

Clean Energy Communities Market Evaluation

Final Appendix

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Appendix A Research Objectives

Table A-1. Research Objectives

Objective	Evaluation Question(s)	Data Source(s)	
		Survey	Interview
Estimate the number of High-Impact Actions completed	How many High-Impact Actions have you completed?	✓	
	What High-Impact Actions have you completed?	✓	
	What are the impacts of the completed Actions?	✓	✓
	What is the cost of the implemented Actions?		✓
	Are there any energy actions you have taken other than the 10 High-Impact Actions offered through the Program?	✓	✓
	What is the likelihood that you will implement any of the 10 High-Impact Actions?	✓	
Determine the barriers to implementing High-Impact Actions	On a scale of 1 to 10 (with 10 being most difficult), what is the level of difficulty of implementing each High-Impact Action?	✓	
	What barriers, if any, keeps you from implementing any of the 10 High-Impact energy Actions?	✓	✓
	Of the barriers you have provided, which are the most difficult to overcome?		✓
	What help do you need in overcoming these barriers?		✓
Estimate the number of communities that indicate clean energy is a priority	Do you consider clean energy a priority within your community?	✓	
	What are key reasons your community is interested in clean energy?		✓
	How does clean energy compare to other priorities within your community?		✓
Creation of clean energy taskforces/working groups	Are there clean energy taskforces/working groups in your community? Is the municipality participating in them?	✓	✓
Knowledge of Community Choice Aggregation (CCA)	Have you discussed or considered joining a CCA?	✓	
Impacts of code training for attendees other than code officials	Have people other than the code officials attended the energy code enforcement training, and if so, what have the impacts been?	✓	✓
General awareness and education as a result of the Clean Energy Communities (CEC) Coordinator effort	Has the CEC Coordinator increased awareness and understanding of energy efficiency and renewable energy benefits? If so, in what ways	✓	✓

Appendix B Survey Sample Characteristics

This appendix contains a breakdown of the characteristics of the sampled communities. Table B-1 and Table B-2 contain the breakdown as reflected by the Priority distribution when we designed our sample and collected data.

Table B-1. Population and Sample Characteristics Breakdown

Characteristics	Population						Surveyed Sample			
	Total		Priority 1		Priority 2-4		Priority 1		Priority 2-4	
	N	%	N	%	N	%	N	%	N	%
Total	1,600	100%	80	100%	1,520	100%	39	100%	66	100%
Type										
County	62	4%	10	13%	52	3%	6	15%	2	3%
City	62	4%	28	35%	34	2%	13	33%	1	2%
Town	932	58%	33	41%	899	59%	16	41%	42	64%
Village	544	34%	9	11%	535	35%	4	10%	21	32%
Location										
Upstate	1,275	80%	58	73%	1,217	80%	26	67%	55	83%
Downstate	325	20%	22	27%	303	20%	13	33%	11	17%
Size										
Large	102	6%	28	35%	74	5%	16	41%	5	8%
Medium	436	27%	44	55%	392	26%	21	54%	16	24%
Small	1,062	66%	8	10%	1,054	69%	2	5%	45	68%
Segment										
Green Committed	236	15%	70	88%	166	11%	33	85%	6	9%
Economic Stimulators	532	33%	6	7%	526	35%	3	8%	16	24%
Fiscal Hawks	832	52%	4	5%	828	54%	3	8%	44	67%

Table B-2. Population and Sample Breakdown by Priority Number

Priority	Strata	Population		Surveyed Sample		
		N	%	N	Weighted N	Weighted %
Priority 1	Stratum 1	80	5%	39	78	5%
Priority 2	Stratum 2	110	7%	6	140	9%
Priority 3	Stratum 2	547	34%	26	587	37%
Priority 4	Stratum 2	863	54%	34	795	50%
Total		1,600	100%	105	1,600	100%

Appendix C Additional Market Characterization Data

C.1 Action-Specific Findings

The action-specific findings focus on three aspects: The impacts of completing the action; the costs incurred to complete the action; and, for those who had not done the action, the barriers making it difficult.

Understanding the impacts of the program's High Impact Actions is important to inform whether the selected actions are achieving their intended outcomes. We asked communities who had completed an action what the impacts were in their community, both direct and indirect. They commented on outcomes such as increased awareness of clean energy, energy savings, and networking with other groups. Below we present findings on the effects of each of the program's High Impact Actions.

The program's High Impact Actions vary in how much time and money they cost the municipalities. For those communities that had completed an action, we asked them to estimate the cost of completing it. The costs included staff time, paying contractors or lawyers, equipment costs, and paying for outreach such as printing and mailing costs. Volunteers also contributed to completion of the actions. Where appropriate, we report mentions of using grants and utility incentives to offset costs.

Community representatives mentioned many barriers that make implementing the program's High Impact Actions difficult for them. In general, they fall into the following broad categories: limited finances, limited staff time, lack of public or leadership support, legal or administrative barriers, and lack of technical knowledge.

C.1.1 Benchmarking

All 29 municipalities interviewed had adopted the benchmarking policy, though a total of 13 municipalities provided insights and feedback on the action in the interview. As all municipalities had adopted benchmarking, barriers described in section C.1.1.3 relate to the challenges that municipal staff faced during completion of the benchmarking action.

C.1.1.1 Impacts

The main impacts of the benchmarking action include:

- Elected officials' improved awareness of clean energy.

- Having concrete data and numbers to support case for municipal upgrades.
- Improved identification of potential upgrades to municipal buildings.

Municipalities that adopted benchmarking legislation more commonly reported impacts internal to their municipality as a result of this action than effects in the community. These impacts included greater awareness of clean energy among council members and a better ability to identify energy-saving opportunities in municipal buildings, which they said increases the likelihood of moving forward with energy efficient upgrades. Most municipalities reported receiving little to no feedback from community members about the publicly-available, online benchmarking information.

Nine municipalities reported their elected officials have greater awareness of energy efficiency and clean energy thanks to the legislative process that involved them. In particular, the benchmarking data was used as concrete evidence for how and why a municipality should move forward with clean energy upgrades in municipal buildings. Presenting the benchmarking data to board members helped educate and convince board members about the importance of energy efficiency. A municipal representative described the benefit of presenting benchmarking information to a municipal board:

“It [benchmarking] did help encourage the board to move forward more quickly with implementing the desired [energy efficiency] changes. Without benchmarking data to back it up, it’s hard for boards to make decisions about capital expenditures of that size. Before, they were dragging their feet. Having the numbers helps get the implementation done more quickly than they would otherwise.”

Municipalities reported that benchmarking municipal buildings’ energy use has been useful to identify potential energy saving upgrades in their municipal building stock (7 of 9). One representative noted how they have been using their benchmarking data to identify building energy patterns:

“We could now see what buildings are trending towards lower energy use and which are trending up or staying the same. It’s definitely given us more of a better perspective on how we can continue to reduce our energy use.”

As a result of the ability to identify energy-saving opportunities, several community representatives reported that benchmarking has led to planned or completed clean energy projects. For example, one municipality reported upgrading their lighting to light-emitting diodes

(LEDs) in all of their town buildings as a result of the benchmarking. Four other municipalities reported that benchmarking data has not been used in that capacity yet, though three of these reported it is because they are still early in the adoption process and plan to use the data for future building analyses.

A majority of the communities who implemented this action said the benchmarking policy did not generate feedback or awareness of clean energy throughout the community (7 of 9). These municipal representatives said the limited feedback was either because they were still in the infancy of publishing the data online or because community members were not interested in it. Two municipalities reported hearing positive community feedback and support for adopting the policy. For example, one municipality representative received eight letters from community members expressing their support for the benchmarking policy. Another representative described hearing praise from an environmentally active group of citizens in the community.

C.1.1.2 Costs

The main costs associated with completing the benchmarking action were internal staff time:

- Drafting and passing the legislation
- Collecting, organizing, and entering in the energy usage data.

The legislative component of the action, where municipal staff drafted and presented the policy before the board, ranged from a few weeks to a couple of months. During this time, they put together an informational packet, consulted municipal leadership, drafted the benchmarking ordinance, and secured board approval.

The other costs associated with benchmarking derive from the time and effort required to gather the municipal building energy data, organize it, and input it into the ENERGY STAR® Portfolio Manager. Staff members collected utility invoices and input the kWh, the kW usage, and the gas usage into the system, which typically took a few weeks to complete.

Most municipalities reported one to three staff members work on the benchmarking action. For example, a town clerk and town supervisor may collaboratively draft and organize the legislation, present it before the board, and have the town attorney review it. The town clerk may also be responsible for recording and inputting the municipal energy data.

About half (4 out of 9) of the community representatives mentioned negative perceptions of the workload municipal staff had to perform to satisfy the ongoing nature of the benchmarking

requirements. Representatives noted that organizing and entering the energy data was a lengthy and detailed process. For example, one municipality reported devoting over 90 hours for adopting and finalizing the benchmarking policy. Another municipality noted that it took them months to finalize the adoption:

“It took a lot of time because, basically, just trying to figure out the program itself and organizing all the energy bills. They [energy bills] are not all held by the same office for the town, so we had to do a little hunting and actually physically go into buildings to match the meter numbers to make sure that we were getting the right data for the right building. We worked it all out, but it took months.”

Two municipalities received assistance from their Clean Energy Communities (CEC) Coordinator for organizing and entering the benchmarking data. These municipalities reported an easier and shorter timeline for the benchmarking action. Furthermore, two other municipalities reported using expertise and guidance from municipal sustainability committees to assist through the adoption process.

C.1.1.3 Barriers

About half of the interviewed municipalities who implemented the benchmarking action faced challenges doing so. The primary challenges¹ that municipalities faced in adopting the benchmarking action were:

- Confusion about the process and requirements
- Concerns about the ongoing data entry

Two municipal representatives expressed confusion about the benchmarking requirements. One was unsure about how to incorporate upgrades or changes to a building into the reporting. The other – the only municipality interviewed not designated as a Clean Energy Community – was unclear about how to establish a baseline year and use the Portfolio Manager system, demonstrating a need for technical assistance.

¹ As all interviewed municipalities had adopted the benchmarking action, informants did not report on barriers hindering the adoption of the policy.

Two municipalities also reported concerns about the resources needed to continually log and report the benchmarking data. Ongoing data entry requires staff time, resources, and coordination, which may be difficult for a municipality with a limited budget or small staff.

One municipality reported issues with the overabundance of and complicated nature of their utility bill statements. The representative noted that they receive dozens of utility statements for their buildings each month, which is overwhelming to sift through and extract the necessary data for the benchmarking system. In an attempt to resolve this issue, the municipality asked their utility to send energy bills less frequently, but the utility was unable to comply with such a request.

C.1.2 Clean Energy Upgrades

The market evaluation team asked eight municipalities to report on the clean energy upgrades action. However, most municipalities interviewed had either completed energy efficiency improvements in their municipal buildings within the last few years (14), were in the process of implementing upgrades (5), or were planning on moving forward with upgrades in the near future (6).

The eight municipalities that were interviewed for this action reported multiple types of upgrades. These upgrades included:

- LED lighting upgrades (6 municipalities)
- HVAC replacements, such as high efficiency furnaces (3 municipalities)
- Insulation or building envelopment improvements (2 municipalities)
- Municipal solar farms (2 municipalities)
- Whole building retrofits or new construction (2 municipalities)

C.1.2.1 Impacts

Municipal representatives noted three prominent impacts of completing the clean energy upgrades action in their municipal buildings:

- Energy savings, and subsequent emission reductions, resulting in cost savings
- Operations and maintenance (O&M) savings
- Positive feedback from building occupants or community members about improvements

A municipality must demonstrate a 10% reduction in greenhouse gas (GHG) emissions in municipal buildings for the clean energy upgrades action. Half of these reductions must come

from energy efficiency improvements, while up to half may come from renewable energy projects.

Most municipalities reported reductions in energy use and GHG emissions as a result of upgrading their municipal buildings and installing solar farms (6 of 8).² Many municipalities exceeded the program requirements, with some reporting large reductions in energy use or GHG emissions. For example, one municipality reported a 29% reduction in municipal energy use: 6% of this reduction was from LED lighting upgrades, while the remaining 23% was from a solar farm located at their water treatment facility. Another municipality reported an 80% reduction in municipal GHG emissions due to the development of their 3,000-panel solar farm, which, at the time of the interview, covered 94% of municipal building energy consumption; demonstrating a reduction in both energy costs and GHG emissions.

All municipalities that upgraded their lighting to LEDs reported O&M savings (5 of 5). These municipalities reported never or rarely spending time and money on replacing lightbulbs due to long LED bulb lifespans. Two other municipalities reported no O&M savings yet, but they anticipated seeing savings in the long-term with less frequent light bulb replacements.

Almost all municipalities reported positive feedback from building occupants or community members as a result of the clean energy upgrades (7 of 8). Four municipalities received supportive citizen feedback for demonstrating leadership in environmental sustainability, reducing municipal energy expenditures in the long-term, and improving the aesthetic nature of municipal buildings. One community representative also noted the upgrades result in energy savings, and that their community members appreciated the government's "fiscal management."

One municipality that installed a solar farm reported they won an award from the New York State Conference of Mayors and Municipal Officials for developing the solar array. They noted the positive impact:

"There has been a lot of positive press articles about the solar farm and information pieces. I think people were generally excited that we were able to take a leadership in sustainability without costing, but actually saving, taxpayer dollars through the process we took."

² Two municipalities did not report energy savings. Both were still too early in their benchmarking process to have measured energy reductions.

Municipalities also received positive feedback about the upgrades from occupants of the municipal buildings (4 of 8). Building occupants were pleased and appreciative of the improved aesthetics and comfort of the buildings, with one reporting fewer shadows in staff workspace from the new lighting. Another municipality reported their Department of Public Works (DPW) staff appreciated the new insulation in the garage where the DPW trucks are stored, including new, automatic garage doors. The prior doors reportedly leaked air, and the staff were looking forward to the improved comfort and energy savings in the wintertime.

C.1.2.2 Costs

The main costs associated with completing the clean energy upgrades action were:

- Contractor labor
- Equipment expenditures
- Internal staff time

Most municipalities paid for their clean energy upgrades using their own capital and budgets (7 of 8), although half supplemented costs by using grant funds (4 of 8). The two municipalities that installed ground-mounted solar arrays leased the land to the private firms that developed the solar systems, covering the installation costs. These municipalities formed power purchase agreements (PPAs) with the private firms to purchase the power generated from the solar arrays.

The amount of money each municipality devoted to their clean energy upgrades varied and depended on the extent of their improvements. For smaller upgrades, usually lighting replacements, municipalities spent \$7,000 to \$12,000 on equipment and labor costs (2 of 8). For larger, whole-building improvements or new construction, costs ranged from \$900,000 to over \$1 million (3 of 8). Two other municipalities reported spending no money on upgrades, such as the solar farms, due to PPAs or public service mandates through a local regional council.

Almost all municipalities hired outside contractors, architects, or engineering firms to implement the clean energy upgrades. Equipment, such as lighting, was purchased through the contractor or bought from a local vendor, such as ACE hardware. One municipality reported using staff from their own internal power and light company to plan and install the upgrades, as they were also a municipal electric utility.

All municipalities reported spending internal staff time on planning and implementing the clean energy upgrades. Half reported two staff members worked on their projects, while three

municipalities reported three or more staff members helped plan and administer the upgrades. At one municipality, one staff person worked on the action.

Hours devoted to the clean energy upgrade action ranged from a small amount, around 10 hours, to hundreds of hours spread over a year or two (2 municipalities). Four municipalities did not specify the number of hours, as the time spent on the upgrades was spread out and sporadic, making it difficult to quantify. However, half of municipalities interviewed (4 of 8) reported they devoted a substantial amount of staff time on planning, coordinating, and managing the upgrade projects. One municipality representative described the time and effort put into their project, which was a solar array:

“I spent a certain amount of time myself on it. I know our clerk-treasurer continues to spend a considerable amount of time tracking everything. We didn't track the hours, but we did put a significant amount of time in to make sure it happened. It took about a year to get everything going, and then it stalled because of some potential changes in the state regulations. I would say about a year and a half to get everything planned and actually complete the construction”

Other costs associated with the clean energy upgrades were staff time spent researching and analyzing municipal buildings, filling out paperwork, costs for printing, and paying a contractor to remove and trim trees in preparation for the solar array installation.

C.1.2.3 Barriers

As most interviewed municipalities had already installed clean energy upgrades, were in the middle of implementing improvements, or were planning projects (24 of 29), five municipalities described barriers hindering such upgrades.

Barriers for the clean energy upgrades action included:

- Lack of interest in energy efficiency among municipal leadership; reluctance to devote money or staff time to small, one-off efficiency projects. Two municipalities reported clean energy upgrades were not prioritized in their municipal budgets. One representative reported their town government had recently transitioned to a new administration that was not interested in pursuing clean energy projects. The other representative noted their government felt devoting money to small efficiency projects was not worth the time and effort; they wanted to save money for larger energy retrofits for the future.

- Lack of familiarity about the program requirements. One representative reported some confusion about what was required to receive credit for the clean energy upgrades action – they noted: “*I don’t know how that works.*”
- Difficulty finding local and reliable contractors with expertise in energy efficiency. A municipal representative noted that they are knowledgeable about what types of upgrades are needed in their buildings, they simply just need to spend time identifying and hiring contractors who are experienced in energy efficiency installations.
- Logistic difficulties due to separate municipal buildings on one electric meter making tracking and identifying poor-performing buildings challenging.

C.1.3 LED Street Lights

The market evaluation team interviewed 10 municipalities about the LED Streetlight action. Ten other municipalities reported they had already completed the action or were in the process of conversion. Nine municipalities were asked about barriers, as they had not completed the action.

C.1.3.1 Impacts

Interviewed municipalities identified two main impacts from installing LED streetlights:

- Community feedback, both positive and negative
- Energy bill savings

All 10 municipalities reported receiving feedback from community members about the new LED streetlights, which was both positive (9 of 10) and negative (7 of 10). Most municipalities reported that initial feedback after the conversion was negative; the new lights shown brightly into some residents’ windows, were not bright enough, or were aesthetically displeasing. Despite these initial complaints, municipalities reported that criticisms were not frequent, and they were mostly alleviated with clarifying information or streetlight modifications. Multiple municipalities addressed the negative feedback by directly reaching out to concerned citizens and explaining the benefits of the LED lights.

