Summary of January 16, 2020 Public Service Commission Energy Efficiency Order ¹ 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 rebates ² 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 achieve ⁵. 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 million ⁶ 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 testified ⁷ higher incentives are needed to stimulate the market enough to meet the energy savings targets.

² ibid., page 88
³ ibid., page 4
⁴ Ibid., page 36
⁵ Ibid., page 48
⁷ Ibid., footnote 1 page 81
Each utility has until March 16\textsuperscript{th} to file implementation plans which should lay out incentive levels and how they’re planning to meet savings goals in some detail.\footnote{ibid., footnote 1 – page 90}

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.\footnote{Ibid., page 115}

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." \footnote{Ibid., page 57} 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.\footnote{Ibid., page 77}

Gas replacements are included.\footnote{Ibid., page 86} 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
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.”

- 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.”

- 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, 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 Order 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.
• 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 case 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.

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