

Code to Zero Initiative Market Evaluation Report: Baseline Estimates and Progress Toward Goals

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Executive Summary

NYSERDA's Code to Zero Initiative aims to overcome barriers impeding code compliance and enforcement, establish a path toward the development of a stretch-to-zero energy code, and assist in the enactment of New York State (NYS) and local energy codes. The Initiative builds on NYSERDA's past efforts to help support the adoption of energy codes with higher performance goals and strengthen compliance and enforcement. Initiative activities will increase the percentage of buildings that are energy code compliant and the number of jurisdictions adopting stretch codes; improve energy code enforcement by increasing the number of jurisdictions that adopt alternative code enforcement structures; and accelerate the advancement of the energy code and stretch codes to achieve greater carbon reductions. This report presents the Market Evaluation Team's evaluation findings for the Code to Zero Initiative based, representative jurisdiction in-depth interviews and training participants surveys.

ES.1 Progress Towards Goals

The Outputs and Outcomes of the Code to Zero Initiative were undergoing revision at the time that this report was finalized. The goals discussed in this report are based on the latest information available but may change in future reporting. A key goal of the Code to Zero Initiative is for energy code compliance to increase by 10% throughout NYS. The current compliance estimate for commercial new construction is 83% and the current compliance estimate for residential single-family new construction is 77%.

Another key goal of the initiative is to have 10 jurisdictions, other than those participating in pilots, adopt stretch codes. As of August 2021, there were 15 jurisdictions, including New York City, that had adopted a stretch code, none of which had participated in a pilot. The initiative also had a goal that eight jurisdictions outside of those participating in pilots would adopt alternative code enforcement structures, but that part of the initiative had not started work by August 2021.

A final goal of the initiative is to train 13,250 (cumulative) individuals, including code officials and building officials. Per 2020 records, 4,763 individuals were trained. Through August 2021, an additional 1,408 individuals were trained for a total of 6,171 individual trained. The Market Evaluation Team reported that prior to March 2020, before the current round of trainings were

launched, 2,041 persons received training.¹ In surveys, undertaken immediately after training and six months later, training participants indicated high satisfaction with the trainings, a greater understanding of the ECCCNY and NYStretch codes, and having made changes to day-to-day activities related to code implementation. The initiative’s progress towards goals is shown in **Table 1**, below.

Table 1. Initiative Progress Towards Goals

	Indicator	Baseline	2021 Target (Cumulative)	2021 Progress (Cumulative)
Outputs	Number of individuals receiving NYSERDA-supported training by market segment and building type	2,041	13,250	Unique individuals trained: 6,171 Total persons attending training since March 2020: 18,602
	Number of Pilots	0	6	0 ^a
	Number of entities NYSERDA supports in the enactment of energy codes	0	5	TBD ^b
Outcomes	Percentage of market complying with the energy code	TBD	Increase 10%	TBD ^c
	Number of jurisdictions (outside of pilots) adopting alternative code enforcement business structures	TBD	8	0 ^d
	Number of jurisdictions (outside of pilots) adopting stretch code	TBD	10	15

^a No pilots had been conducted at the time of reporting. ^b The Market Evaluation Team did not have this information for this report. ^c This metric was not evaluated for this report. ^d This part of the Initiative had not started at the time of reporting.

ES.2 Savings Estimates

The Code to Zero Initiative has received funding from two sources: first from the Technology and Market Development Program and later from the Clean Energy Fund. In 2021 the Market Evaluation Team provided a methodology for estimating indirect savings from the Code to Zero Initiative under the Clean Energy Fund. This methodology (outlined in *Appendix - Indirect Savings Methodology*) is aimed at providing initiative energy savings at the end of a four-year

¹ The Market Evaluation Team did not search for duplicates for the number of persons trained before March 2020. The Market Evaluation Team searched if training attendees participated in multiple training after March 2020. After deduplicating training attendee names, the Market Evaluation team found that that in total 6,171 individuals had been trained since March 2020.

evaluation process, with the Team collecting data to inform the final evaluation steps. To deliver interim savings estimates, the Team reviewed NYSERDA’s methods for estimating Code to Zero Initiative–induced energy savings and delivered an additional methodology for providing preliminary savings estimates in advance of the final estimates. In 2021 the Market Evaluation Team also estimated the energy impacts of the Code to Zero Initiative using funding from the Technology and Market Development Program. The full analysis is provided in *Technology and Market Development Savings Calculation*.