Nine municipalities reported positive feedback from their community about the lighting. This feedback was mostly related to brighter lighting, aesthetics, and enhanced feelings of safety. About half of these municipalities reported improved safety as a result of the LED conversions (4 of 9). These municipalities stated the light from the LED streetlights was more directed on the ground rather than scattering into the sky, illuminating previously dark areas. This effect allowed

for greater visibility in parks and other public properties, and of parked vehicles on streets and boats at the marina.

Although these municipalities have not monitored criminal activity trends since the installation of the lights, police in two communities anecdotally noticed slightly less property-oriented crime such as vandalism or trespassing. Community members have also reported enhanced feelings of safety, as one municipal representative described:

“There was an article in the paper about the downtown area and how the downtown looked much brighter. People, in general, feel safer having the lights, especially around vehicles, since the old halogen lights just didn't illuminate the streets as effectively.”

More than half of municipalities reported cost and energy savings as a positive impact from converting to LED streetlights (6 out of 10). In fact, lower electric bills to save taxpayer money was a primary motivator for municipalities to complete this action. For example, one municipality reported saving thousands of dollars annually on their utility bills due to the efficient lighting.

Most municipalities did not mention maintenance savings from their LED streetlights, largely because these conversions were relatively recent and not enough time had passed to quantify maintenance savings (7 of 10). Two municipalities reported cost savings as a result of less-frequent bulb replacement and maintenance. One municipality reported they had not noticed savings in O&M, though they were expecting significant savings in the long term.

C.1.3.2 Costs

The LED street light action required municipal expenditures on materials and contractor labor:

- Material costs for purchasing street light fixtures
- Labor costs for inventorying existing lights and installing new street lights
- Staff time for planning and coordinating the installation

Costs to upgrade LED streetlights varied depending on whether the municipality owned the streetlights, the number of streetlights in the municipality, and whether they received assistance from an external entity for planning and installation. Larger municipalities spent more on material and labor costs, likely because they had a larger number of streetlights to replace. Estimated project costs – which included both materials and contractor labor – ranged from \$8,000 up to \$750,000.

Municipalities whose streetlights were owned by a utility reported spending less effort on their conversion project than those that owned their streetlights. The four municipalities where National Grid either owned or maintained their streetlights, reported National Grid was responsible for either the LED installation or finding contractors to complete the installation. As a result, these municipalities noted the internal time and money spent on their LED streetlight projects were minimal. The effort the municipality expended involved documenting the streetlights' location and wattages, which took one or two staff members. One community representative reported "*not a ton of time or resources from our end*" was spent on the project, which allowed it to be "*very easily done.*"

Of the six interviewed municipalities that owned their streetlights, half reported their projects required a reasonable amount of time, money, and effort, while the other half said their effort was substantial. The three communities with "reasonable" effort coordinated their projects with outside assistance or with other projects. One of these municipalities reported using a New York Power Authority (NYPA) program to plan their LED streetlight project; NYPA helped them purchase the streetlights and manage the installation contractor. Another municipality reported their project was not costly to do because they financed their LED streetlight project for five years and had collaborated with multiple adjacent villages to negotiate a discounted bulk price on the materials. The last municipality reportedly combined their LED streetlighting project with an ongoing road construction project, which minimized coordination and administration costs; they reported two staff members spent fewer than 10 hours coordinating the project.

The other three municipalities that owned their streetlights reported spending a significant amount of their own internal resources to plan and install the LED streetlights. One of these communities was their own municipal electric utility and reported six staff members from their electric department worked on the project for roughly a year. Another community used their Department of Public Works to dismantle their existing streetlights and hired a contractor to install the new LEDs. They reported 10 staff members worked on the project over the course of a year and a half.

The final municipality reported upgrading their streetlights with an adjacent town through a shared services program. Their project timeline was over a year, with the installation taking about 10 months. They reported three municipal staff members worked "heavily" on it, which included the director of public works, their principal engineer, and their clerk-planner. Five other staff members also spent hours planning and adjusting the lights.

C.1.3.3 Barriers

Fifteen municipal representatives spoke about barriers and challenges of implementing the LED Streetlights action. Of them, eight reported they were in the middle of the transition, while seven reported they had not started converting their streetlights.

Municipalities reported procedural or financial barriers that hindered the finalization of their upgrade or prevented them from starting the process. Below are the key steps that a municipality follows to convert their streetlights to LEDs. These steps are not necessarily in chronological order; some are completed simultaneously with other steps.

1. Conduct a streetlight inventory, assessment, and billing audit.
2. Purchase the streetlights from their utility (if they do not own them already):
 - a. Negotiate the price of the streetlights with the utility
 - b. Partner with communities in same service territory to aggregate resources, number of poles, and demand, if necessary
 - c. Form a purchase agreement with the utility: submit application to and get approval from the Public Service Commission (PSC)
3. Draft a resolution about the plan to purchase (if applicable) and upgrade streetlights; present before municipal board for approval.
4. Procure (if purchasing from utility) and convert streetlights. Different pathways include:
 - a. Develop a Request for Proposal (RFP) for an Energy Performance Contract
 - b. Participate in the NYPA Smart Street Lighting NY program
 - c. Install in-house: find vendors and develop contract(s) for equipment and installation labor
5. Submit documentation, using the LED Streetlight Calculator, to New York State Energy Research and Development Authority (NYSERDA) that demonstrates at least 50% of municipality and utility-owned cobra-head style streetlights have been converted to LEDs.

Municipalities encounter obstacles throughout this upgrade process. These barriers are described in more detail below.

The streetlight inventory process can be complicated for municipalities. Municipalities must inventory their streetlights to document the number and location of the streetlights in their jurisdiction, the lighting type, wattage, ownership (utility, municipality, or adjacent community), condition of the infrastructure, and whether billing of the lights has been accurate. The inventory is required to correctly identify which streetlights a municipality needs to purchase from the utility (if they do not own them already) – a component of both the PSC application and the final NYSERDA documentation. One municipality described this process as cumbersome and complicated. The billing audit to assess the accuracy of the streetlight billing exposed overlapping administration of the streetlights between neighboring municipalities, where both municipalities were being billed for the same streetlights. Furthermore, locating the streetlights with a Global Positioning System (GPS) was another complication, as noted by the representative:

“Conducting the analysis of the current streetlights presented a major hurdle. The obstacle that exists is being able to correctly identify which street lights to purchase. It's getting someone to go around and actually locate each of the physical lights to match against the billing. You need to be able to get the coordinates of each street light. Doing the physical inventory and then relating the physical inventory against the billing was a challenge...”

Municipal representatives perceive the acquisition of the streetlights from the utility as expensive and time-consuming. After a municipality catalogs the streetlights in their jurisdiction, they need to purchase the existing streetlights from their utility and before they replace the lights with municipally-owned LEDs (if they don't already own them): a common, yet convoluted process. Seven municipalities reported barriers related to the process of procuring streetlights from their utilities. Four representatives reported that the price of purchasing the streetlights from the utility was a deterrent in pursuing the upgrade or a hurdle in the process. For example, two representatives noted that it would be expensive to purchase the lights from the utility because their systems are old and “fully depreciated”, which would require them to rebuild some of the infrastructure. One of these representatives described this barrier:

“We're looking at purchasing the street lights from RG&E [Rochester Gas & Electric], which is our utility. The problem with our street lights is they're so old – it's not just the street lights we have to purchase, we would have to rebuild the infrastructure. It's just a matter of trying to get the funding to do that.”

Another municipality reported they had been in the process of purchasing the streetlights from their utility for two years. They initially received approval from their board to purchase the streetlights at a certain price. However, because it took them so long to inventory their streetlights, develop a transfer agreement, and establish a consortium among neighboring communities to aggregate demand, their streetlight infrastructure further depreciated. Because of this depreciation, their utility came back with a higher price of purchase, causing the municipality to go through another round of board approval and further prolonging their timeline.

Two municipal representatives said the coordination with their utility to acquire streetlight ownership has been time consuming and protracted. For example, one municipal representative, who noted they are in the middle of planning the LED upgrade, reported some frustration with their utility:

“The barrier is that Central Hudson can't get their act together. They gave us a proposal five months ago for converting the rest of our street lights. I asked for some minor changes to it, because I wanted to convert them to smaller lights than what they proposed. I then have to call them five times to get anything out of them. This is typical for dealing with them on street lights. Their staff seem to have other priorities and always get distracted from this. I know more about street lights than the people I'm dealing with there.”

The final step in the ownership transfer between the utility and the municipality is filing an application with the PSC. The PSC application requires streetlight inventory information, the municipality's plan for upgrading the lights, and the anticipated financial impacts of the change in ownership. Three municipalities explicitly reported that waiting on PSC to approve their application is the obstacle currently preventing them from moving ahead with the upgrade, though one of these representatives noted that beyond this approval, there were no other barriers. The other two municipalities reported completing all the required steps for procuring the streetlights, submitting the application to PSC, and then waiting on approval from the PSC³.

Municipalities also reported the price of the LED equipment and finding equipment vendors and installation contractors as obstacles to completing this High Impact Action. As noted above, three municipal representatives reported the cost of the lighting infrastructure was prohibitive in moving forward with the upgrade. Two municipalities also reported difficulties in

³ The PSC approval timeline takes 3 to 6 months. At the time of the interview, these municipalities were in this phase.

finding vendors for the lights. One of these municipalities – one that already owned their streetlights because they were a municipal electric utility – reported needing information about where to purchase the LED streetlights. They had opted to use the NYPA program for the purchase of the equipment, but were unsure what specific vendor to use:

“The one thing we are struggling with is understanding where and how much to purchase the new streetlights. I have reached out to NYPA three or four different times. I still have not been sent any information. I still do not have a preferred vendor or any information on where we would buy these units and which ones are recommended.”

The other municipality reported it was initially difficult to find a contractor to install the lights. Their utility requires linemen to do high-voltage streetlight installations and were unwilling to dedicate high-rate contractors for a small number of streetlights. To overcome this issue, the community found neighboring communities to agree to upgrade their lights and partnered with them to achieve economies of scale.

C.1.4 Clean Fleets

The market evaluation team asked 10 municipalities about the impacts and costs of implementing the Clean Fleets action: seven municipalities installed charging stations and four purchased electric vehicles (EVs). Eight other municipalities had also completed the action or were in the process of purchasing charging stations or EVs but were not interviewed specifically for the action. Eleven municipalities had not completed the Clean Fleets action and were asked about barriers.

C.1.4.1 Charging Stations

Impacts

Municipal representatives summarized two primary impacts of installing charging stations:

- Community utilization of charging stations
- Increased awareness and visibility of EVs

Representatives reported that they placed the charging stations close to the downtown area or the community’s main street where restaurants and shops are located; some also reported using the ChargePoint and Plugshare applications to track charging station usage and map their stations. Just over half of the municipalities reported community members regularly charge their EVs at

the station(s) (4 of 7). The other three municipalities reported they have not seen much charging activity, either because they were recently installed, or they do not monitor the stations.

Three communities also reported seeing evidence suggesting people from outside of their community are using the stations to charge their EVs. These municipalities suspected outside visitors were spending money in their towns while their cars charged.

Four municipalities reported that their charging stations have brought greater awareness and visibility of EVs in their communities and in others. For example, a representative reported neighboring villages installed charging stations shortly after their own town installed one. They also reported that installing the infrastructure helped normalize EVs in the community: the charging stations demonstrate that EVs are acceptable and practical, which they expected to encourage purchases of EVs. A municipal representative described this trend:

“As people are beginning to consider adopting electric vehicles as a means of transportation, the knowledge that there are charging stations around certainly makes it more enticing and more advantageous for them to make that change.”

Another municipality reported hosting an Earth Day celebration, which included a ribbon-cutting ceremony for one of their new charging stations. They said this event was well-attended, generated a positive response from the community, and raised community awareness about EVs.

Costs

Costs to purchase and install EV charging stations include:

- Equipment costs
- Labor costs for installation contractors and electricians
- Staff resources to write and review grants, develop RFPs, and maintain records
- Ongoing tracking of station usage

Most municipalities received incentives to help offset the cost of purchasing their charging stations (5 of 7). Incentives came from NYSERDA (3 of 7) or the New York State Department of Environmental Conservation (DEC) (2 of 7), and ranged from \$8,000 to \$32,000, depending on how many stations were installed. These incentives covered the majority of the equipment costs.

Municipalities purchased EV charging stations from EV Connect, Plugin Stations Online, or were unsure about the name of the vendor. Some municipalities paid a vendor to install the stations (4

of 7), while others had internal staff install them (3 of 7). Two municipalities mentioned using a local electrician to assist them in bringing electricity to their stations.

Most municipalities reported one to three staff members worked on the EV charging station action, with more staff members reportedly assisting when municipalities complete the installation themselves. Staff members spent time writing grant applications, developing RFPs for installation contractors, filing and maintaining records, and tracking the charging usage. Internal staff members who worked on the action were typically the municipal clerk, supervisor, staff attorney, electric department, or highway department.

The time it took to plan and install the EV charging stations varied. Three municipalities reported it was a lengthy process to complete the action, noting there were multiple steps that drew out the timeline. These steps included locating a suitable site for the station(s), pouring the station foundation, finding an installation contractor, installing the station (completed by contractor or municipality), bringing electricity and a network connection to the station(s), programming and finalizing the stations, and then unveiling them.

Two municipalities reported similar hiccups in the electrification step: both representatives noted they had little technical experience in or knowledge of how to program the charging station or put in a cellular signal booster. This caused delays because it *“took forever to figure out how to do that,”* according to one representative. One contact also reported having a negative experience with the vendor that sold them the stations due to a lack of instruction and documentation about how to install them.

Three other municipalities reported the time spent on completing the action was reasonable. One municipality representative described the process as *“not time intensive,”* while another municipality reported one staff member devoted 0.1 Full-time equivalent (FTE) to the action. Another municipality that installed the stations themselves reported their electric department dedicated about 40 hours to the project; this municipality was also their own electric utility.

C.1.1.1 EVs

Four municipalities reported purchasing alternative fuel vehicles to add to their municipal fleets. These vehicles included plug-in hybrids, Chevy Volts, Nissan Leafs, and a Mitsubishi Outlander.

Impacts

The four municipalities that purchased alternative fuel vehicles for their municipal fleet outlined two main impacts:

- Greater fleet reliability
- Greater visibility of alternative fuel vehicles

The majority of municipal representatives interviewed for this action reported their fleet is more reliable thanks to the increased dependability of electric vehicles (3 of 4). These contacts reported they have not spent any staff time or money on vehicle maintenance, demonstrating savings in fleet O&M. One municipality noted they have reduced costs by not spending money on gas.

Two municipalities reported their municipal EVs have brought greater awareness of alternative fuel vehicles to their community. These municipalities brought the vehicles to community events to showcase them. For example, one municipality reportedly brought their EV to a luncheon celebrating their electric department being in service for 100 years. They discussed and highlighted the benefits of their EV at this celebration.

One municipality described a negative impact of purchasing an EV, which they purchased to be used by the town's building inspector. A fire in the town required the building inspector to respond and drive a distance greater than the range of the charge on the EV. This situation prohibited the building inspector from reaching the emergency as it was his only form of transportation, and reportedly factored into his decision to resign from the position. The town transferred the EV to being used by the municipal parks department, but the representative reported they continue to hear negative remarks about how frequently staff have to charge the vehicle.

Costs

Half of the municipalities leased their municipal EVs (2 of 4) and the other half reported purchasing them (2 of 4). Municipalities that leased their EVs said they used Enterprise leasing or a leasing company located in Connecticut. Those that purchased their EVs, bought them from local dealerships.

Most communities received rebates or grants to help offset the cost of leasing or buying their EVs (3 of 4). These incentives were federal rebates or NYSERDA grant money. One municipality that purchased their EV reported a NYSERDA grant covered the cost the car, which amounted to roughly \$32,000. The other municipality bought three Chevy Volts for \$30,000 per vehicle.

Federal rebates covered \$15,000 of the purchase (\$5,000 per car), and they paid \$75,000 out of pocket.

Other costs associated with purchasing EVs included internal staff time, such as fleet managers or highway department staff, to manage and maintain the vehicles (2 of 4). One municipality also reported their grant Coordinator spent some time preparing grant applications for federal rebates.

C.1.1.1 Barriers

Twelve municipal representatives spoke about the barriers preventing their municipalities from moving forward with the Clean Fleets action. They noted two main barriers:

- Cost of purchasing charging stations and/or EVs
- Lack of support among municipal leadership

The majority of municipalities reported the capital expenditure of purchasing EVs or installing charging stations as the primary reason for not completing the Clean Fleets action (7 of 12). For example, one representative said they wanted to install three EV charging stations for their community, but the \$60,000 cost of purchasing and installing the stations was beyond what they could afford as a municipality. Another community reported receiving a rebate from the state to cover the cost of the charging station, but, they did not have the capital to pay for the engineering, electrical, and labor costs for installation. This municipality reported their available funds must first go to other high-priority infrastructure needs in the municipality instead of the charging station.

Several representatives noted they were interested in completing the action, but financial barriers prevented them from doing so. For example, one community representative said their municipality could follow one of two paths: pay all of the costs up front and wait for a rebate, or pay the costs over time, which requires approval from their board of directors. They did not have enough cash to pay all the costs up front and had not been able to receive board approval to allocate budget funds to pay the cost over time.

Besides financial challenges, political will was another main barrier preventing adoption of electric vehicles. Some municipalities reported the Clean Fleets action was contingent on approval from their elected officials, who were not interested in or committed to allocating funds for such a project (5 of 12). Representatives noted municipal board members were not interested in the action due to the cost of the EVs or charging stations, or because such expenditures would not provide community taxpayers enough financial benefit. Another municipality reported their

board had no interest in upgrading their municipal vehicles to EVs because their current condition vehicles are still in good working condition.

