

Summary of January 16, 2020 Public Service Commission Energy Efficiency Order¹ as it relates to heat pumps

- For the first time Energy Efficiency is regulated holistically and the energy savings when an efficient heat pump replaces less efficient fossil fuel heating, cooling and hot water heating is being counted toward energy efficiency goals. Formerly gas and electric savings were counted in separate silos and “fuel switching” was not only not counted, it was discouraged in many cases and not eligible for energy efficiency incentives.
- The Order transfers responsibility for heat pump targets and incentives, in the form of upfront rebates² to the State’s utilities
- NYSERA will focus on market growth and workforce development and a Low and Moderate Income (LMI) heat pump program, once incentive programs are taken over by the utilities
- The overall goal for the Order is to save 181 TBtu’s of energy by 2025 and it targets a 3% annual decrease in utility electric sales and a 1.3% decrease in gas sales³. Of the 31 TBtu energy savings assigned to the utilities, 3.6 TBtu of the savings are to come from heat pump installations⁴. The Commission’s original proposed goal was for 5TBtu by 2025 for heat pumps, which they estimated would take 88,000 installations to achieve⁵. Proportionally, the new goal would mean roughly 63,000 installations. The table below lays out the budgets and projected energy savings for each utility from Appendix C of the Order. While the original December 2018 Order proposed a higher level of energy savings, this Order increased the budgets for each utility from the December 2018 total of \$250 million⁶ while lowering the projected energy savings, perhaps meaning the Commission believes the original projections for energy savings per installation were over-estimated and/or, as NY-GEO testified⁷ higher incentives are needed to stimulate the market enough to meet the energy savings targets.

¹ 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 – January 16, 2020 - https://cdn.shopify.com/s/files/1/0326/2837/files/2020_01_16_PSC_EE_order.pdf?735 – accessed 2020 02 02

² *ibid.*, page 88

³ *ibid.*, page 4

⁴ *ibid.*, page 36

⁵ *ibid.*, page 48

⁶ STATE OF NEW YORK PUBLIC SERVICE COMMISSION CASE 18-M-0084 - In the Matter of a Comprehensive Energy Efficiency Initiative. URDER ADOPTING ACCELERATED ENERGY EFFICIENCY TARGETS – December 12, 2018 - https://cdn.shopify.com/s/files/1/0326/2837/files/2018_12_12_E2_PSC_Order.pdf?736 – footnote 71 on page 60, accessed 2020 02 02

⁷ *ibid.*, footnote 1 page 81

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

- Each utility has until March 16th to file implementation plans which should lay out incentive levels and how they're planning to meet savings goals in some detail.⁸
- Each utility has 30 days - until mid-February - to file a letter stating if they will be able to take the reins of the program in their service territory from NYSERDA by April 1, 2020, or if they need more time.⁹
- It is estimated that in the last 2 years NYSERDA has spent roughly \$24 million on heat pumps in their air source and ground source rebate programs, or \$12 million per year. The order authorizes \$454 over 5 years or roughly \$90 million per year. This a more than 7-fold increase.
- In general, this order represents a strong commitment by New York to building electrification. "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."¹⁰ The results of the EE Order and the heat pump program will be monitored closely and in 2022 NYSERDA will create a Statewide Energy Efficiency & Electrification Potential Study, using those results.¹¹
- Gas replacements are included.¹² In some of their May 2019 responses to the December 2018 preliminary Commission Order, utilities expressed a desire to limit new programs to oil and propane customers and to exclude gas customers from their targets. This Order makes clear

⁸ *ibid.*, footnote 1 – page 90

⁹ *ibid.*, page 115

¹⁰ *ibid.*, page 57

¹¹ *ibid.*, page 77

¹² *ibid.*, page 86

that gas customers will be eligible. It will be interesting to see how utilities structure their implementation plans in relation to gas customers.

