

Clean Energy Communities Impact Evaluation: Program Years 2019-2023

Final Executive Summary

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1 Executive Summary

As part of its Clean Energy Fund, the New York State Energy Research and Development Authority (NYSERDA) created an Investment Plan for local governments in New York State (NYS). Integral to this effort is the Clean Energy Communities (CEC) Program, which encourages investments in energy efficiency and the deployment of clean energy in local government operations and in their communities. Local governments include counties, cities, towns, and villages. The research team uses the terms ‘municipality’ and ‘community’ to refer to the local governments and the area in which they have jurisdictional control. The program provides outreach, guidance from program Coordinators, and support, including technical assistance and tools, to overcome common barriers to implementing clean energy projects experienced by local governments. One resource provided by the program is a list of High Impact Actions (HIAs) the municipalities can complete.

This impact evaluation’s objectives are presented in Table 1 and cover the period from 2019 to 2023. The three HIAs of interest include Benchmarking – Advanced Reporting, Clean Energy Upgrades, and Clean Heating and Cooling Demo.

Table 1. Evaluation Objectives and Methods

Objective	Purpose	Method
What are the verified unit savings for the three HIAs of interest?	Perform verification of per-unit savings for selected HIAs	Review of Program data, desk reviews, and interviews of communities and contractors working on those projects within communities where needed
What are the normalized per-unit, per-community (small and large) savings for each HIA?	Update the impact forecasting for the selected HIAs	Use the population size of the sampled communities and the verified impacts

Impact Findings

Table 2 presents the energy impact results for each HIA included in this evaluation.

Table 2. Summary of Evaluated Impacts for 2019–2023

HIA / Metric	Annual Efficiency kWh Savings	Annual Natural Gas Btu Savings	Annual Fuel Oil Btu Savings	Annual Propane Btu Savings	Annual Renewable kW Generation	Annual Renewable kWh Generation	Annual Beneficial Electrification kWh	Annual lbCO ₂ e
Clean Energy Upgrades								
Total Verified Gross Annual Impacts	7,762,154	2,505,934	16,625,933	324,373	676	7,903,977	-140,085	20,167,959
Per-capita Verified Gross Annual Impacts	4.135	1.335	8.857	0.173	0.0004	4.211	-0.075	10.744
Benchmarking – Advanced Reporting								
Total Verified Gross Annual Impacts	1,281,721	14,216,984	-8,351,172	3,469,157	0	0	0	2,191,711
Per-capita Verified Gross Annual Impacts	0.246	2.729	-1.603	0.666	0	0	0	0.421
Clean Heating and Cooling Demo								
Total Verified Gross Annual Impacts	18,343	1,728,992	364,728	0	0	0	-203,321	57,163
Per-capita Verified Gross Annual Impacts	0.016	1.476	0.311	0	0	0	-0.174	0.049

* Impacts are reported in units of kW, kWh, Btu, and lbCO₂e for purposes of improving readability. Impacts are reported in units of MW, MWh, MMBtu, and MTCO₂e in the Forecasting Workbook consistent with historical reporting.

1.1 Summarized Findings and Recommendation

The evaluation verified the per-capita savings for three High Impact Actions (HIAs): Benchmarking -Advanced Reporting, Clean Heating and Cooling Demo, and Clean Energy Upgrades for use in estimating indirect program impacts. The evaluated and verified savings results for each action are shown in Table 3 below.

Table 3. Evaluated HIA Savings Impacts

HIA	Annual Impact	Efficiency kWh Savings	Natural Gas Btu Savings	lbCO2e
Benchmarking-Advanced Reporting	Total Verified Gross	1,281,721	14,216,984	2,191,711
	Per-Capita Verified Gross	0.246	2.729	0.42
Clean Heating and Cooling Demo	Total Verified Gross	18,343	1,728,992	57,163
	Per-Capita Verified Gross	0.016	1.476	0.049
Clean Energy Upgrades	Total Verified Gross	7,762,154	2,505,934	20,167,959
	Per-Capita Verified Gross	4.135	1.335	10.744

*Impacts are reported in units of kW, kWh, Btu, and lbCO2e for purposes of improving readability.