One interviewed municipal representative described a scenario where newly elected town leadership had blocked their Clean Fleets action due to political reasons. Their municipality had been awarded grant money from the DEC to install charging stations. At a town board meeting intended to get approval to begin building the charging station sites, board members and citizens unexpectedly rejected the grant money, claiming the charging station would only benefit one elected official who happened to own an EV. As a result, the other board members reportedly changed their minds about the charging stations and gave their awarded grant money to another municipality.

A minority of municipalities had no interest in installing charging stations because they noted none or few very community members owned EVs, thus they perceived the stations would not get much use (2 of 12).

C.1.2 Solarize

The market evaluation team interviewed seven municipalities about the impacts and costs of undertaking the Solarize campaign: two counties, four towns, and one village. Three additional municipalities provided some feedback about their campaigns, but were not directly asked about the costs or impacts of the action.

C.1.2.1 Impacts

Municipalities identified three primary impacts from implementing the Solarize action:

- Awareness and visibility of solar and renewable energy
- Increased interest in solar, resulting in more solar installations throughout the community
- Relationships with community groups

For the Solarize campaign, municipalities partnered with a local solar installer to offer discounted solar installations. Solar companies offered installation discounts ranging from 10% to 15% (3 out of 7). The remaining four municipalities were unsure what sort of discount the installer provided to community members. Two municipalities reported their designated solar installer offered additional deals for their Solarize customers: an extended warranty deal on the solar equipment and a discount on a specific brand of solar hardware— SunPower panels. Municipalities conducted public outreach campaigns to educate community members about solar energy and

promote the Solarize program. Table C-1 displays the promotional efforts administered by municipalities to market their Solarize campaigns. Municipalities most often held informational meetings for community members or published articles online or in newspapers about the Solarize campaign.

Table C-1. Solarize promotional efforts conducted by municipalities (n = 7)

Outreach effort	Number of municipalities
Public informational meetings	3
Press releases or news articles	3
Educational workshops	2
Notification on municipal website	2
Fliers	1
Social media campaign	1

Most municipalities reported success with their Solarize outreach campaigns (6 of 7). Three of these noted significant campaign success that brought recognition to their community or widespread interest in solar photovoltaic (PV) from community members:

“The Solarize campaign has been amazing. You see a lot more solar PV out there now. It’s become more like a new normal. It’s not unusual anymore.”

Along these lines, five municipalities noted an increase in solar installations throughout the community, one of which described Solarize as having a lasting effect on solar interest regionally:

“Even after the campaign was over, you could just see there was a tailing effect. I noticed a lot more solar installations were happening, and I even had people who called me. In fact, even today, two years after the campaign, someone called up and said, ‘I missed it, but do you think I could still get in on that?’”

Two municipalities reported that their Solarize campaigns made solar accessible to community members who would typically experience barriers to solar resources. In one community, these were rural residents in remote parts of a county and in the other community, low-to-moderate income residents. In the former community, the representative noted that urban areas had been targeted by solar installers, yet the remote parts of the county had been underserved. Executing the Solarize campaign throughout the county facilitated rural residents’ ability to install solar. The

other community representative noted that the educational campaign and installer discount reduced the lower-income residents' barriers to rooftop solar:

“Solarize was bringing a population that doesn't necessarily have the time or funds to sit down and really research what's going on. It was really helpful because they had these other people that were doing that for them.”

About half of municipalities reported that the Solarize campaign is a valuable gateway in opening other renewable energy opportunities or interest in the community. For example, two municipalities reported that the Solarize campaign generated discussions and interest in community solar projects among residents in their areas. Another municipality's successful Solarize campaign led to larger county-wide and state-wide programs, such as a county-wide Solarize program or a state-wide energy efficiency program called Heat Smart, which they said originated in their municipality. The representative reported that their initial Solarize campaign was a small conglomeration of three local towns – it was successful because it brought in lower solar prices regionally, which eventually morphed into lower prices county-wide, spurring a county-wide Solarize campaign.

One municipality reported dissatisfaction with the community participation in their Solarize campaign. They had devoted a significant amount of time, money, and effort in promoting the Solarize campaign in their community, expecting significant response and interest. They reported that while the ultimate number of solar contracts signed throughout the community was larger than the Solarize program requirement, the number was significantly lower than what they expected. Another municipality reported modest success, noting they had merely met the program requirement of 10 solar installations throughout the community.

Despite two municipalities reporting moderate campaign success, the majority (6 municipalities) reported being satisfied or highly satisfied with the number of solar installations resulting from the campaign. The number of solar installations within a community ranged from 12 to 80, plus more not installed through Solarize. For example, one municipality reported 103 solar installations through Solarize spread across the three towns (two adjacent).

Most municipalities reportedly found it advantageous to form relationships with other organizations to collaborate on the Solarize campaigns (7 out of 8). They worked together to aggregate resources between groups, expand Solarize outreach efforts, build community support, and work on grants collectively. Given that limited staff time was a commonly-reported barrier to

completing the Solarize action, partnering with local groups enabled community outreach, as such partners gave municipalities access to a larger network of potential Solarize customers and helped promote the benefits of solar. Four communities noted that these relationships have endured past the Solarize campaign period. Table C-2 lists the types of groups municipalities worked with on their Solarize campaigns.

Table C-2. Types of groups

Groups	Number of Municipalities
Environmental nonprofit organizations	5
Local activist groups	4
County-wide Solarize collaboratives	3
Cornell Cooperative Extension	2
Energize NY	2
Neighboring municipalities	2

Three municipalities also reported their staff attended the PV Trainers Network Workshop: a voluntary workshop for municipal members attend and provided technical resources and assistance for the campaign. These staff members reported that the workshop demystified the process of conducted such a campaign and informed them of available resources to assist with the campaign. One municipality described the benefits of the workshop:

“I thought that workshop was great. For instance, in terms of explaining the basics of what are the types of inverters that can be used. What are the pros and cons of them? How do they work out price wise? How did they work out in terms of lifespan? Technically, I felt like it was done at the right level so that it was possible for me to feel confident that when look at those various installer bids that came in that I could sort them out and understand who is probably going to be a good fit to our community.”

C.1.2.2 Costs

Municipalities that undertook the Solarize action reported their campaigns were volunteer-driven efforts that required minimal staff time and resources. However, municipalities noted some minor costs, which included:

- Internal staff time to oversee and coordinate outreach efforts
- Flier costs, which include printing and postage

- Refreshments for public meetings

Most municipalities reported that local volunteers drove their Solarize campaigns – accelerated either by a municipal committee or residents who were interested in solar (5 of 7). One community reported their designated solar installer ran their campaign and covered both marketing costs and the costs of the solar installations in the community. Another municipality reported a local nonprofit organization spearheaded the movement and covered some of the costs associated with the campaign.

Those communities that had volunteer-driven Solarize campaigns reported local residents or volunteer committees provided in-kind legal assistance, free public outreach, and donated refreshments served at public meetings. One representative described their volunteer efforts:

“The cool thing about our program – and probably many others – was that it was largely volunteer-driven. One of the requirements is that you have to show you have a few people willing to roll their sleeves up and join our board to help steward this. Everybody took on different roles. Some small group did the outreach or press releases or wrote articles. They were all unpaid. There were definitely a lot of volunteers involved. It was a very positive thing.”

In addition to volunteer support, municipalities reported receiving free technical assistance and resources from local organizations and groups to help their Solarize efforts. These groups, mentioned in the previous section, helped lower labor costs associated with Solarize outreach efforts. The municipal staff time devoted to completing the Solarize action was minimal: time ranged from 0.05 FTE over the course of a year to 0.1 FTE. Elected officials and volunteers, such as an energy committee or an environmental action committee, were the groups who spearheaded their Solarize campaigns.

Table C-3. Staff or volunteers who helped implement municipal Solarize campaigns (n = 7)

Personnel	Number of municipalities
Municipal conservation or environmental committees (volunteer)	4
Staff attorneys or legal departments	3
Office staff, such as clerks	2
Municipal planner	1
Building inspectors	1
Municipal supervisor	1

Solarize campaign costs ranged from a few hundred dollars spent on refreshments served at public outreach events to \$14,000 worth of internal staff time, though this money was covered by a grant from a local foundation. Other costs included printing and postage for fliers or posters for outreach (3 of 7).

C.1.2.3 Barriers

Fifteen municipal representatives spoke about reasons for not completing the Solarize action. They discussed three overarching barriers:

- Internal, municipal barriers: lack of money, manpower, and understanding of the action
- External, community barriers: characteristics of households in the community

Most municipalities reported internal barriers as reasons for not undertaking a Solarize campaign (10 of 15). Most of these barriers related to a lack of manpower and money to plan, coordinate, and implement a campaign (8 municipalities). For example, some representatives perceived that the action would require a significant amount of staff time and resources. Most of these community representatives said they would need an external entity to guide them through the process, such as an outside consultant or a group to partner with, to supplement their staff capacity. As one municipal representative described:

“We felt the Solarize campaign would be very time consuming, especially to do it right and do a good job. That’s another one where it would require more financial resources – we would need to contract with someone to manage it.”

Another municipal representative summarized these barriers:

“The biggest barrier is (1) we would need a partner, which I think we can get someone to host such a thing, and (2) we would have to develop an RFP, spend the time to do the RFP, get a contractor and do all that. The barrier is time and effort.”

Several municipal representatives misunderstood the Solarize action (5 of 15). Some of them explicitly expressed unfamiliarity with the concept of Solarize or defined Solarize as a solar farm or municipal solar array installations (4 of 15). One community expressed confusion about what the action involves and reported a significant need for outreach resources and technical guidance to help educate both municipal staff and community members about the idea behind Solarize:

“When I first read about Solarize, I thought it was great. But it was very confusing to me. I do interact frequently with Southern Tier Solar Works, which guides the clean energy activities. They were the ones that headed up the announcement about a county-level Solarize campaign. I haven’t heard much more about it though. I just don’t understand the Solarize campaign.”

About one-third (6 of 15) of municipalities describing barriers for this action reported external, community-related reasons for not implementing a Solarize campaign. These barriers were:

- Logistic: climate and trees, home aesthetics, and roof structural integrity
- Financial: low electricity rates and low-income households

Two municipal representatives reported barriers related to the abundance of trees and climate. For example, one representative noted that their municipality completed a Solarize campaign, in conjunction with the county, years ago. They reported it was not successful partially due to their snowy climate in the winter. They said, *“if we didn’t have the snow fall on top of the arrays, it might be a bit more attractive to people”*. Another municipality – one that had completed the Solarize action – reported they would have had a much better turnout had it not been for their climate and abundance of trees:

“We’re kind of like the Pacific Northwest: there are lots and lots of trees and lots of shaded places. About 75 or 80 percent of houses that really would have liked to have been part of the program just weren’t suitable because of that or orientation.”

A third municipality reported completing an unsuccessful campaign; they didn’t achieve their goal due a variety of reasons including “lots of trees” and an old housing stock that had roofs not structurally suitable for rooftop arrays.

Communities (2 of 15) with a high proportion of affluent households reported many homes in their jurisdiction were custom homes and described them as “mansions.” Because of the size and customization of homes, one representative reported Solarize would be complicated to implement because the solar installer would need to design a unique array for each home due to its orientation and roof characteristics. The other representative reported a lack of interest among these homeowners because they are worried solar panels would mar the appearance of their homes.

Two municipalities said that in their communities, solar is perceived as too expensive for most low- and moderate-income households. Both of these municipalities reported undertaking Solarize campaigns years ago, but both were unsuccessful due to a variety of reasons. Very few low- and moderate-income households installed solar through their programs due to remaining cost barriers, a lack of interest, and a high absentee landlord rate. Two other interviewed municipalities also reported financial barriers. These municipalities were municipal electric utilities: municipal electricity rates were so low that installing solar was not cost-effective for community members because the return on investment would be too long.

C.1.3 Unified Solar Permit

The market evaluation team interviewed eight municipalities about their adoption of the Unified Solar Permit (USP): four villages and four towns. Three additional municipalities that adopted the USP were not specifically asked about the impacts and costs of the action but provided some feedback about its effect on their communities.

C.1.3.1 Impacts

About half of municipal representatives interviewed for this action reported negative or no impacts from adopting the USP, though the other half reported modest positive impacts. These included:

- Slight increase in solar permit applications
- Expedited review of permit applications
- Minimal community response

Of the eleven interviewed community representatives describing this action's impacts, five reported a slight uptick in solar permits and installations as a result of adopting the USP. Most were unable to report on the actual number of permits filed but were confident that there was an increase. For example, one municipality noted that they have 10 to 12 solar permits processed each year now, a volume they did not have prior to the USP adoption. Two other municipalities noted that there has been a slight recent increase in solar permits, but they attributed the uptick to their Solarize campaign and a general greater awareness of rooftop solar, rather than the new permitting process.

In addition to an increase in solar permits, three municipalities reported the USP has streamlined their review process for solar permits. For example, one municipality reported that before adopting the USP, their building inspectors were responsible for reviewing and approving solar

permit requests, which was challenging for them because they had limited knowledge of or experience with solar. The USP's prescribed list of requirements for approving rooftop solar projects sped up the entire permitting process for solar on the municipality's end. Another municipality described the streamlined nature of the USP:

“Normally, anything that goes for a building permit requires an architectural board of review approval for the design. The USP process would streamline that review for solar, so the general amount of time it would take to obtain a permit would be much less.”

Six of the 11 municipalities reported either no impact or a negative impact from adopting the USP. Two of these reported no new solar permits have been processed since adopting the USP.

These six municipalities noted that there was minimal response from community members after they publicized the new permit. They described the public response as “underwhelming,” or “disappointing.” They sensed that community members did not notice or care about the new permitting process. Most municipalities reported minimal outreach or publicizing efforts for informing the public about the new permit, besides speaking about it at a public hearing. Another community representative mentioned that, out of the four high-impact actions completed, the adoption of the USP had the least amount of impact on their municipality.

For two communities, adopting the USP had unintended effects. They reported that the USP application and requirements were lengthier and more complicated than their previous permits. One of these communities described the work they put into adopting the USP as a “waste of time.”

C.1.3.2 Costs

The main costs associated with adopting the USP were:

- Internal staff time spent drafting and revising the permit application language
- Review by municipal attorneys and building inspectors

The USP was simple and quick according to most representatives interviewed for this action (7 of 8). The general process involved (1) drafting language for the new permit application by comparing the new permit with old permitting processes or by looking at USP templates, (2) permit review by the building inspectors for technical content, (3) legal review by municipal attorneys for legal content, (4) circulation among staff to finalize and format the document, (5)

presenting the permit before the municipal board for approval, (6) adopting the resolution, and (7) processing and submitting the paperwork to NYSERDA.

Typically, several municipal staff worked on implementing the USP action. The number of internal staff members who worked on the adoption process ranged from one staff person up to five staff. Staff who helped implement the USP action were municipal attorneys (5 of 8), building inspectors, engineers, or code officers (5 of 8), municipal supervisors or mayors (4 of 8), planning departments (3 of 8), and municipal administrative staff (3 of 8). In addition to municipal staff, elected officials – municipal board members or councils – spent time reviewing and approving the permit resolution.

Municipal representatives reported the hours devoted to completing the action were minimal (7 of 8). Total number of hours ranged from five hours of staff time up to 30 hours; though most fell in the middle around 15 hours. The typical timeline for adopting the USP was about one month in order to draft the language and get board approval.

Half of municipalities reported receiving either financial or technical assistance for implementing the USP action (4 of 8). Three communities received free technical assistance from their designated CEC Coordinator; their Coordinators guided them through the adoption process and provided examples and templates of other USP permits and policies. All three said the assistance from their Coordinator made the action much easier to complete. One of these communities also used an external planner to guide them through the process but leaned more heavily on the free technical assistance from their Coordinator than their consultant.

Two municipal representatives reported receiving the \$5,000 permitting PV incentive from NYSERDA to cover the costs of learning and implementing the new solar permitting procedures. Both communities described the process as financially “*not burdensome*,” they did not have to pay additional out-of-pocket expenses to cover the implementation of the permit.

One community representative – who also reported the USP has complicated their solar permitting process – described the adoption process as lengthy and iterative partly because of the formatting of the USP application. They reportedly spent a considerable amount of time reformatting the document to simplify it, which involved circulating the document multiple times among staff to finalize the content and formatting. This process took them about a month to complete.

C.1.3.3 Barriers

Most municipalities interviewed had already adopted the USP (24 of 29). Three counties reported they were ineligible for this action because they do not perform permitting duties. Thus, two community representatives reported reasons for not adopting the USP.

One municipality expressed the desire for incorporating a supplementary review process into their solar permitting procedures. They wanted their architectural review board to participate in the solar permitting approval process and chose not to pursue the USP because the USP ordinance did not allow for such an amendment.

The other community reported their existing solar permitting process was already straightforward and streamlined. Their code officials opposed the idea of adopting the USP because, to them, it would not be worthwhile to dedicate resources to improve an already simple process.

C.1.4 Energy Code Enforcement Training

The market evaluation team interviewed six municipalities about the impacts and costs of participating in NYSERDA’s energy code enforcement training. Two other municipalities also offered some feedback about the training.

Building officials were the primary attendees of the energy code training, but others participated as well, as described in the interviews (Table C-4). According to the survey data, only the code compliance officers attended the training in 66% of the communities, while other attendees went to the training in 34% of municipalities (n=683).

Table C-4. Additional Energy Code Enforcement Training Attendees (n = 8)

Attendee	Number of municipalities
Building inspector or code official	8
Supervisor or mayor	5
Clerk or secretary	2
Board members	2
Builders or contractors	2
Municipal architect	1

C.1.4.1 Impacts

Most communities perceived the energy code enforcement training as having a positive impact on their code officials and their municipality. The main benefits of the energy code enforcement training were:

- Improved understanding of how to interpret energy codes for code officials
- Better appreciation and awareness of energy codes among other attendees

The majority of municipalities that participated in the energy code training reported it was useful for their building inspectors and code officers (5 of 8). The hands-on field inspection portion of the training was particularly helpful in fully understanding how a building is complying with energy codes. An interviewed representative described the benefit of the onsite training component:

“Anytime that somebody can come in and support building inspectors, it's a good thing. They just have a lot of really hard work to do all the time, and it's really helpful to have somebody there with them.”