NYSERDA estimated the percentage of overall program funding that came from the Clean Energy Fund and from the Technology and Market Development Program from 2015 through 2021. The tables below show estimated Code to Zero Initiative savings with Technology and Market Development Program funding and the preliminary Initiative savings with Clean Energy Fund budget. Each year’s savings is distributed according to the percentage of budget that came from each funding source.

Table 2. Preliminary Code to Zero Savings Estimates in GWh

Savings - Total GWh	2015	2016	2017	2018	2019	2020	2021
CEF Savings (GWh) after accounting for budget allocation	0	0	0.34	21.59	61.79	52.44	55.58
TM&D Savings (GWh) after accounting for budget allocation	116.88	78.88	88.01	62.60	27.21	0.67	0

Table 3. Preliminary Code to Zero Savings Estimates in MW

Savings - Total MW	2015	2016	2017	2018	2019	2020	2021
CEF Savings (MW) after accounting for budget allocation	0.00	0.00	0.10	6.09	17.60	14.71	15.50
T&MD Savings (MW) after accounting for budget allocation	33.23	22.52	24.91	17.67	7.75	0.19	0.00

Table 4. Preliminary Code to Zero Savings Estimates in Billion BTU

Savings - Total (Billion Btu)	2015	2016	2017	2018	2019	2020	2021
CEF Savings (Billion BTU) after accounting for budget allocation	0.00	0.00	0.40	25.68	69.90	77.24	82.42
T&MD Savings (Billion BTU) after accounting for budget allocation	135.40	106.56	103.11	74.45	30.79	0.98	0.00

ES.2 Findings and Recommendations

The Market Evaluation Team offers the following findings for Code to Zero Initiative activities occurring between March 2020, when activities primarily funded by the CEF were launched, and August 2021 and recommendations for future initiative years.

Finding 1: The Code to Zero Initiative is reaching a very significant number of code officials and building professionals.

Training records indicate that Code to Zero Initiative trained 4,763 unique code officials and building professionals in 2020 and 1,408 unique code officials and building professionals in 2021. The total number of persons attending training sessions, not accounting for the same individual attending trainings was 18,603, including trainings held before March 2020. Training participants represented all areas of the state. While most of the training participants were code officials (77%), trainings also touched a significant number of building professionals. The initiative’s progress in providing trainings has allowed NYSERDA to make progress towards the Code to Zero goal of training 13,250 individuals.

Further expanding the impact of the trainings, both code officials and building officials share the information they learn in trainings with other professionals; most notably, 64% of code officials said that they shared what they learned in trainings with other code officials. Additionally, based on estimates from training participants regarding the square footage that they worked on following the training, the initiative touched, through its training, much of the construction market in New York State.

Finding 2: Training has affected the work of code officials and building professionals.

Training participants rated the trainings highly in terms of relevance to their work and quality in surveys conducted immediately after participation. All courses received nearly the best possible score from survey respondents in terms of quality of information, relevancy to work, and likelihood to recommend. When surveyed six months after participation, over half of training attendees indicated that they adjusted their work due to the trainings, primarily due to greater understanding of the energy code. Additionally, 72% of training participants indicated that they felt code compliance had increased in the past year.

Finding 3: To date, 15 jurisdictions have adopted stretch codes; however, the impact is largely concentrated in New York City.

To date, 14 municipalities and New York City have adopted a stretch code. On a square footage basis, the impact of stretch code adoption is largely concentrated in New York City (98% of the square footage of stretch code adopting jurisdictions) due to its large size, and the relatively small size of the other jurisdictions. With the adoption of stretch codes by 15 jurisdictions, the initiative's goal of 10 jurisdictions adopting a stretch code has been surpassed.

Recommendation: To maximize the impact of stretch code adoption on energy savings, the initiative should consider focusing stretch code promotion on medium and large jurisdictions that represent sizable construction markets.

Finding 4: Survey findings suggest that code compliance is increasing, at least partially due to NYSERDA's programmatic activities.

The Code to Zero Initiative seeks to increase code compliance by 10%. While the Year 2 evaluation did not include a measurement of code compliance over the previous year, training participants indicated that they believed code compliance had increased since last year and that NYSERDA deserved credit for this trend. Additionally, representative jurisdiction experts expressed they generally thought code compliance had increased since their previous interviews, conducted in Year 1.