** Additional impacts per HIA found within the final report document.

The evaluation additionally estimated Beneficial Electrification impacts for the Clean Heating & Cooling Demo and the Clean Energy Upgrades HIAs, as seen in Table 4 below.

Table 4. Evaluated HIA Beneficial Electrification Impacts

Annual Beneficial Electrification kWh	Total Verified Gross Annual Impacts	Per-capita Verified Gross Annual Impacts
Clean Heating and Cooling Demo	-203,321	-0.174
Clean Energy Upgrades	-140,085	-0.075

Finding 1: Results of the Benchmarking – Advanced Reporting HIA showed better performance in large communities than in small ones. Achieving energy savings from benchmarking is a long-term investment with greater potential for success in communities that have dedicated energy managers and buildings with integrated controls. While those characteristics are more commonly found in larger communities, small communities can also achieve savings but may require additional support and continued touchpoints with their NYSERDA CEC Coordinators.

Recommendation 1: To promote longer-term engagement, NYSERDA should consider adding a new HIA within the benchmarking activities that requires continued tracking of energy use, up to 24 months, and that demonstrates an improvement in energy use intensity tracking for all buildings that were a part of the Benchmarking – Advanced Reporting HIA. The HIA would drive deeper savings in municipal buildings and provide NYSERDA with detailed building-level energy use data that might be useful in identifying targeted HIAs.

- **NYSERDA Response to Recommendation 1:** Implemented. Benchmarking - Municipal Buildings - receive points if they submit a certified copy of an executed local law, ordinance, or resolution that requires the applying jurisdiction to make available to the public on the internet on an annual basis, energy use information for each municipal building that is owned or occupied by the applying jurisdiction that is 1,000 square feet or larger. At a minimum, publicly disclosed energy use information shall include each building’s energy use intensity (EUI), annual greenhouse gas emissions, and an energy performance score where available.

Finding 2: The Clean Heating and Cooling Demo participation requirements include submission of a certification form, with limited estimated energy information. It does not include essential equipment details such as the heat pump make, model, or rated capacity. Collecting this information at the time of installation is the most reliable approach to ensure data accuracy and would enable NYSERDA to verify compliance with HIA technical requirements. This data is critical for estimating the magnitude of energy and emissions impacts across participating communities. In the Clean Energy Upgrades HIA, the option for “comparable information” remains inadequately defined, introducing uncertainty regarding the data’s completeness and comparability.

Recommendation 2: To improve the accuracy of energy savings estimates, NYSERDA should revise the certification form for the Clean Heating and Cooling Demo HIA to include a required photo of the equipment nameplate, along with data entry fields for equipment capacity, heating efficiency, and cooling efficiency. Communities can obtain this information with support from the installation contractor. Additionally, the Contractor team recommends removing the option to submit “comparable information” under the Clean Energy Upgrades HIA. Eliminating this vague provision will help ensure that backup documentation includes sufficient detail to support more precise energy savings calculations.

- **NYSERDA Response to Recommendation 2:** Rejected. At first attempt, minimal CEC projects were able to be matched to the Clean Heat dataset. NYSERDA is confident this will be a useful data set in the future by working with the evaluation team on the alignment needed for matching purposes.

Finding 3: The current work applied the 2010 US Census data for normalizing results to per capita totals, which is consistent with the Program Opportunity Notice (PON) during the Program years 2019—2023. The 2020 Census showed an overall increase in statewide population of 4.2%. However, community-to-community population changes vary positively and negatively.

Recommendation 3: Future iterations of the CEC Program PON should update community size descriptions (large and small) to use 2020 Census data. Future evaluations can also apply 2020 Census values to stay aligned.

- **NYSERDA Response to Recommendation 3:** Implemented. All future evaluations and analysis will implement the 2020 Census.