One municipality invited local builders to the training: one experienced builder and a smaller, less knowledgeable builder. They noted that the training was instrumental in bringing awareness about New York State's new Energy Code to the less-experienced builder:

“We were focusing on the little guys that only build one or two houses here or there. They hadn't had any training or hadn't had any outreach for the new energy code. They definitely weren't ready for the new energy code to take effect. My building inspectors learned a lot, but I actually think those two builders probably learned even more.”

This municipality also reported the instructor that led the training offered to come back and help the building inspectors and builders of their town if they needed additional guidance on the energy code. Having a sustained resource and point of contact for advice on energy codes was a large benefit they reported from the training.

The energy code enforcement training was also helpful for other attendees. Interviewees reported it was educational and brought a new appreciation for the importance of energy codes among

elected officials (4 out of 8). For example, one municipality reported the training influenced the mayor's approach to energy savings:

“Internally, it improved the direction that the mayor was trying to do as far as energy savings. It really helped. Because of that training, it has helped rewrite policies for the codes as well as reaching out and bringing public awareness.”

Other elected officials who attended said one takeaway from the training was the importance of having “thorough and stringent” energy codes to save energy and money in new buildings. For example, a town supervisor described the educational component of the training:

“We went out to construction sites and evaluated them. I thought it was a really positive experience. It made me realize how crucial the code office is to make sure people realize the benefits available to them in new buildings and new construction.”

Few community representatives could comment on whether the energy code training caused better enforcement of energy codes, as most interviewees were not involved in such activities. However, one municipality confidently reported that their building inspector was now more thoroughly enforcing energy codes thanks to the training.

Two municipalities reported the energy code training was neither useful nor impactful. They noted this was because the code compliance officer who attended the training had retired shortly after or their code officers were already very well-versed in the energy code and felt that the training did not add any new knowledge. However, one of these municipalities described an unexpected benefit from the training – their town supervisor spread the word about the training to neighboring towns:

“Our supervisor at the time got excited about it and helped organize more trainings with local towns on that. I don't know if we actually had our own impact, but there may have been some impact on other towns because of his advocacy.”

In the surveys and interviews, three municipalities reported frustration with the training due to an interruption in funding. They noted that the training “started off in one place and ended up somewhere else” due to a lack of training funds. One reported this was problematic because they started out with hands-on trainings and then it reportedly switched to an online training program, which they found less useful. Another municipality noted that the training was “great,” but it only

lasted one day because the funding ran out and would have benefitted from more of a sustained effort.

C.1.4.2 Costs

Municipalities that completed the energy code enforcement training through the CEC program reported their costs were limited to internal staff time to complete the training, which fell into two primary categories:

- Staff time spent attending the training
- Staff time organizing and coordinating the various training sessions

Municipalities each sent two to six staff members to attend the energy code training and each training meeting lasted one to three hours. In total, each attendee devoted 6 to 12 hours of their time traveling to and attending the training sessions. One municipality reported it took roughly a month to complete all the trainings. Another representative noted it “*took them forever*” to finish the training but did not specify the actual duration.

Two communities reported their municipal staff spent some time coordinating and setting up the training sessions, which consumed administrative resources. For example, one representative noted that organizing the building permit review meeting took a considerable amount of time because they had to coordinate the timing with the training instructor.

Other costs associated with the energy code training included the money spent on gas to travel to the sessions. One representative noted that the trainings were held outside of normal work hours, which made them harder to attend, but they reported the trainings were still worth it in the end.

C.1.4.3 Barriers

Nearly all interviewed municipalities eligible for the energy code enforcement training action completed it or were finishing the sessions at the time of the interview. Four community representatives discussed barriers to this action.

Most of these communities reported a similar reason for not moving forward with the training: lack of time and resources (3 of 4). Two municipalities reported their building inspectors are part-time. These communities sensed it would be a “*big hurdle*” to plan and implement a training for their officers given their limited time. Another representative reported their code officers were simply too busy to take on such a training.

Other reasons for not completing the code training included: the training’s location was too distant from their community; a lack of interest from the code enforcement officers and choosing to prioritize what they saw as more impactful actions from the High-Impact Action list.

C.1.5 Climate Smart Communities Certification

The Climate Smart Communities Certification action is somewhat complex, as it involves making a pledge comprising 10 elements and earning points for completing clean energy actions. After achieving a certain number of points, municipalities are recognized at the certified, bronze, silver, or gold level. The team anticipated that some community representatives might not be familiar with the Climate Smart Communities certification system, so before asking them how difficult they thought it would be to complete the action, the team asked them to rate their familiarity with it.

We see a similar percent of community representatives reporting they are “not at all familiar” with the Climate Smart Communities program at baseline (53%) and at Time 1 (52%). Even so, survey data indicates there has been an increase in the number of communities completing this action. (Table C-5). Of those who were not at all familiar with the certification, 97% rated the difficulty of implementing the action as a “5” or higher. At Time 1, a little over half (52%) of representatives were “not at all familiar” with the certification. Of those that were not at all familiar with the certification, 90% rated the difficulty of implementing the action as a “5” or higher at Time 1.

Table C-5. Level of Familiarity with Climate Smart Communities Certification*

Familiarity	Number of Communities	Percent	Number of Communities	Percent
	At Baseline		At Time 1	
Communities registered or certified as a Climate Smart Community	207	13%	319	20%
Very familiar	125	8%	27	5%
Somewhat familiar	292	18%	244	24%
Not at all familiar	840	53%	803	52%
Did not know if registered or certified, or reporting not applicable	135	8%	207	13%
Total communities	1,599**	100%	1,600	100%

* Community contacts rated their familiarity in spring 2017 and summer 2018. The numbers of communities indicate the size of the population represented.

** Due to rounding when the weights were applied, the total does not equal 1,600 local governments.

The market evaluation team interviewed three municipalities about the costs and impacts of becoming a Climate Smart Community (CSC) – two counties and one city. Three other municipalities provided in-depth feedback about the CSC program: two in the survey and one interviewee who was in the middle of the CSC certification process.

C.1.5.1 Impacts

Municipalities complete a variety of actions to become a certified CSC. Table C-6 displays the activities and projects that interviewed communities undertook to become certified. The full list of available actions is on the New York State Climate Smart Communities website.⁴

Table C-6. Actions completed for CSC Certification (n = 6)

Activity	Number of municipalities
Installed energy efficient upgrades to waste facilities	3
Completed energy efficient projects at municipal buildings	3
Set up climate action committees	3
Developed Climate Action Plans (CAP) & GHG Inventories	2
Created new comprehensive plans with a focus on sustainability	2
Established farmer’s markets	2
Installed solar arrays or farms	2
Rolled out new waste collection and recycling programs	1
Installed green infrastructure throughout community, such as rain gardens	1
Redeveloped a brownfield site	1

Most municipalities reported the CSC program has had a positive and widespread impact on their community (5 out of 6). These impacts included:

- Public recognition of clean energy activities
- Ongoing collaborations and relationships
- Community education and engagement for clean energy
- Tailored sustainability roadmaps guiding planning
- Advantage in applying for grants

Multiple CSC-certified communities reported that public recognition was a notable benefit of becoming certified (3). One municipality noted that the Department of Environmental

⁴ <https://climatesmart.ny.gov/actions-certification/actions/>

Conservation (DEC) – the entity that administers the CSC program – held a press event to publicize their certification and celebrate the accomplishment. The representative stated it was beneficial to expose their efforts to get recognition for the sustainability projects they had completed. The recognition and exposure received by municipalities increased collaboration and networking opportunities. Another municipality reported municipalities across the state and contacts from NYSERDA have recognized their efforts, which has been beneficial for improving their visibility and eligibility for grants:

“We receive phone calls from other communities all over the state saying, ‘we can’t believe what you’re doing!’ It’s a feather in our cap. People pay attention to our progress and are impressed. And our legislators have seen that recognition and that it was taken seriously in the state. It has increased our visibility and our network. I have people from NYSERDA calling us. Overall, it’s just been a great program for us.”

Most municipalities reported forming new relationships and collaborations as a result of undertaking the CSC certification (4 of 6). These relationships were:

- Within government: interdepartmental collaborations to extend internal GHG reduction guidelines and goals
- Within the community: partnerships with local activist groups within colleges or high schools to expand climate action efforts
- Across local governments: neighboring municipalities to guide them through the CSC process or help them obtain grant funding.

For example, one municipality reported that being active in the CSC program has created a local “municipality network” for environmental education and advocacy. Another municipality representative, who was part of the municipality’s sustainability office, described the development of a closer departmental relationship as an outcome of creating their CAP:

“Through the development of our CAP, we were able to really engage our Division of Public Works. We asked them, ‘What are your priorities? What do you need?’ We realized to reduce our GHG emissions, we needed to work with the Division of Public Works because they control the buildings, our vehicle fleet, and solid waste. We worked really closely with DPW and how they outline their priorities and that’s how we set our GHG reduction goals.”

Municipalities also described community-wide educational efforts as a positive result of the CSC program (3 of 6). Specifically, municipalities reported taking on a role of community “educators” and “promoters” of climate efforts. For example, one county noted that even though they were unable to pass the Unified Solar Permit, they have disseminated their zoning knowledge for large solar arrays gained from participating in the CSC program to neighboring towns. This municipality also reported hearing positive feedback from community members about the energy efficient upgrades at their municipal buildings, which was an action completed under the CSC program. They noted this positive response, in addition to energy savings:

“We just completed a project this last year: HVAC and lighting retrofits of our government center which has really seen a huge drop in our electric bills for this building. The lighting is spectacular – people say they don’t have headaches now at the end of the day due to removal of fluorescents. We’re seeing a high impact in how people are responding to the building retrofits.”

Drafting and adopting comprehensive sustainability-focused plans completed as part of their certification efforts, has led to another impact for the local governments; those documents guide municipal planning activities. Two municipalities described the CSC program and its actions as giving them a tailored “roadmap” for prioritizing and navigating their future clean energy efforts.

Another benefit of becoming a certified CSC is that it provides an advantage when applying for grant funding. For example, one municipality reported that being a certified CSC gives them “massive bonus points” when they now apply for grants, such as a grant for a composting study or an organics waste management study.

One of three interviewed municipal representatives reported they have noticed “no benefits” from the CSC program beyond cost savings from lower electricity use. They described some of the actions completed under the CSC program as simply “feel-good things” with no measurable outcomes. This municipality also reported that the program did not guide or compel them to complete the climate activities because they were already complete or were in the process of completing them anyway.

C.1.5.2 Costs

The costs associated with becoming a Climate Smart Community are:

- Direct administrative costs for documenting any existing climate-related actions the community has taken

- Expenditures spent on initiatives taken to become a certified CSC

All three municipal contacts interviewed for this action reported spending internal staff resources to gather information on and document all sustainability-related activities completed in the community to receive CSC credit. This documentation took many hours: one municipality reported it took 70 hours across two staff members, while another community representative noted they spent 200 hours of their own time documenting the actions. One municipality also received some guidance from the New York State Department of Environmental Conservation to help them through the certification process.

The timeline for becoming a certified CSC – from taking the pledge to becoming certified – ranged from three years up to seven years for the interviewed communities.

One municipal representative – who described the CSC program as the “roadmap” that guides everything they do in their sustainability office – reported devoting a significant amount of internal staff resources to complete the action. This municipality took the CSC pledge in 2010 and became certified in 2017; the representative reported they spent roughly \$55,000 worth of staff time last year on the program, which equated to 25% of their employees’ hours in their Office of Sustainable Energy. They also purchased and installed EV charging stations, which counted towards both the CSC and the CEC programs, and published a resource guide about their CSC efforts in a local publication, which cost about \$2,000 in printing costs.

C.1.5.3 Barriers

Ten representatives from unregistered municipalities reported barriers to moving forward with the CSC High Impact Action, which included:

- Unfamiliarity with the CSC program
- Lack of a financial incentive or motivation to become certified
- Ten representatives from municipalities that had taken the CSC pledge and were registered spoke about barriers to becoming certified, which differed from unregistered municipalities:
- Lack of staff time to document and submit their CSC pledge elements

Interviewed unregistered municipalities had smaller populations, on average, than those that had registered or become certified with the CSC program (Table C-7). Most interviewed small municipalities (populations under 5,000) had not registered with the CSC program (8 of 11). Many of these small municipalities reported the same barrier: they were unfamiliar with the CSC

program, noting they had never heard of it nor did they have enough information about it to move forward with registration (5 of 10 unregistered municipalities that reported barriers).

Most interviewed municipalities that had lower median household incomes (under \$40,000) had not registered with the CSC program (5 of 7). This may correlate with several unregistered municipalities reporting the need for a financial incentive or additional funding to increase their political interest in moving forward with the action (3 of 10). For example, one municipal representative did not see a clear financial benefit in moving forward with the CSC action. They reported their elected officials were devoted to CEC program participation because they were confident CEC certification would open up funding opportunities for their community or provide a financial return. But their elected officials perceived the CSC differently:

“It needs to make sense from a financial standpoint. What can we do to incentivize the Climate Smart Communities Certification? The reason the CEC program was initiated, was yes, do the right thing, but we can also realize some revenue for this or some funding. If there was more of that through the Climate Smart Communities Certification, then it might be more appealing.”

Table C-7. Differences in community characteristics between CSC-registered and unregistered municipalities (n=29)

Characteristic	Registered or Certified Municipalities	Unregistered Municipalities
Population		
Small (<5,000) (n = 11)	3 (27%)	8 (73%)
Medium (5,000 < 40,000) (n = 15)	12 (80%)	3 (20%)
Large (>40,000) (n = 3)	2 (67%)	1 (33%)
Median Household Income		
Under \$40,000 (n = 7)	2 (29%)	5 (71%)
\$40,000 to \$80,000 (n = 15)	10 (67%)	5 (33%)
Over \$80,000 (n = 7)	5 (71%)	2 (29%)

Most municipalities that were registered in the program reported a similar reason for not becoming certified: lack of staff and time to devote to documenting and submitting their pledge elements (8 of 10). These municipalities have completed the actions required for CSC certification; it’s simply a matter of time and effort in tracking, organizing, uploading, and submitting the documentation for each completed action. These representatives reported that such

work requires time from devoted volunteers, a sustainability department, or an energy committee, many of which they don't have. One representative described their limitations on time and staff:

“Many of the things that we need to do, we have already done. But we have not gone through the steps of really putting that together and documenting it. And I think that's a barrier, because again, we really run on volunteer time. Somebody has to take the time to go through the checklist and check things off and make sure that we have this and that.”

Another representative shared a similar experience:

“The barrier to becoming certified is staff time. We just have to figure out what it is and go through all the point systems and see what we have. We just don't have the staff time right now or we would have done it already.”

One municipal representative expressed some confusion about next steps in the CSC certification process; they took the pledge several years ago but have since lost momentum due to a lack of understanding in the program requirements: *“I don't really understand what else is required for us to be CSC.”*

Another municipal representative was concerned about the timing limitation for the CSC actions. They took the CSC pledge in 2009, developing a Climate Action Plan in addition to completing other related actions years ago. The representative described their municipality as an “early adopter” because they had accomplished many sustainability initiatives years ago. However, many of these activities were no longer eligible for CSC points because of their timing, which has been problematic for the municipality:

“I'm a little concerned, because as an early adopter of a lot of different things – recycling, composting, resiliency efforts, adopting solar on municipal buildings, retrofitting – all of these things have a timing component that may prohibit their being used to qualify for a Climate Smart Community. I would consider that a problem because we're continuously evolving toward a better place to reduce our carbon footprint. We don't have resources to be able to redo or do those over again.”

C.1.6 Community Choice Aggregation

The market evaluation team interviewed two municipalities about the costs and impacts of completing the Community Choice Aggregation (CCA) action. One community that participated in the survey that had also adopted CCA legislation commented on the process. These three municipalities were located in Westchester County and participated in Sustainable Westchester's CCA program.

While few New York State communities are in a CCA, 15% of communities (weighted, from survey data) reported that their municipal decision-makers had considered it or were considering a CCA for their residents.

C.1.6.1 Impacts

Municipalities described three main impacts from participating in the CCA:

- Ongoing collaborations with Sustainable Westchester
- Increased awareness and visibility of renewable energy
- Initial skepticism from community members

All municipalities interviewed for this action reported ongoing relationships with Sustainable Westchester, which is a collaborative initiative between Westchester county and its local governments. Partnering with Sustainable Westchester opened up other opportunities for municipalities, such as access to their EV initiative or the HEATSMART program. Interviewed contacts also noted that this partnership brought a sense of collective action among participating communities, which was beneficial in gaining support for the CCA. One municipal representative described this relationship:

“It's great to have this group talking about all of these different issues together, looking at them together, and figuring things out together so that we don't each individually have to come up with the answers ourselves. And we also have the power of purse. We are able to have a greater impact because we're working collectively.”

A municipality also reported that partnering with the local Sustainable Westchester organization to supply energy allows them to have more control and independence:

“I think the notion of doing something collectively locally is one that people like, which is different than Con Ed. Con Ed, you just feel like they're one of the big power players. This makes us feel like we have more control.”

Two interviewed municipal representatives reported that the CCA has significantly raised the profile of renewable energy in their communities. Prior to undertaking the CCA, municipalities' energy supplies had very low proportions of renewable energy: moving from a low proportion of renewable energy to 100% renewable increased understanding of and support for renewable energy among community members. The renewable energy component of the CCA drove interest in joining, as one municipality noted:

“If one were to try to remove the renewable aspect of the CCA, I think there'd be a lot of opposition to it”

This municipal representative also observed an improved understanding in carbon emissions and electricity production among community members.

Undertaking a CCA required initial support from board members and the community to pass the enabling legislation. All interviewed contacts reported there were concerns and skepticism among community members about the CCA in the beginning, including significant political pushback among elected officials who were opposed to it.

