a continuation of enhanced energy efficiency activities that started with the February 26, 2015 Order Adopting Regulatory Policy Framework and Implementation Plan (REV Framework Order) in the Reforming the Energy Vision (REV) proceeding, which directed the electric utilities to plan and implement energy efficiency programs, and the June 19, 2015 Order Authorizing

Utility-Administered Gas Energy Efficiency Portfolios for Implementation Beginning January 1, 2016, which directed the gas utilities to also plan and implement such programs. These activities continued with the January 22, 2016 Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets for 2016 – 2018, the March 15, 2018 Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets for 2019 – 2020, and the December 13, 2018 Order Adopting Accelerated Energy Efficiency Targets. As such, these programs are part of the overall REV policy.

II. Facts and Conclusions in the EIS Relied Upon to Support the Decision

In developing this findings statement, the Commission has reviewed and considered the "Final Generic Environmental Impact Statement in Case 14-M-0101 - Reforming the Energy Vision and Case 14-M-0094 - Clean Energy Fund" prepared for the Reforming the Energy Vision (REV) and Clean Energy Fund (CEF) proceedings and issued on February 6, 2015 (FGEIS). The following findings are based on the facts and conclusions set forth in the FGEIS.

A. Public Needs and Benefits

Chapter 1 of the FGEIS describes the need for and expected benefits of REV and the CEF as a whole. These programs will address challenges facing New York's energy system, including the need to reduce greenhouse gas emissions, dependence on natural gas for electricity generation, and market failures in the clean energy sector [FGEIS 1-12]. By supporting energy efficiency technologies and spurring private investments, energy efficiency programs, including utility energy efficiency programs, will create public benefits including reduction in carbon and other pollutant emissions, increased penetration of clean distributed generation, reduced fossil fuel dependence, and increased customer choice and opportunity [FGEIS 1-18].

B. Potential Impacts

Chapter 5 of the FGEIS describes the expected environmental impacts of the proposed REV and CEF as a whole. Areas of analysis relevant to energy efficiency programs include Demand Management, Distributed Energy Resources, Energy Efficiency, and Low-Carbon and Carbon-Free Energy Resources. Therefore, a primary impact of this action will be greenhouse gas reductions [FGEIS 5-21, 5-48]. As more fully described in the FGEIS, individual energy efficiency projects may have local impacts including construction impacts, land use, and the generation of hazardous materials during construction [FGEIS 5-5, 5-22].

C. Mitigation

Chapters 5 and 6 of the FGEIS identify mitigation measures that could address the potential adverse impacts of the proposed REV and CEF as a whole. As more fully described therein, existing and applicable federal, state, and local regulations will serve to mitigate a number of potential impacts [FGEIS 6-1]. In addition, particular project assessments regarding proposed distributed energy resource installations can consider local impacts [FGEIS 5-8]. In the REV proceeding, the Commission directed Staff to cooperate with the New York State Department of Environmental Conservation (DEC) to develop rules that avoid or mitigate the potential for harmful local emissions. To the extent that any specific utility energy efficiency program proposals present the potential for harmful local emissions, those rules will also apply and mitigate the impacts of those proposals [FGEIS 5-7, 5-8].

D. Cumulative Impacts and Climate Change

The FGEIS describes in detail the harmful environmental impacts of greenhouse gases such as carbon dioxide [FGEIS 3-14; 3-15]. The clean energy technologies and resources promoted by REV and the CEF as a whole, and the energy efficiency programs

in particular, create a long-term reduction in the use of energy generated from fossil fuels [FGEIS 4-5]. The environmental impact of a reduction in the use of fossil-fuel based energy generation on the human environment is generally positive, but will occur over a long time horizon [FGEIS 5-48].

III. Conclusion

The energy efficiency programs are anticipated to yield overall positive environmental impacts, primarily by reducing the State's use of, and dependence on, fossil fuels, among other benefits. In conjunction with other State and Federal policies and initiatives, particularly REV and the CEF, the energy efficiency programs are designed to reduce the adverse economic, social, and environmental impacts of fossil fuel energy resources by increasing the use of clean energy resources and technologies [FGEIS ES-10]. Ordinary construction-related impacts are expected [FGEIS 5-5, 5-22] but do not outweigh the overall positive environmental impact.

CERTIFICATION TO APPROVE:

Having considered the Draft and Final Generic Environmental Impact Statement, and having considered the preceding written facts and conclusions relied upon to meet the requirements of 6 NYCRR 617.11, this Statement of Findings certifies that:

1. The requirements of 6 NYCRR Part 617 have been met;
2. Consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as Practicable; and
3. Consistent with the applicable policies of Article 42 of the Executive Law, as implemented by 19 NYCRR 600.5, this action will achieve a balance between the protection of the environment and the need to accommodate social and economic considerations.

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