- In some areas of the state customers have been buying air source heat pumps to replace less efficient air conditioners and reduce cooling bills. In many of those cases customers don't even run their heat pumps in the winter due to high electric rates. The order requires a focus on heating and states: *"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."*¹³
- Separate from the utility heat pump programs, "NYSERDA is directed to allocate at least thirty million dollars to LMI heat pump programs as part of the Clean Energy Fund."¹⁴
- New York's residential electric utility delivery rates are volumetric, meaning the rate is multiplied by the number of kilowatt hours (kWh) used to calculate the delivery side of a customer's bill. This doesn't necessarily reflect what it costs the utility to deliver the electricity which is largely based on the stress a customer places on the system during the highest demand days of the year. In New York, these days are generally the hottest days of summer when millions of customers crank air conditioners at the same time. Geothermal heat pumps actually decrease demand on those days because they are far more efficient than conventional air sourced air conditioners when air temperatures soar. However geothermal customers wind up paying significantly higher bills because of the kWh necessary to power the pumps year-round, even though most of those kWh's are used during the winter when demand, and stress on electric delivery infrastructure, is minimal. NYSERDA, in its [January 2018 Heat Pump Potential Study](#),¹⁵ calculated this "inverse cost shift" to be as high as \$827 annually in Con Edison's service territory, and as low as \$375 in Central Hudson's. NY-GEO and others have argued this point in rate cases and have won Geothermal Rate Impact Credits (GRIC) in the Central Hudson and Orange & Rockland service territories that provide annual electric bill credits to residential geothermal customers that to some extent address this inequity, The Commission Order¹⁶ keeps these GRICs in place for the 3 year duration of those rate plans. Longer term, the Commission is developing standby rates, designed to address the inequity of volumetric delivery rates, and those standby rates are slated to be available to all residential customers, including geothermal customers.
- **Reasons to think more is coming:** If the industry is successful mobilizing to meet the challenge of the 3.6 TBtu goal, there are several reasons to believe momentum will continue to increase for building electrification.

¹³ Ibid., page 87

¹⁴ Ibid., page 115

¹⁵ New Efficiency: New York - Analysis of Residential Heat Pump Potential and Economics Final Report |

Report Number 18-44 | January 2019 – page 60

https://cdn.shopify.com/s/files/1/0326/2837/files/NYSERDA_EE_heat_pump_report_0ffddc45-8563-4f17-9a45-663e578d1954.pdf?737 accessed 2020 02 02

¹⁶ Ibid., footnote 14 in footnote at the bottom of page 88

- First is the Commission’s own projection that they may be revising targets and budgets upward after the 2022 Statewide Potential Study.
- Second is the impact of the recently enacted Climate Leadership and Community Protection Act (CLCPA). The CLCPA mandates an updated and more accurate method of measuring greenhouse gas (GHG) emissions from fossil fuels to include a more relevant 20-year time frame and the more complete method of using life-cycle carbon emissions, including leaks in the production and transmission phases of a fuel’s life cycle. In practical terms this means the state will count far higher impacts from methane leaks, and substituting heat pumps for gas and oil heating will likely result in significantly greater carbon savings than are currently being counted. Although the EE Order is focused on energy savings, it is seen as an important part of the state’s effort to cut GHG emissions. The CLCPA has given the force of law to New York’s goal of cutting emissions 40% by 2030. An increase in the way carbon savings of heat pump installations are calculated will make those installations that much more valuable.
- The third reason to be optimistic that New York’s commitment to building electrification will only grow, is the enormity of what is needed to meet the 40% by 2030 reduction goal. The commitment in the Energy Efficiency order is substantial. If it results in 63,000 fewer gas, oil and propane heating units by 2025 that will be an important accomplishment. But testimony in the Orange & Rockland rate case¹⁷ projected that 227,000 heat pumps per year would need to replace fossil fuel units in order for the heating sector to do its part to meet the 40% GHG reduction goal.

In conclusion, the Public Service Commission has recognized the substantial role heat pumps must play to meet New York’s climate goals and the Commission’s January 16th Order is an important step forward in putting significant resources behind heat pumps in the State’s efforts to reduce emissions from the heating sector. This step forward needs to succeed and then be built upon quickly and extensively for New York to meet its climate goals.

¹⁷ Testimony submitted by analyst Jerry Acton for the Alliance for a Green Economy - 2018 05 25, page 16
https://cdn.shopify.com/s/files/1/0326/2837/files/AGREE-OR-Testimony-Jerry_Acton.pdf?738