Despite the initial lack of political and community support, municipalities reported that widespread educational and outreach campaigns informed community members about the benefits of a CCA and reduced the concern. Municipalities used a variety of outreach mechanisms to educate their board members and communities about the benefits of a CCA: community meetings, email blasts, mailers, fliers, and a website. After the public outreach was conducted, municipalities reported increased community support:

“The educational campaign was sufficient to quash the very vocal, negative people who didn't know what they were talking about. When we did an impromptu survey of people who attended the events, it was 6 to 1 people supported the CCA. That was enough to inform the board members that the citizenry wanted it. So, those who were informed on it, supported it.”

Two representatives reported there were some unhappy citizens after the CCA legislation was passed and implementation began. Community members specifically disliked the automatic enrollment nature of it. One municipal representative described these frustrations:

“We got plenty of calls from people who were very angry that we opted them into a new energy provider instead of them being able to opt-in themselves. They were furious. That went on for over year. We still get calls occasionally.”

Most municipalities could not report actual opt-out rates for their CCAs (2 out of 3). However, one community reported about a quarter of their electricity customers were not enrolled in the CCA due to either opting out or being ineligible⁵.

Two municipalities reported their CCAs brought slightly lower electricity costs compared to their utility rates; kWh prices were a few cents lower. For example, one municipality estimated that CCA customers would save about \$300 on their electricity bills over the course of two years. While these modest savings were beneficial, interviewed representative reported they were motivated to participate not for lower electricity costs, but to *“push the envelope for demand for clean energy.”*

C.1.6.2 Costs

Municipalities incurred some costs when completing the CCA action. These included:

- Legal: municipal lawyers reviewed contracts and RFPs in the initial stages of the CCA process
- Outreach: municipalities promoted the CCA through their website, fliers, and publications

As both municipalities were part of Sustainable Westchester’s CCA, representatives reported similar experiences. They noted that because Sustainable Westchester and Westchester Power run the CCA program, costs and workloads to the participating municipalities were not extreme.

Costs of joining a CCA typically occurred in the beginning of the process, when municipalities put out bids for the electricity supplier and then negotiated contracts with Sustainable Westchester and the selected energy service company (ESCO). These processes required counsel

⁵ Customers who were not eligible to join the CCA were customers already under a power contract or they were “blocked” from joining, meaning they were low-income households.

and legal review from municipal lawyers. One municipality reported the initial stages of the CCA process were time-intensive because other municipalities joining also had their lawyers reviewing and revising the contracts with Sustainable Westchester.

Municipalities also spent money informing, educating, and promoting the CCA in their community, though the costs spent on this outreach were minimal. Both municipalities reported spending some time on creating email blasts or adding information about the CCA to their municipal website. One community incurred printing costs for the fliers and publications they created about their CCA. Staff also spent time answering citizen's questions on the CCA through phone calls.

One municipality was able to specify the costs incurred to complete the CCA action. These included:

- About 35 hours of staff time working on the CCA process, which covered outreach and legal time,
- \$6,000 or \$7,000 annual fee paid to Sustainable Westchester to cover CCA dues, as well as other services, and
- Approximately \$1,000 worth of municipal dollars spent on outreach materials.

The other municipality did not report specific costs but described the process as a heavy lift in the beginning due to legal and outreach costs, but then lightened up once the CCA action was completed.

C.1.6.3 Barriers

Twenty-one municipal representatives spoke about barriers to developing a CCA. These included:

- Lack of familiarity with or lack of information about CCAs
- Concerns from community members and elected officials about opt-out requirement
- Limited staff and resources to dedicate to the action
- A perceived inability to establish a CCA at a single, small municipality

Almost half of municipalities that hadn't completed a CCA were unfamiliar with the action and needed more information (9 of 21). Five municipal representatives were unfamiliar with the concept of CCA and were unsure what the action entailed. When asked about barriers for developing a CCA, many of these representatives expressed unfamiliarity: *"I'm not sure what you're referring to"* or *"I don't really know anything about it"*.

Four representatives noted the complexity of establishing a CCA requires staff who are knowledgeable about how to develop or join such a program; knowledge they reported their staff did not possess at the time of the interview. For example, some representatives reported the process of selecting an administrator was daunting and did not know how to approach that decision. Another representative reported undertaking a CCA would be the most difficult action for their community due to the lack of familiarity with it among both community members and board members:

The complexities of a CCA and how to convey them to someone who doesn't have a lot of patience, whether at a board meeting or at somebody's door; that's the biggest hurdle."

One-third of municipal representatives who spoke about CCA barriers reported concerns about the automatic enrollment nature of the program (7 of 21) with both elected officials and community members reportedly perceiving the opt-out nature of the CCA as controversial. Some citizens were opposed to it due to fear of government intervention. One representative used the term “*big brother government,*” while another municipality that completed the CCA action reported an initial hurdle of diffusing the “*socialist*” perception of the program.

Another representative reported their town had considered pursuing a CCA years ago, before starting the CEC program, but decided against it as many community members would likely be opposed to the opt-out structure:

“We looked at a CCA a couple years ago. Our board decided against it. They can opt out, but we just didn't want to tell people that they are automatically going into this program. We have some strong-headed people, not very well-off either. They don't like being told what to do. The barrier there is a lack of community interest and buy-in.”

Similarly, one municipality reported starting the CCA process: they had conducted research, drafted a resolution, and presented their recommendations before the town board. However, the board voted against it because they were nervous that customers with special rates from the utility would lose those benefits if they forgot to opt-out of the CCA.

Some municipalities also reported a lack of resources as a barrier in moving forward with a CCA (5 of 21). They perceived the action as “*time-consuming,*” “*labor-intensive,*” and “*complex.*” Completing the CCA action requires staff to spend time gathering information about it, drafting a

resolution, passing legislation, educating the community through public outreach, choosing an administrator (or being the administrator), and providing an annual report. These community representatives were concerned that they did not have enough resources or knowledge to support such an undertaking, as these steps involve the creation of multiple plans and contracts, as well as coordination and communication with the ESCO and the Public Service Commission (PSC).

Although the action does not impose municipal size requirements for completing a CCA, three municipal representatives expressed concern that their communities were too small to develop one. These municipalities reported they would need to partner with nearby communities to make a CCA feasible for their residents and cost-effective for their municipality. For example, one representative reported they “*do not qualify*” for a CCA because they are too small (they were classified as a medium-sized municipality in NYSEDA documentation), thus they described a need to team up with other neighboring communities. Another representative simply reported they are not pursuing a CCA because it “*just wasn’t a feasible option given our size.*”

C.1.7 PACE Financing

The market evaluation team asked five municipalities about completing the Property Assessed Clean Energy (PACE) Financing action. Four communities that participated in the survey also provided feedback about the impacts and processes of undertaking PACE Financing.

C.1.7.1 Impacts

Most municipalities reported the PACE Financing action has had a minor impact on their community. They reported the following feedback:

- Minimal utilization and interest in PACE financing among local businesses
- Anticipated uptake after promotion of PACE 2.0
- Some increased awareness of energy efficiency among elected officials

All but one municipality reported that local businesses have shown little interest in using PACE to finance energy efficient upgrades to their buildings. One municipal representative reported that local farmers seemed excited about the opportunity when they first learned about it, but no one ultimately used it. In addition to this municipality, two other communities reported no businesses had used PACE financing at the time of the interview. The other two interviewed communities

reportedly each had one participant in the program. Most municipalities shared the challenge of trying to cultivate interest among businesses, as one community representative reported:

“There’s really been nothing. We keep trying to educate people about it. We try to get creative with who can participate. We had a theater come in and seemed excited about it and then we never heard from them again.”

Municipalities reported a variety of reasons for the lack of uptake in PACE financing among local businesses. Two communities said local businesses in their area negatively associate PACE financing with government interference, and two others reported that going through the PACE financing process required too much paperwork:

“These types of programs add a layer of complexity for not a lot of benefit. Businesses would be making improvements anyway as part of their project – adding government interference is not perceived as beneficial”

Despite some negative feedback about the changes to PACE 2.0, many interviewed municipalities anticipated PACE financing will become more popular among local businesses once they publicize the new requirements (6 of 9). They noted that the new PACE Financing is an improvement from the previous version of the program because it is a smoother process, allows for a wider range of energy efficiency projects, and it removes the financial risk to the municipality.

Some municipalities reported a slightly greater awareness of energy efficiency and clean energy among their elected officials as a result of the PACE Financing legislative processes that involved them (3 of 5). Another municipality reported that the legislative process of passing PACE Financing kept energy efficiency in buildings as a cost-saving mechanism in the spotlight.

Three municipalities explicitly desired PACE Financing to include residential households. They mentioned they could achieve even greater energy savings in their communities if the program expanded to include residences.

C.1.7.2 Costs

Municipalities that adopted PACE financing reported two primary costs:

- Staff time, particularly municipal lawyers, drafting and reviewing legislation
- Labor and material costs spent on advertising the new program

All interviewed representatives from communities completing this action (5 of 5) reported their municipal staff spent time on drafting legislation authorizing the establishment of an Energize NY Finance program. Specifically, creating the legislation included reviewing Energize NY Finance program documents and local laws, modifying the existing municipal legislation, and presenting the policy before elected officials for approval. Staff who worked on drafting and reviewing the legislation included municipal attorneys, tax receivers, assessors, community development specialists, office of sustainability staff, and administrative staff. Number of staff members who worked on the PACE Financing action ranged from one person to multiple employees spread across three different municipal offices.

Communities were mixed on whether they viewed completion of this action as time-consuming. Two interviewed representatives reported the PACE financing action was time-intensive and staff devoted many hours to it. For example, one of these representatives reported one staff member spent two- or three-months helping craft and finalize the legislation. This representative also noted it took several months for their board to approve and pass the PACE legislation.

The rollout of PACE 2.0 caused municipalities to have to go through another round of legislative processes to amend the law. Some communities reported this programmatic change also caused the process to be lengthy and complicated:

“Energize New York was a little bit heavy on the paperwork and process. We had to adopt a local law. Then something changed and we had to go back and amend our local law, which required going through all the steps again.”

Three municipalities that adopted PACE financing did not perceive the action as burdensome on staff. Two of these representatives were unsure how many hours were spent on it, while one reported it took a total of 40 staff hours to complete the action.

Two municipalities reported spending money on advertising the new legislation. One representative reported they spent \$6,000 on promoting the PACE financing to community businesses; another reported a “few thousand dollars” on fliers and banners for advertising.

Three out of the five municipalities reported they received no outside assistance to help them draft the PACE financing legislation. Two municipalities used external help: one hired an independent attorney to review the law, while the other received free technical assistance from the Central New York Regional Planning and Development Board.

C.1.7.3 Barriers

Most municipalities interviewed were not eligible for the PACE financing action (19 of 29). Those that were eligible (5 of 29) or those that completed PACE and experienced no uptake (4 of 29) reported three barriers:

- Lack of familiarity with PACE among municipal staff
- Not enough staff capacity
- Fear of government interference among local businesses

Some municipal representatives expressed some confusion and unfamiliarity with PACE financing (3 of 5). One representative reported they were unsure what types of projects they would use PACE financing for, which demonstrates their lack of understanding of their role. Other representatives reported a general unfamiliarity with the program. One community that had adopted PACE financing reported their municipal staff still do not understand the program very well and because of this, they had not promoted the program much to businesses in their community.

Municipal representatives also reported staff capacity as a barrier in moving forward with PACE financing (2 of 5). For example, one representative explained that their city clerk would be responsible for managing the PACE program. They reported the city clerk's workload is full and would not have the capacity to undertake such a responsibility. However, the representative was hopeful that their community might pursue PACE financing in the future when they have more time.

Another municipality described PACE as a "heavy lift" because it would require participation and coordination from multiple departments. As they explained:

"Anytime a program involves any sort of change to the village's budget structure or finance structure, that's tough. That usually requires our treasurer and finance department to be onboard and our village manager to understand those impacts. We also have to get our financial advisor involved, take it to the village board, the board would then have to vote to establish that, which is usually part of the budget process. That can be a heavy lift."

Another municipality said PACE financing would raise a political question about the local whether the government, as a taxing entity, should be administering a financing program.

Three municipalities that had adopted PACE financing gave some potential reasons for the minimal program uptake among their local businesses. Some businesses wanted to limit government involvement into their finances and preferred to finance energy efficiency upgrades through private loans rather than through property taxes. These local businesses perceived the PACE financing program as a government program and were not interested in participating because of this. Others noted that businesses did not want to complete the required paperwork, nor did they want to spend the time to learn about a new financing mechanism.

C.2 Barriers and Resources Needed

This section presents the most difficult barriers preventing communities from implementing any of the program's High Impact Actions and what resources they reported they need to overcome those barriers.

C.2.1 Most Difficult Barriers

Financial constraints presented the most difficult barrier to implementing the CEC program's High Impact Actions, according to both survey and interview findings (Table C-8). Financial constraints included lack of resources, funding, and/or municipal budget.

Lack of staff and personnel was also described as a prominent barrier by both surveyed and interviewed communities. Several communities mentioned that they would otherwise complete some actions but cannot do so with busy or part time staff. This barrier was particularly significant for smaller communities.

Surveyed and interviewed community representatives further described lack of community support or interest as a barrier. Some communities for example, described that although they are in support of CEC actions, community members might not see the value of investing time or money to complete the CEC High Impact Actions or support them for concern they would increase taxes.

Several surveyed communities noted that other issues were a greater priority and several also indicated that lack of board, city council, or legislative support was a barrier.

Lack of knowledge was also a common barrier community representatives discussed in surveys. Representatives described that they were not aware of all available actions or how to go about completing them. Others explained that their city council or board members, who are integral to

getting approval to pursue actions, lacked the knowledge to understand the actions’ importance and how the actions can be achieved.

Table C-8. Most Difficult Barrier to Overcome (n=125)* **

Most Difficult Barrier	Number of Communities
Financial constraints	69
Lack of staff and personnel	35
Lack of community interest/support	22
Other issues a greater priority	18
Lack of knowledge	13
Lack of board, city council, or legislative approval	10

* Interview and survey data are combined.

** Due to time limitations in the interview, 21 of 29 communities were asked this question

Other, less commonly-cited barriers mentioned in the survey and/or interviews are described as follows.

- **Political barriers:** ‘Political barriers’ refers to political or ideological differences among community members or municipal leaders. As described by some interviewed community representatives (5), some CEC High Impact actions are opposed because they are viewed as initiated by a democratic-led government and not translating to financial benefits for the community. Relatedly, another described that if a new mayor is elected, community priorities may change, and the community might no longer pursue CEC High-Impact actions or environmental programs.
- **Working with other entities:** Community representatives (5) noted difficulty working with other communities, groups, or entities including New York State Electric and Gas (NYSEG). For example, one community described waiting on NYSEG to get the correct information about the value of their streetlights and another noted that working with other groups meant waiting for them to complete a task, which delayed their progress.
- **Lengthy or difficult process:** Community representatives (4) mentioned issues such as the time it takes to get necessary approvals from within their local government and the amount and complexity of necessary paperwork.
- **Inertia or business as usual:** Two community representatives also described a general reluctance on the part of the community and board members to try new and unfamiliar programs.

C.2.2 Resources Needed to Address Barriers

Most municipalities mentioned at least one resource that would help them advance their clean energy strategies and overcome their barriers (28 of 29). These resources fell into four categories:

- **Financial support:** grant opportunities or other funding sources
- **Technical assistance:** information and guidance on specific actions, tools needed
- **Staff support:** handholding and guidance from Coordinators or other entities
- **Outreach:** clean energy education and awareness to community members and elected officials

The most commonly cited resource needed was financial support: about half of municipal representatives mentioned the need for funding or grant opportunities from NYSERDA (14 of 28). Many of these municipalities reported funding in a general sense; not specific to a High Impact Action (8 of 14). Representatives noted the desire for funding opportunities to pay for general clean energy projects (6) or to cover the salary of an environmental staff person (2).

Some municipalities reported financial support would help address specific High Impact Action monetary barriers (5 of 28). For example, two representatives reported additional grant money would help their community overcome their most difficult barrier of covering the cost of converting their streetlights to LEDs. Additional grant opportunities would also address financial barriers related to Solarize campaigns (2) and purchasing EVs or charging stations (2).

About two-fifths of municipal representatives suggested additional technical assistance and education on specific clean energy topics would be beneficial in moving forward with other actions (11 of 28). Many of these suggestions were specific to High Impact Actions. Five communities expressed the desire for more education on EV procurement and charging infrastructure, either for municipal staff or community members. For example, one representative suggested a collaborative ongoing program with NYSERDA and the DEC to provide continuous, rather than periodic, assistance for EV and charging station procurement, in order to take into account the long municipal timelines for purchasing vehicles.

Two other municipalities reported additional technical assistance with the streetlight action is needed. For example, one representative described the need for the CEC Coordinators to be equipped with “boots on the ground” engineering expertise to help guide communities through the challenges of the streetlight conversion. This representative also noted the municipal need for technical aid to implement other clean energy actions, such as community solar.

Similarly, some communities recommended NYSERDA provide specific tools and resources to guide them through their clean energy initiatives (7 of 28). These tools included: low-cost software to manage GHG data to track CSC progress, publicized video tutorials on benchmarking municipal buildings, a more comprehensive energy database or tool that monitors the overall municipal carbon footprint (including fleet emissions), RFP templates for municipal energy projects, such as solar arrays or EV-ready buildings, and more case study examples of what ahead-of-the-curve municipalities do to reduce energy use.

Three municipalities reported a lack of staff as their most difficult barrier in moving forward with clean energy actions. This hindrance could be alleviated through additional guidance and staff support provided by CEC Coordinators or consultants, which were common resources needed by interviewed communities (11 of 28). Most of these representatives reported the need for staff support in the context of assisting them with specific High Impact Actions, though a few desired additional funding to pay for an environmental staff person, as mentioned above.

Multiple communities reported the need for staff support to guide them through the CSC action (4). In one instance, a representative described the CSC action as “an impossible heavy lift to pull off”; they even hired several interns to help them get through the process, but they are still reportedly working through it. This representative reported they needed frequent staff support, in addition to funding, to help them achieve certification. Another municipal representative reported that a staff member who helps lead and facilitate their efforts would help them overcome their CSC barriers:

“If we had someone who would spend some time with us and look at the Climate Smart Community steps and help to get that rolling, and stay in touch in terms of facilitating, that would make a big difference. I think that what we really lack, still with every one of these actions, one person to take the lead and stay on it until it gets done.”

Additional staff or Coordinator support would also help municipalities with Solarize campaign planning, working through the streetlight conversion, understanding PACE financing, or applying for grants.

Some municipal representatives also mentioned the need for additional outreach, promotional support, and community engagement to educate their elected officials and

raise awareness among community members about clean energy (7 of 28). Communities suggested community outreach and education to familiarize citizens and elected officials with CCAs (3 of 28). For example, one representative reported their town board is reluctant to listen to local advocates of CCA development (and other clean energy projects) because they perceive these advocates as trying to push a liberal, political agenda. This representative suggested NYSERDA or some other neutral, outside entity present CCAs, among other clean energy opportunities, to their town board to inform them of the benefits of renewable energy. Two other representatives reported they need resources or assistance to help them raise awareness about CCAs to local community members.

Three communities suggested additional public outreach is needed to educate citizens about installing solar, and more specifically, Solarize programs. In addition to outreach, these representatives reported residents need technical guidance to help them install solar or purchase EVs, as many are interested in such activities but do not have the knowledge to implement them.

C.3 Other Clean Energy Actions

Many communities reported completing clean energy actions other than the program’s 10 High Impact Actions (Table C-9). We summarize these actions below.

Table C-9. Other Clean Energy Actions Reported by Interviewed Municipalities (n = 17)*

Other Actions	Count
Energy efficiency upgrades in municipal facilities	7
Installation of solar PV systems on municipal properties	6
Community solar projects	4
Sustainability / climate change planning	4
Waste management programs, such as composting	4
Energy audits of municipal buildings	3
Urban forestry or natural resource conservation projects	3

* Twelve municipalities in the interview did not mention other clean energy activities

Most commonly reported additional clean energy actions were energy efficiency upgrades in municipal buildings. Interviewed municipal representatives described projects related to HVAC upgrades (5), such as installation of efficient Variable-Frequency-Drive (VFD) systems, interior or exterior lighting replacements (5), or other whole-building retrofits (2), such as renovating a municipal community center or making their wastewater treatment facility zero net energy.

Of the seventeen municipalities that reported additional clean energy actions, almost half (8) mentioned projects related to solar. Six interviewed representatives reported their municipalities have installed solar PV systems on their facilities, such as municipal buildings, wastewater treatment plants, or landfills. Four representatives mentioned developing community solar projects for community members. For example, one county reported they have the largest community solar project in the state of New York and are planning to develop other community solar projects in the future.

Several interviewed representatives noted they have integrated sustainable elements into their planning documents. Three municipalities updated their comprehensive plans to include sustainability-focused chapters. Two interviewed municipalities are planning for climate change: they created Climate Action Plans or are organizing efforts around climate change resiliency and adaptation.

Three representatives reported organized efforts related to waste management, including composting and organic waste programs and increased recycling efforts. Other clean energy actions mentioned included urban forestry projects for carbon offsets, and the development of home energy efficiency programs.

The clean energy actions community representatives reported completing before the CEC program began were largely limited to upgrades in their municipal buildings, likely performed as part of regular maintenance. Surveyed representatives described having audits performed on their municipal buildings, installing LED light bulbs, upgrades to water treatment plants, and involvement in solar projects.

After the CEC program, the clean energy actions reported by community representatives diversified in their reach and subject matter. Interviewees mentioned outreach to educate the public on energy efficiency and clean energy, a Green Business Challenge to lower greenhouse gas emissions, improvements to bike infrastructure, and recycling projects in addition to solar projects and upgrades to municipal buildings.

C.4 Local Clean Energy Working Groups

Half of surveyed communities reported they were aware of local clean energy working groups or taskforces, while half were unaware or unsure. These communities reported a variety of taskforces; about an even spread of within-government, across-government, and community-based working groups (Table C-10).

Table C-10. Presence of Clean Energy Task Forces or Working Groups

Any taskforces?	Number of communities	Percent
Yes	793	50%
<i>Within government</i>	166	10%
<i>In collaboration with other governments</i>	194	12%
<i>Community-based</i>	197	12%
<i>Other</i>	236	15%
No	782	49%
Don't know	25	1%
Total	1,600	100%

Among the 793 surveyed communities that indicated they were aware of working groups or taskforces seeking to advance clean energy locally, 346 (44%) indicated that at least one person from their municipality, such as an elected official or staff person, were members of such groups. These communities reported a variety of topics the working groups are focused on. The most common focus of the groups included: general energy efficiency, clean energy, sustainability, and climate coalitions (215), solar-related projects (55), working towards completing one of the 10 High Impact Actions, such as Climate Smart Communities Certification (55) or Community Choice Aggregation (27), water resources (49), and electric vehicles and charging stations (29).

The majority (20 of 29; 69%) of interviewed municipalities mentioned at least one local taskforce. Of these, most (13 of 20) reported having a committee or council within their government dedicated to energy or sustainability. Working groups within municipal governments were sustainability committees, environmental conversation councils, energy working groups, and committees created for the purpose of implementing CEC actions, such as becoming a certified Climate Smart Community or spearheading a CCA. These municipal committees tackled projects related to community climate action planning, becoming more energy efficient, CEC actions (e.g., Solarize, Benchmarking, USP, CSC certification), reducing the carbon footprint of municipal operations, alternative transportation, and renewable energy, among other sustainability-related initiatives.

Several municipalities reported local community-based groups that work towards clean energy and sustainability in their areas (8 of 20). These groups were typically local citizen activist groups that focus on climate initiatives, sustainable development, and community energy projects. For example, one interviewed representative described a climate action group within their community

made up of college and high school students. This group was the driving force behind their decision to take the CSC pledge and move towards certification. Another municipality described a local community group that collaborated with the town government to ultimately pass a law that banned hydrofracking in their community. These efforts eventually led to a push for more renewable energy, which was a factor in their successful Solarize campaigns.

Some municipalities also collaborated with taskforces in adjacent communities (6 of 20). For example, an interviewed county representative reported the county itself does not have a sustainability or energy committee, but it works with sustainability committees within the towns and villages located in the county. Another town representative noted they partner with a county-level Climate Smart Communities Taskforce to help them in their CSC efforts. An interviewed village representative reported creating a shared lighting district with a neighboring town; they established a committee between their own government and the town to work together on transitioning the streetlights to LEDs.

C.5 Program Elements

C.5.1 Use and Influence of the Grant

C.5.1.1 Use

Once municipalities complete and submit documentation for four High Impact Actions, they are eligible to receive grant money from NYSERDA to fund additional clean energy projects. Of the twenty-four municipal representatives who reported their plans for the NYSERDA CEC grant money, half reported they plan to use the money to fund energy efficiency upgrades in their municipal buildings (12 of 24). Of these, half reported lighting retrofits, such as upgrading their interior town hall lights to LEDs or switching out exterior parking garage lights (6 of 24). Other building upgrade projects mentioned were energy audits of municipal facilities, whole-building retrofits of community centers, HVAC upgrades, and plans to make a wastewater treatment plant zero-net-energy.

One-third of interviewed municipalities plan to or have already started converting their streetlights to LEDs, using the grant money they received for becoming CEC-designated (8 of 24). Some communities also plan to use the grant money to purchase EVs or charging stations (6 of 24). Four municipalities plan to procure at least one municipal EV, while three communities mentioned plans for installing charging stations.

C.5.1.2 Influence

The majority of interviewed representatives reported the opportunity for additional grant funding was influential in motivating their municipalities to complete four High Impact Actions (22 of 26).⁶ The four other communities noted that the funding eligibility was one of several factors helpful in encouraging their municipal board to move forward with their clean energy initiatives.

Five communities reported the grant and CEC program were very influential in their decisions to complete their clean energy projects. These representatives reported that it was unlikely that they would have completed their High Impact Actions without the opportunity for additional funding or the assistance from their CEC Coordinator, as one municipality described:

“Not very likely had we not heard from our CEC Coordinator. She came and gave us a presentation. We would not have done any of these things. Thanks to her. The grant was definitely a motivating factor.”

C.5.2 Clean Energy Communities Coordinator

Municipal representatives perceived their Clean Energy Communities Coordinator as a valuable element in helping their communities move forward with the CEC program.

Although about half (52%) of surveyed communities reported no interaction with their Coordinator, those that did (47%) reported their Coordinator had somewhat or greatly improved their understanding and awareness of the benefits of energy efficiency (Table C-11). All municipal representatives included in the interview had interacted with their Coordinator; most (93%; 27 of 29) reported their Coordinator was helpful in at least one way.

Table C-11. Coordinator Impact on Surveyed Municipalities’ Understanding of Energy Efficiency

Coordinator Impact	Number of communities*	Percent
Greatly improved your understanding	496	31%
Somewhat improved your understanding	250	16%
Not improved your understanding at all (with interaction)	4	0%
Not improved your understanding at all (without regular interaction)	23	2%
Never interacted with Coordinator/don’t know Coordinator	826	52%
Total	1600	100%

* Note: Multiple responses allowed.

⁶ Three municipalities did not provide answers to this set of questions.

Municipalities in both the survey (Table C-12) and interview (Table C-13) reported their CEC Coordinator was helpful in a variety of ways. The most frequently mentioned benefit among surveyed and interviewed communities was an increased awareness and understanding of the benefits of energy efficiency and renewable energy. About one-third (32%) of surveyed communities and two-fifths (38%) of interviewed municipal representatives reported their Coordinator was helpful in this capacity.

Table C-12. Ways in which Coordinator is most helpful (Surveyed municipalities; n = 746)

Coordinator Impact	Number of communities*	Percent
General awareness of benefits/general education	508	32%
Accessing technical services/engineers to complete projects	293	18%
Accessing financial incentives or financing to complete projects	269	17%
Keeping clean energy top of mind/a priority/making sure they don't forget	202	13%
Generating community support	161	10%

* Note: Multiple responses allowed.

Table C-13. Ways in which Coordinator is most helpful (Interviewed municipalities; n = 29)

Coordinator Impact	Number of communities*	Percent
General awareness of benefits/general education	11	38%
General guidance through the program processes	11	38%
Technical assistance or access to technical services for specific actions	8	28%
Assistance with applications, RFPs, or other paperwork	8	28%
Benchmarking help	7	24%
Keeping clean energy top of mind/making sure they don't forget (being proactive & motivational)	7	24%
Networking opportunities: connecting municipal staff with other entities/contacts	6	21%
Being readily available & accessible for questions via phone or email	6	21%
Accessing financial incentives or financing to complete projects	5	17%
Attending public meetings and generating community support (in-person)	5	17%

* Note: Multiple responses allowed.

Coordinators **increased energy efficiency awareness among municipal staff and elected officials** by giving presentations about the numerous ways in which communities could save energy through the CEC program's High Impact Actions. For example, an interviewed representative described the way in which their Coordinator was most helpful in this regard:

"It's [energy efficiency] something we never thought about before. They made us aware of energy that is being wasted, and how we can save money by insulating the garage. We also knew that our car was old, and we needed a new car that was not gasoline. That was a big plus right there."

Another representative reported the program and their Coordinator have accelerated the acceptance of clean energy initiatives among their elected officials:

"Ever since the start of this program and our work with our Coordinator, we have seen an increased trust across the whole municipal government in clean energy and energy efficiency and our steps in becoming more efficient."

Many interviewed representatives (38%) reported their **Coordinator helped guide them through the general steps** they needed to take for CEC designation, such as providing them with information and resources about the program and walking them through the actions. A representative described how their Coordinator helped them navigate the program processes:

"Our Coordinator has been fantastic. I will say that they [Coordinators] are a really important ingredient in NYSERDA's efforts. It has really helped us negotiate things, keep our ducks in order, and provide us with information and resources. Our Coordinator has attended many of our energy committee meetings. They are very perceptive in recognizing key issues and questions to ask. They're really a great ally to have."

Similarly, interviewed municipal representatives noted that their **Coordinators were proactive in motivating their municipal staff** to keep moving forward with their CEC actions. Coordinators would frequently reach out or facilitate next steps to ensure they were on track (7 of 29) in addition to being readily available for any questions via email or phone throughout the process (6 of 29). For example, one representative described their Coordinator as the "driving

force” moving them ahead with the program, noting how supportive they have been throughout the process:

“It really took a lot of the heavy lifting off of me. They were fantastic. It was a much better process because of them – they would reach out to me and ask what we’ve gotten done. They were never pushy about it but made sure we hadn’t forgotten about what needed to get done. They facilitated the next steps.”

Interviewed communities appreciated how **accessible their Coordinators were**, noting the quick response times to emails or phone calls when they had questions. One municipal representative reported:

“We have been able to ask him all sorts of questions. I’m very comfortable with shooting him an email and asking him questions that might pop into my head that relates to energy efficiency. I think that has been great.”

CEC Coordinators provided municipalities with other benefits as well. For example, about half (15 of 29) of interviewed municipal representatives reported their **Coordinator provided technical assistance or access to technical services** to help implement specific high impact actions, such as PACE Financing, Clean Fleets, or Climate Smart Communities certification. About one-fifth (18%) of communities in the survey reported this benefit as well (Table C-12).

Most notably, **Coordinators assisted communities with the Benchmarking action** (7 of 29). Coordinators presented the action in addition to sitting down with municipal staff and showing them how to use the online portal for entering the energy data. One representative noted that without the help from their Coordinator, helping them calculate and analyze historical energy data, they likely wouldn’t have completed the benchmarking action.

About one-quarter of interviewed communities reported their **Coordinators helped them fill out paperwork**, submit NYSERDA applications, draft Scope of Work documents for specific actions, and develop RFPs (8 of 29). A representative described their Coordinator’s guidance through the NYSERDA grant application:

“When we were applying for these high impact actions, they came out to the office and sat down with us, went through the process with us and what direction we’re going in. When we were doing the grant, they worked with us again on these things. I think the most helpful was their help with the

application process for the NYSERDA grant. They helped us identify our high impact actions, how they pertained, and which ones we could use.”

Interviewed municipal representatives also reported their **Coordinators were helpful in connecting them with other entities for networking** (such as nearby municipalities, contacts at NYSERDA, or other support organizations) (6 of 29), accessing financing or grants to complete actions (5 of 29), and generating community support by attending public meetings and participating in-person (5 of 29).

The proportion of community representatives (8 of 29) who reported that their Coordinator was not helpful in increasing awareness of energy efficiency explained that they or other municipal staff were already well-versed in energy efficiency, thus their Coordinator did not offer any new information or added knowledge in that regard. However, these representatives described their Coordinator as valuable in other ways, such as general guidance through the program. One representative reported:

“We were already pretty aware of the benefits of energy efficiency. What the Coordinator did was make us aware of the program...providing us with information on what we actually needed for each of our action items.”

Two interviewed municipalities reported negative experiences with their CEC Coordinator. One representative noted that their Coordinator was helpful in terms of connecting them with the right resources and people, but the Coordinator lacked the technical expertise needed to assist the municipality with the streetlights action.

The other representative who reported a negative experience explained that their Coordinator had initially presented the CEC program to them in a misleading way; they thought it was guaranteed their community would receive the \$50,000 grant if they completed four High-Impact Actions, which is not the case. This municipal representative also noted their Coordinator had given them unclear directions on how to do the Benchmarking action, in addition to incorrect instructions on how to fill out the applications. This confusion caused the community to have to resubmit their application three or four times. These resubmissions almost caused them to miss the \$50,000 grant, which was the reason they had started the program in the first place. The representative reported this miscommunication:

“When it was sold to us, we did not know about all of the steps that we needed to take to go through this. We were under the assumption that it was literally:

you get this done, you get the money. It was that quick and that easy. Realizing it was much like any other state agency funding - literally going to take months if not years to get the implementation done, that was the frustrating part of it. That was the barrier for us – the process.”

C.5.3 Opinion of Actions

The market evaluation team asked municipal representatives their opinions of the program’s 10 High Impact Actions, inquiring about the appropriateness of the actions for local governments and whether they were beneficial or limiting in some way. The majority (16 of 27) expressed positive perceptions of the actions, describing the list as practical, manageable, and easy-to-understand.⁷ Although most representatives reported the actions were beneficial to their municipality, some (11 of 27) expressed mixed opinions, noting some actions were more appropriate for some local governments than others.

Summarized below are the key **positive** elements of the High Impact Action list:

- The list provides a structured framework that municipalities use as a clean energy roadmap
- The actions help governments focus more on clean energy: the list educates municipalities on how they can reduce energy use
- Most actions are easy to follow, manageable, and practical
- Some actions are “low-hanging fruit”: cost-effective and easily achievable

Interviewed representatives reported the list of 10 High Impact Actions provided a structured checklist for their municipalities to follow. They described the list as “*an outline of what we can do,*” and “*a checklist to move forward*” with clean energy initiatives. Additionally, for municipal representatives who were unfamiliar with clean energy, they reported the list of actions propelled them to have discussions they previously had never had. One representative discussed how the list guided their clean energy efforts:

“Some communities don't even know what they can really do to be more conscious of energy usage. I think it lays out a framework for what can be done. And then the availability of the grant motivated a lot of communities to

⁷ Two municipal representatives did not provide answers to this set of interview questions.

make these changes and become a Clean Energy Communities and be eligible for the funding.”

Several municipal representatives appreciated the ease and cost-effectiveness of some of the High Impact actions. Representatives reported many of the actions, such as the energy code training or the USP adoption, were “easy to understand,” “bite-sized,” and “very practical.” A couple of representatives used the phrase “*low-hanging fruit*” to describe actions that had low up-front costs, which they appreciated as they were easily attainable. Several municipal representatives also reported they appreciated the mix of actions because it gave them options – some were low-cost and easy, while others were high-cost but reaped great rewards for the community. One representative appreciated that the list of actions was short in comparison to the CSC action list, which made the program easier to work with:

“When you think about it comparatively to the Climate Smart Communities Program, it was definitely more manageable to look at 10 actions as opposed to a bazillion. So, it was like, ‘okay, these are accomplishable things that we have either done already or we can look to do.’ And it definitely made it...I wouldn't say simple, but less daunting than looking at a long list. And I think the actions were pretty comprehensive. It was a pretty comprehensive list even though it was only 10.”

Further, over half of interviewed representatives reported they felt that the actions on the High Impact Action list were appropriate for local governments (15 of 27).

Interviewed municipal representatives also reported some concerns about specific High Impact Actions on the list or program requirements (11 of 27). Reasons for these concerns related to:

- Restrictions on size and type of municipality
- Solarize action
- LED streetlights action
- “Low-impact” actions

When asked whether the High Impact Actions were appropriate for local governments, multiple representatives reported it depends on the action item and the size of the municipality – some actions being appropriate for smaller municipalities while others are more appropriate for larger communities (9 of 27). For example, one representative noted that it would be time-consuming for a large municipality with many municipal buildings to start benchmarking their energy use.

Another municipality reported the Streetlights action would be cumbersome for a large community with many streetlights, as it would take significant time and resources to upgrade many lights. One representative perceived the Clean Fleets action – specifically the EV charging stations – as more suitable for larger municipalities than smaller communities.

Six municipal representatives reported negative opinions about the Solarize action. Representatives described a variety of reasons for their concerns. For example, one representative disliked how Solarize is a one-time event – stating it does not have a continuous, lasting effect like other actions:

“The actions are somewhat limiting. When you have a Solarize program, it came and it was gone. It’s not something we can double back on. It doesn’t exist anymore. It’d be nice to see some broader catch-all in these statewide campaigns. Something like benchmarking, you can keep doing.”

Another municipality reported an uptick in residential solar installations, but many of them were not through their Solarize campaign, thus they did not receive credit despite the solar growth lowering GHG emissions in their community. Other reasons for concern related to smaller communities not being able to achieve 10 residential installations and the perception that it was inappropriate for government to designate and support only one solar contractor.

Five interviewed municipal representatives also reported the LED streetlights action as a reason for their negative perceptions of the list. Representatives noted the action is difficult for governments to undertake because it requires technical and engineering expertise, it can be time-consuming, and it’s challenging for small communities with limited resources or large municipalities with many streetlights.

While some municipal representatives perceived the easier, cost-effective actions as positive additions to the High Impact Action list, a few representatives described these entry-level actions as “low-impact” (3 of 27). These “easier” actions were typically the adoption of the USP, the energy code training, and the benchmarking.

One representative disliked the inconsistency between actions, noting that some required a large amount of effort, while others were easy but low-impact:

“I would actually say some of the high-impact are too hard, but some are too easy. For instance, the clean energy code training wasn’t high-impact – it was

just too easy. And then the unified solar permit was just a waste of time... I don't think it had any impact either. Some of these actions are free, some of these actions require a lot of work and are expensive. You know that everybody did the same three actions plus one, pretty much. So, obviously that's not a well-designed program."

Representatives reported other negative perceptions of the High Impact Actions. For example, one representative – a municipality amid their streetlight conversion – reported the CEC program has good intentions, but the details and implementation of the actual actions are “weak” and require technical expertise. They described this:

“When you get into the detail, you begin to realize that you need expertise that does not exist locally. It is an accident that this community has me as a volunteer. A lot of these municipalities are just reliant on people that have no knowledge of the details that are associated with the action. The reliance would be on NYSERDA to provide, to offer up that expertise, and for them to being able to have advocates that would be able to drive this to fruition. That does not exist.”

NYSERDA provides step by step instructions on its website for each High Impact Action, but some of these instructions are very high-level. For example, for Solarize, it says Step 1 is to create a team and Step 2 is to select an installer. There are links to further resources.

C.5.4 Suggestions for Improvement

Interviewed municipal representatives offered ideas for improving the CEC program overall. These suggestions included other clean energy actions to add to the list of High Impact Actions, additional program resources needed to accelerate municipal clean energy strategies, and modifications to the program delivery.

C.5.4.1 Actions to Add

About half of interviewed municipalities provided ideas for expanding the High Impact Action list (15 of 29). These included:

- **Waste management.** Four interviewed representatives mentioned actions related to waste should count under the CEC program. These initiatives included composting and

food scrap projects, recycling programs, and landfill capping programs that capture methane emissions.

- **Community solar.** Three representatives reported that the CEC program should expand to include an action focused more on municipal solar farms for community solar.
- **Heat pump technologies.** The CEC program should place more emphasis on heat pump technology by encouraging bulk installments, whether geothermal, ground-source, or air-source (three representatives).
- **Other initiatives.** Two representatives would like to see the program encourage green infrastructure developments related to water, such as bioswales or rain gardens. Other actions mentioned by interviewed representatives included carbon offset projects (tree planting), microgrids, and sustainable public transit.

C.5.4.2 Improving Program Processes

The majority of municipalities provided at least one suggestion for modifying the CEC program overall (17 of 29). Summarized below were the most common recommendations.

- Changes to program delivery: CEC Coordinator expertise, communication with NYSERDA, program requirements
- Creating a tiered incentive structure similar to the Climate Smart Communities program
- Increased marketing of the CEC program

Six representatives suggested NYSERDA improve the way in which the program is delivered to municipalities. Two of these municipalities offered recommendations related to the CEC Coordinators' expertise; noting the need for Coordinators to be more knowledgeable and have the technical experience necessary to assist municipal staff with specific High Impact Actions.

Three of these communities suggested improvements in communication between municipalities and other NYSERDA representatives. Comments suggested NYSERDA be more personable in its communications; community representatives disliked the automated emails from NYSERDA about updates or notifications, stating communication from an individual like a representative would be more appreciated. In another instance, a representative reported NYSERDA should be more proactive in their communication throughout the CEC process, to ensure municipalities are on track for designation.

Two municipalities suggested modifications in program requirements and paperwork. For example, one representative recommended NYSERDA cut down on the paperwork needed for the grant application:

“The amount of paperwork and preparation for the \$50,000 grant is astonishing. I know NYSERDA has tried, but they need to significantly reduce the amount of paperwork and make it proportionate to the amount of dollars we get. We go through numerous meetings, filings, paperwork - it would have cost \$30-40,000 just for the paperwork if I was charging as a consultant. It’s ridiculous. It negates the value of getting involved in the program because we need people to do this for free.”

The other representative recommended less stringent timing requirements for clean energy actions completed earlier. They noted that early adopters who are progressive with energy initiatives – those that completed projects earlier than the program timeline requires – are not getting credit for being ahead of the curve in clean energy.

Four municipalities recommended NYSERDA modify their structure to a tiered structure, which would incentivize already-designated communities to continue pursuing High Impact Actions. They suggested that municipalities become eligible for additional grants and higher certification levels when they complete actions beyond the required four. One representative described this recommendation:

“If there’s any suggestion to NYSERDA about the CEC program – they should look into doing something like a tiered certification similar to CSC, so it keeps communities going after they get the four High Impact Actions, because there’s no incentive to keep going after you hit four.”

Four municipalities offered program recommendations related to outreach and marketing.

One representative mentioned NYSERDA should increase their marketing efforts informing municipalities and community members about available technical assistance. Another representative suggested a modification to the marketing frame of the CEC program, noting that

clean energy benefits should be promoted through a financial lens first, rather than environmental, to make it less polarizing, more attractive topic among municipal elected officials:

“When they are promoting things, they need to promote the dollar impact first, and the carbon impact second. Yes, we want to save the world, but from a municipal standpoint, if it doesn’t save money, it won’t happen.”

One municipal representative also desired more promotional materials from NYSERDA, such as seals or stickers they could display on their website, to advertise their CEC designation and clean energy efforts:

“I would like to be able to promote these activities. We want everyday citizens and installers to be interested. If there are resources available to promote and advertise this work – even if it’s just handouts or signs, that would be beneficial.”

Appendix D Instruments

D.1 Survey Instrument

D.1.1 Introduction

Hi. Thank you for taking the time to talk with me today. As I mentioned, I'm working with NYSERDA to learn about clean energy and energy efficiency actions that municipalities are taking. I will be asking about the program's High Impact Actions, the outcomes of those, and other actions you may have taken. If the activity is not applicable to your jurisdictional responsibilities, just let me know. I'll be taking notes as we talk, but I'd like to record this conversation to ensure the accuracy of my notes. Is that okay with you? We will not identify you or your municipality by name in what we report to NYSERDA.

Any questions for me before we get started?

D.1.2 EE Prioritization

Q1. **[ASK ALL]** First, I'd like to get a sense of your municipality's experience with clean energy and energy efficiency. Does your municipality have either an Energy Action Plan (EAP) or an energy chapter in your general plan?

1. Yes – Energy Action Plan
2. Yes – Energy chapter in general plan
3. No – No EAP, no chapter in their general plan
4. Not applicable – No general plan (and no EAP)
98. Don't know → Who should we talk to about this?

Q2. Does your municipality have a procurement policy that prioritizes the purchase of energy efficiency equipment or products? (If needed: This may include LED light bulbs or ENERGY STAR-rated equipment like a furnace)

1. Yes
2. No
3. Not applicable
98. Don't know → Who should we talk to about this?

Q3. Does your municipality have an energy manager or someone explicitly responsible for pursuing energy efficiency in your facilities and operations?

1. Yes
2. No
3. Not applicable
98. Don't know

Q4. I'd like you to tell me whether you agree or disagree with the following statement and then tell me why: Clean energy is a priority at my municipality. So first, do you agree or disagree? Why do you say that? (IF NEEDED: clean energy refers to policies or projects that save energy or use non-polluting sources like solar or wind.)

1. _____
98. Don't know

D.1.3 Clean Energy Upgrades

Q5. **[Skip to Q14 if Upgrade_9 = N/A or Submittal or Approval or Rejection]** Next, I have some questions about clean energy upgrades in your municipal buildings. Does someone at your municipality enter energy usage data for your municipal buildings into a portfolio manager or benchmarking system? (If needed: A common tool is the ENERGY STAR Portfolio Manager online tool.)

1. Yes
2. No → Skip to Q7
98. Don't know → Who should we talk to about this? → Skip to Q7

Q6. **[IF Q5 = YES]** To the best of your knowledge, does your municipality enter data for all municipal buildings 1,000 square feet or larger into the Portfolio Manager system?

1. Yes
2. No
3. Not applicable, no municipal buildings larger than 1000 sf. → Skip to Q14
98. Don't know → Who should we talk to about this?

Clean Energy Communities Market Evaluation

- Q7. Have you completed energy-saving upgrades or renewable energy projects at any of your municipal buildings? (If needed: this might include changing out lighting for LEDs, or installing a high-efficiency furnace, occupancy sensors, or programmable thermostats).
1. Yes
 2. No → Skip to Q12
 98. Don't know → Who should we talk to about this? → Skip to Q12
- Q8. [IF Q7 = YES] Were any of those upgrades or renewable energy projects completed after January 1, 2014?
1. Yes
 2. No → Skip to Q12
 98. Don't know → Who should we talk to about this? → Skip to Q12
- Q9. [IF Q8 = YES] Let's focus on those upgrades completed after January 1, 2014. Have you noticed a reduction in your buildings' energy use since the completion of those upgrades/renewable energy projects?
1. Yes
 2. No → Skip to Q12
 98. Don't know → Who should we talk to about this? → Skip to Q12
- Q10. [IF Q9 = YES] Was that reduction in energy use 10% or more of total municipal building consumption as compared to the baseline?
1. Yes
 2. No → Skip to Q12
 98. Don't know → Who should we talk to about this? → Skip to Q12
- Q11. [IF Q10 = YES] Was the baseline a history of at least 12 months of building energy usage data?
1. Yes → Skip to Q14
 2. No → Skip to Q14
 98. Don't know → Who should we talk to about this? → Skip to Q14
- Q12. [IF ANY Q7 through Q11 = NO or DON'T KNOW] I'd like to know your thoughts about how difficult it would be for your community to reduce energy use in municipal

buildings by 10% through retrofits, energy upgrades, or renewable energy projects.
Please use a scale of one to ten, with one being not at all difficult and ten being very difficult. (If needed: Please answer to the best of your ability, given what you know now).

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 98. Don't know → Who should we talk to about this?

Q13. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.4 LED Streetlights

Q14. [Skip to Q18 if LED_3 = N/A or Submittal or Approval or Rejection] Now, how about your streetlights. About how many cobra head streetlights does your municipality own or lease? [PROGRAMMER: RESTRICT ENTRY TO A NUMBER] (*If following up on number, select don't know and say you'll want to know the number that are LED too, and if <50%, the difficulty*). *Either get email and email all follow-up questions, or schedule a later call.*)

- 1. Number: _____
- 2. None → Skip to Q18
- 98. Don't know → Who should we talk to about this? → Skip to Q16

Q15. [IF Q14 > 0] How many of your cobra-head streetlights are LED lights?
[PROGRAMMER: RESTRICT ENTRY TO A NUMBER]

- 1. Number: _____
- 98. Don't know → Who should we talk to about this?

Q16. [IF Q15 = 0 or if Q15 < 50% of Q14] How difficult do you think it'd be for your community to replace at least 50% of all cobra-head style streetlights with LED lights? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 98. Don't know → Who should we talk to about this?

Q17. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.5 Clean Fleets

Q18. [Skip to Q21 if Fleet_8 = N/A or Submittal or Approval or Rejection] Next, I want to ask about your municipality's vehicle fleet. Does your municipality have at least one active alternative fuel vehicle in its fleet of vehicles? (If needed: Qualifying alternative fuel vehicles include plug-in electric vehicles, battery-electric vehicles, compressed natural gas (CNG) vehicles, and hydrogen fuel cell vehicles. Vehicles may be light-duty, medium duty, or heavy-duty vehicles and must be able to travel on a highway – not golf cart type vehicles.)

- 1. Yes → Skip to Q20
- 2. No
- 3. Not applicable (does not have vehicles in its fleets) → Skip to Q20
- 98. Don't know → Who should we talk to about this? → Skip to Q20

Q19. [IF Q18 =NO] How difficult do you think it'd be for your municipality to add an alternative fuel vehicle to your fleet? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10

98. Don't know → Who should we talk to about this?

Q20. Has your municipality provided at least one electric vehicle charging station or compressed natural gas fueling station that is currently active? (If needed: Electric vehicle charging stations must consist of either two (2) or more Level 2 charging ports or one (1) or more DC fast charge ports.)

1. Yes → Skip to Q23

2. No

98. Don't know → Who should we talk to about this? → Skip to Q23

Q21. [IF Q20 = NO] How difficult do you think it'd be for your municipality to install an EV charging station? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7

- 8. 8
- 9. 9
- 10. 10
- 98. Don't know → Who should we talk to about this?

Q22. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.6 Solarize

Q23. [Skip to Q32 if Solarize_2 = N/A or Submittal or Approval or Rejection] Has your municipality participated in previous rounds of the NYSERDA Community Solar program to do a Solarize campaign? (If needed: This is a localized campaign that brings together groups of potential solar customers and a designated installer to do solar installations at below market rate).

- 1. Yes
- 2. No → Skip to Q26
- 3. Not applicable → Skip to Q32
- 98. Don't know → Who should we talk to about this? → Skip to Q32

Q24. [IF Q23 =YES] Was that campaign launched after January 1, 2014?

- 1. Yes
- 2. No → Skip to Q26
- 98. Don't know → Who should we talk to about this?

Q25. [IF Q24=YES] Did you have at least 10 solar installations resulting from that campaign?

- 1. Yes → Skip to Q32
- 2. No → Skip to Q30
- 98. Don't know → Who should we talk to about this? → Skip to Q32

Q26. [IF Q23 = NO OR Q24 = NO] Have you or someone at your municipality been in contact with your program Coordinator to start a Community Solar/Solarize Campaign?

- 1. Yes
- 2. No → Skip to Q29
- 98. Don't know → Who should we talk to about this? → Skip to Q32

Q27. [IF Q26 = YES] Have you completed the Solarize Campaign Scoping Document? (If needed: the scoping document lists the campaign's goals and objectives, roles and responsibilities of project partners, deliverables, and milestones.)

1. Yes
2. No → Skip to Q29
98. Don't know → Who should we talk to about this? → Skip to Q29

Q28. [IF Q27 = YES] Have you had at least 10 solar installations resulting from your Solarize campaign?

1. Yes → Skip to Q32
2. No → Skip to Q30
98. Don't know → Who should we talk to about this? → Skip to Q30

Q29. [IF Q26 OR Q27 = NO or DON'T KNOW] How difficult do you think it will be for your municipality to undertake a Solarize campaign? (If needed: Please answer to the best of your ability, given what you know now. This is a localized campaign that brings together groups of potential solar customers and a designated installer to do solar installations at below market rate).)

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
98. Don't know

Q30. [IF Q25 OR Q28 = NO OR DON'T KNOW] How difficult do you think it will be for your community to get 10 solar installations resulting from your Solarize campaign?

Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 98. Don't know

Q31. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.7 Unified Solar Permit

Q32. **[Skip to Q34 if USP_1 = N/A or Submittal or Approval or Rejection]** Have you adopted the Unified Solar Permit? (If needed: The Unified Solar Permit is a standardized permit application designed to streamline the approval process for installing solar in the community.)

- 1. Yes
- 2. No → Skip to Q33
- 98. Don't know → Who should we talk to about this? → Skip to Q35

Q33. [If Q32 = NO or DON'T KNOW] How difficult do you think it would be for your community to adopt the Unified Solar Permitting process? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5

- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 98. Don't know → Who should we talk to about this?

Q34. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.8 Energy Code Enforcement

Q35. **[Skip to Q38 if Code_4= N/A or Submittal or Approval or Rejection]** Did your Code Enforcement Officer participate in NYSERDA's energy code enforcement training specifically designed for the Clean Energy Communities program? [If size = LARGE:] This involves your local code enforcement officer and two government officials attending the NYSERDA Clean Energy Communities training, reviewing a set of building plans together, a joint onsite inspection, and close out meeting.

- 1. Yes → Skip to Q38
- 2. No
- 3. Not applicable → Skip to Q38
- 98. Don't know → Who should we talk to about this? → Skip to Q38

Q36. [If Q35 = No] How difficult do you think it would be for your code compliance officers to participate in NYSERDA's energy code enforcement training? (If needed: Please answer to the best of your ability, given what you know now.)

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10

98. Don't know → Who should we talk to about this?

Q37. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.9 Climate Smart Communities

Q38. **[Skip to Q42 if CSC_7= N/A or Submittal or Approval or Rejection]** Has your community been listed as a Registered or Certified Climate Smart Community on the New York State Department of Environmental Conservation (NYSDEC) website?

1. Yes, registered [If needed: registered refers to communities that have adopted the Climate Smart Communities pledge by passing a resolution.]
2. Yes, certified [If needed: certified refers to communities that earn points for a broad range of actions] → Skip to Q42
3. No
4. Not applicable → Skip to Q42

98. Don't know → Who should we talk to about this? → Skip to Q42

Q39. [IF Q38 = 1 or 3] How familiar are you with the Climate Smart Communities program, including its actions and point system? Would you say you're very familiar, somewhat familiar, or not at all familiar?

1. Very familiar
2. Somewhat familiar
3. Not at all familiar

Q40. [IF Q38 = 1 or 3] How difficult do you think it would be for your municipality to become a Certified Climate Smart Community? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7

- 8. 8
- 9. 9
- 10. 10
- 98. Don't know → Who should we talk to about this?

Q41. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.10 Community Choice Aggregation

Q42. **[Skip to Q48 if CCA_6 = N/A or Submittal or Approval or Rejection]** We have a few more topics to discuss. Next up is community choice aggregation. Has your community either adopted or is in the process of adopting legislation authorizing its participation in an opt-out community choice aggregation program? (*Note to interviewer: If respondent says no, ask if they have considered it. If needed: Community Choice Aggregation is an energy procurement model that replaces the utility as the default supplier of electricity within your jurisdiction. Communities pool demand and negotiate lower rates with private energy suppliers.*)

- 1. Yes – already adopted legislation authorizing our community’s participation
- 2. Yes – in the process of adopting → Skip to Q45
- 3. No, but we have considered it or are considering it → Skip to Q46
- 4. No → Skip to Q46
- 5. Not applicable → Skip to Q48
- 98. Don't know → Who should we talk to about this? → Skip to Q48

Q43. [IF Q42 = 1. Yes – already adopted] Have you contracted with an energy service company (ESCO) to provide the energy?

- 1. Yes
- 2. No
- 98. Don't know → Who should we talk to about this? → Skip to Q48

Q44. [IF Q42 = 1. Yes – already adopted] Is the default option 100% renewable energy?

- 1. Yes → Skip to Q48
- 2. No → Skip to Q46
- 98. Don't know → Who should we talk to about this? → Skip to Q48

Q45. [IF Q42 = 2. YES – in the process of adopting] Describe for me where you are in the process of adopting a CCA.

1. _____

98. Don't know → Who should we talk to about this?

Q46. [IF Q42 = 2 (in process) or = 3 (NO)] How difficult do you think it would be for your municipality to pass legislation authorizing Community Choice Aggregation with a default option of 100% renewable energy? Please use the one to ten scale with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

1. 1

2. 2

3. 3

4. 4

5. 5

6. 6

7. 7

8. 8

9. 9

10. 10

98. Don't know → Who should we talk to about this?

Q47. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.11 Benchmarking

Q48. [Skip to Q56 if Bench_10 = N/A or Submittal or Approval or Rejection] Now, I have some questions about benchmarking energy usage in your municipality's buildings. Have you adopted or are you in the process of adopting legislation that would require benchmarking and reporting of municipal buildings 1,000 square feet or larger? (If needed: benchmarking legislation would require the public disclosure of municipal buildings' energy use.; Legislation refers to a resolution, ordinance, or local law)

1. Yes – already adopted

2. Yes – in the process of adopting → Skip to Q50

3. No → Skip to Q51

- 4. Not applicable → Skip to Q56
 - 98. Don't know → Who should we talk to about this? → Skip to Q56
- Q49. [IF Q48 = 1.YES – already adopted] And, does that legislation require you to make the benchmarking information publicly available on the internet?
- 1. Yes → Skip to Q52
 - 2. No → Skip to Q51
 - 98. Don't know → Who should we talk to about this? → Skip to Q56
- Q50. [IF Q48 = 2. YES – in the process of adopting] Can you please describe for me where you are in the process?
- 1. _____
 - 98. Don't know → Who should we talk to about this?
- Q51. [IF Q48 =2 (Yes – in process) or = 3 (No)] I'd like to know your thoughts about how difficult adopting such legislation would be. Using a scale of one to ten, with one being not at all difficult and ten being very difficult, how difficult would it be for your municipality to adopt legislation requiring the benchmarking of municipal buildings greater than 1000 square feet with public disclosure? Please use the 1 to 10 scale. (If needed: Please answer to the best of your ability, given what you know now.)
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4
 - 5. 5
 - 6. 6
 - 7. 7
 - 8. 8
 - 9. 9
 - 10. 10
 - 11. Not applicable
 - 98. Don't know → Who should we talk to about this?

Q52. **[IF SIZE = LARGE, else skip to Q56]** Have you adopted or are you in the process of adopting legislation that requires owners of commercial and multifamily buildings of 25,000 square feet or more to report their buildings' energy use through the ENERGY STAR Portfolio Manager system?

1. Yes – already adopted
2. Yes – in the process of adopting → Skip to Q54
3. No → Skip to Q54
4. Not applicable → Skip to Q56
98. Don't know → Who should we talk to about this? → Skip to Q56

Q53. **[IF Q52 = YES]** And, does that legislation require you to make the benchmarking information publicly available on the internet?

1. Yes → Skip to Q56
2. No → Skip to Q56
98. Don't know → Who should we talk to about this? → Skip to Q56

Q54. **[IF Q52 = 2. Yes – in process OR Q52 = 3. NO]** How difficult do you think it would be to pass legislation that all commercial and multifamily buildings greater than 25,000 square feet benchmark and report energy usage publicly? Again, please use the 1 to 10 scale. (If needed: Please answer to the best of your ability, given what you know now.)

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. Not applicable
98. Don't know Who should we talk to about this?

Q55. **[SHOW ON SAME PAGE AS RATING QUESTION]** Optional comments:

D.1.12 Energy New York Finance

Q56. **[Skip to Q62 if PACE_5 = N/A or Submittal or Approval or Rejection]** We have one final action to ask about, PACE financing for clean efficiency upgrades. Has your community adopted or is in the process of adopting legislation authorizing the establishment of PACE financing, also referred to as Energize NY Finance? (If needed: PACE is Property Assessed Clean Energy financing that allows property owners to pay back the cost of clean energy upgrades through a special charge on their property tax bill).

1. Yes – already adopted
2. Yes – in the process of adopting → Skip to Q59
3. No → Skip to Q60
4. Not applicable → Skip to Q62
5. Don't know → Who should we talk to about this? → Skip to Q62

Q57. **[IF Q56 = 1. YES – already adopted]** Have you secured an agreement with the Energy Improvement Corporation to implement the PACE financing?

1. Yes
2. No → Skip to Q60
98. Don't know → Who should we talk to about this? → Skip to Q62

Q58. **[IF Q57 = YES]** Has your municipality been confirmed as a member of the Energy Improvement Corporation?

1. Yes → Skip to Q62
2. No → Skip to Q62
98. Don't know → Who should we talk to about this? → Skip to Q62

Q59. **[IF Q56 = 2. YES – in the process of adopting]** Can you describe for me where you are in the process of adopting PACE financing legislation?

1. _____
98. Don't know → Who should we talk to about this?

Q60. **[IF Q56 = 2. YES – in process OR Q56 = NO]** How difficult do you think it would be for your community to adopt legislation authorizing the use of PACE financing and secure an agreement with the Energy Improvement Corporation? Please use the one to ten scale

with ten being most difficult. (If needed: Please answer to the best of your ability, given what you know now.)

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
98. Don't know → Who should we talk to about this?

Q61. [SHOW ON SAME PAGE AS RATING QUESTION] Optional comments:

D.1.13 Likelihood and Impact Questions

Q62. Of the High Impact Actions we've been discussing today that you have not yet completed [INSERT LIST OF INCOMPLETE ACTIONS], how likely are you to implement *any* of them? Please use a scale of one to ten, with one being not at all likely and ten being extremely likely. (If needed: Any of them, even if it's just one of them. Please answer to the best of your ability, given what you know now).

[SINGLE RESPONSE]

1. 1 – Not at all likely
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 – Extremely likely

98. Don't know → Who should we talk to about this?

Q63. [ASK ALL] What sorts of barriers make it challenging to implement any of these actions? Probes: Budget, staffing, other priorities, community interest):

1. [OPEN-ENDED RESPONSE]

Q64. [If ALL actions = inactive, consideration, no interest, N/A of the High Impact Actions you *have* completed, what outcomes or effects have you noticed since completing them? (If needed: These effects can be positive or negative, or can be energy savings or non-energy benefits.

1. [OPEN-ENDED RESPONSE]

Q65. [ASK if Q35=1 or if Code_4= **Submittal or Approval or Rejection**] I'd like to ask about the code compliance training specifically. Was it just your code compliance officer who attended, or did others from your municipality attend?

[SINGLE RESPONSE]

1. Only code compliance officers

2. Others too

98. Don't know → Who can we speak to about this?

[DISPLAY THE NEXT TWO QUESTIONS ON THE SAME PAGE]

Q66. [ASK IF Q65 = 1] What sort of outcomes or impacts have you noticed since the **code compliance officer** completed the training? (If needed: Better enforcement of energy codes, better understanding of energy codes, builders adhering to energy codes more).

1. [OPEN-ENDED RESPONSE]

98. Don't know – Who should we talk to about this?

Q67. [ASK IF Q65 = 2] What sort of outcomes or impacts have you noticed since those others (i.e., **people other than code compliance officer**) completed the training? (If needed: Better understanding of energy codes, awareness of code compliance the officer's job/role and the importance of it).

1. [OPEN-ENDED RESPONSE]

98. Don't know – Who should we talk to about this?

[DISPLAY THE NEXT TWO QUESTIONS ON THE SAME PAGE]

We're almost done. The next two questions ask about clean energy actions your municipality has taken, *other* than the 10 High Impact Actions in the Clean Energy Communities program.

Q68. [ASK ALL] Are there any clean energy actions your municipality took **BEFORE getting involved with the Clean Energy Communities program** to promote clean energy and energy efficiency? This is your chance to highlight any energy actions your municipality has done, even if they're small. (If needed: The Clean Energy Communities program began in August 2016.)

Tell me what actions, (If needed: The Clean Energy Communities program began in August 2016.

1. [OPEN-ENDED RESPONSE]

Q69. [ASK ALL] Tell me what actions your municipality has taken **AFTER getting involved with the program** to promote clean energy and energy efficiency *other* than the ten High Impact Actions.

1. [OPEN-ENDED RESPONSE]

Q70. [ASK ALL] Are you aware of any working groups or taskforces seeking to advance clean energy locally? They could be community-based, within your municipality, or in collaboration with other municipalities.

[MULTIPLE RESPONSE]

1. Yes – within our government
2. Yes – in collaboration with other governments
3. Yes – community-based
4. Yes – other
5. No
98. Don't know

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Q71. [IF Q70 = 1 or 2 or 3 or 4] Please tell me a little bit about who is in that group and what they work on. *(Be sure to capture whether municipality is participating or not; do staff members/elected officials go and participate?)*

1. [OPEN-ENDED RESPONSE]

Q72. Finally, my last two questions are about your interactions with your Clean Energy Communities Coordinator [IF CEC Coordinator is not Tara or Terry pipe in: **CEC Coordinator: Full Name**]. Thinking about whether your awareness and understanding of the benefits of energy efficiency and renewable energy has changed since working with your Coordinator, would you say your Coordinator has:

[READ 1 to 3. If they answer not at all, then ask whether they interact with the Coordinator. Then select 3 or 4 as appropriate.]

1. Greatly improved your understanding
2. Somewhat improved your understanding
3. Not improved your understanding at all (with interaction)
4. Not improved your understanding at all (without regular interaction)
5. Never interacted with Coordinator/don't know Coordinator (with no interaction)

Q73. [IF Q72 = 1 OR 2] In what ways has your Coordinator been most helpful?

[MULTIPLE RESPONSE – DO NOT READ; PROBE TO CODE]

1. Accessing technical services/engineers to complete projects
2. Accessing financial incentives or financing to complete projects
3. General awareness of benefits/general education
4. Keeping clean energy top of mind/a priority/making sure they don't forget
5. Generating community support (e.g., attending public meetings, encouraging elected officials to take action, etc.)
96. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know

D.1.14 Closing [ASK ALL]

Those are all the questions I have for you.

Q74. Is there anything else you think is important for me to know about your municipality's clean energy or energy efficiency work?

1. Yes
2. No
98. Don't know
99. Refused

Thank you very much for your time.

D.2 Municipality Representative Interview Guide

D.2.1 Introduction

Thanks for taking with me today. As I mentioned, my firm is working with NYSERDA to understand more about the energy efficiency and clean energy work that local governments are engaged in. To do this, we are interviewing municipality representatives like you, so we can learn more about those activities. We will be talking about clean energy activities you have done, the benefits and other outcomes you have noticed from those, the costs incurred as you implemented them, and barriers in the way of completing more actions.

If you do not know the answers to something I am asking about, if possible, I would appreciate it if you could refer me to a colleague who would know.

Our talk will take about [45-60] minutes, depending on your experiences.

I will be taking notes as we talk, but I would like to record this conversation to help with my note-taking. Is that okay? [If needed: We will use the recording internally at Research Into Action; we will not provide it to NYSERDA.]

Do you have any questions before we get started?

D.2.2 Clean Energy as a Priority

Q1. Let's start broadly. What are the key reasons your municipality is interested in clean energy? Anything else? (If needed: financial benefits, environmental benefits, recognition, eligibility for grant money)

- Q2. Compared to other priorities at your community, would you say that clean energy is a high, medium, or low priority? Why do you say that? [If needed: Would you say that it is among the top priorities?]

D.2.3 High-Impact Actions Completed

I see that you have completed [X number] of the program's High Impact Actions. Let's go through those one by one; I have a set of questions for each. [Proceed to ask the following questions for each completed action].

D.2.3.1 Unified Solar Permit

Let's talk about your community's adoption of the Unified Solar Permit. As you likely recall, the Unified Solar Permit – or USP – is a standardized permit application that streamlines the approval process for installing solar in the community.

- Q3. Were you involved in any of the USP adoption activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q4. What sort of did you receive after publicizing the new streamlined permit process?
- Q5. Have you noticed any decrease in the amount of time between permit application and approval since adopting the Unified Solar Permit? [encourage respondents to quantify time reduction]
- Q6. Have you noticed an increase in permit applications since adopting the Unified Solar Permit? (by residents or businesses)
- Q7. [If yes] Are you able to estimate by what percentage applications have gone up?
- Q8. Have you seen greater interest from solar installers since you have adopted the Unified Solar Permit?
- Q9. Have you noticed any other benefits or changes from adopting the Unified Solar Permit? If so, what are they?

Now I'd like to know the costs incurred from adopting the Unified Solar Permit.

- Q10. With whom did you contract, if anyone, to assist you in adopting a Unified Solar Permit?
I am thinking of people such as contractors, consultants, attorneys and so on.
- Q11. [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms?
- Q12. About how much internal staff resources did you devote to completing this activity?
(Probe for number of staff, approximate FTE, and length of time)
- Q13. Were there any other costs you incurred from adopting the Unified Solar Permit? [If yes:]
what were those costs? (Type, amount)

D.2.3.2 Solarize

[Now/First] I would like to ask you about your community's Solarize campaign. As you know, this campaign brings together groups of potential solar customers and a designated installer to do below-market-rate solar installations.

- Q14. Were you involved in any of the solarize campaign activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q15. Have you attended the PV trainers Network Workshop?
1. [If yes] What were the most useful things you learned from the PV Trainers Network Workshop?
 2. [If no: *Proceed to next question*]
- Q16. What did you take away from the process of developing the scoping document? [Looking especially for benefits, impacts]
- Q17. What sort of did you receive to your public outreach?
- Q18. What groups did you work with for this campaign? ... Anyone else?

- Q19. Do you have ongoing working relationships with any of these groups?
1. Have any other new relationships been created as a result of this campaign? Explain.
- Q20. What sort of discount was your solar installer able to offer you? (If needed: NYSERDA was expecting this to be around 10-20% discount)
- Q21. How many customers ultimately installed a PV system through this campaign?
- Q22. To what extent do you think the solarize campaign activity and resulting PV systems increase the visibility of solar PV in your community?
1. [If any increase and if not mentioned] Are you anticipating any ongoing activity or outcomes from this increased visibility?
- Q23. [Town of Amherst only:] I understand from NYSERDA that your town eliminated their Building Permit fee for all solarize projects. What benefits have you noticed from doing this?
- Q24. Have you noticed any other effects or outcomes that the Solarize campaign seems to have motivated? If so, what are they?

Now I would like to know the costs incurred from implementing the Solarize action.

- Q25. With whom did you contract, if anyone, to assist you in conducting the solarize campaign. I am thinking of people such as contractors, consultants, attorneys and so on?
- Q26. [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms (including contractor labor and equipment)?
1. Do you have ongoing working relationships with these individuals since completing the solarize campaign?
- Q27. What additional equipment costs did your municipality incur, if any?
- Q28. About how much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)
- Q29. Were there any other costs incurred as you completed the Solarize action? (including permits) [If yes:] What were those costs? (Type, amount)

D.2.3.3 LED Street Lights

[Now/First] I would like to ask you about your community's conversion of cobra-head streetlights to LED street lights.

Q30. Were you involved in any of the streetlight conversion activities?

1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
2. [If yes: *Proceed to next question*]

Q31. What sort of feedback have you gotten from residents since the conversion? (If needed: aesthetics and "look" of lighting, reduced sky-glow/uplight)

Q32. [If not mentioned] Any feedback from police or comments related to public safety?

Q33. Have you noticed any other impacts since your community converted to LED streetlights? If so, what are they?

Now I would like to know the costs incurred from implementing the LED Street Lights action.

Q34. With whom did you contract, if anyone, to assist you in installing LED street lights? I am thinking of people such as contractors, consultants, NYPA, attorneys and so on.

Q35. [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms (including contractor labor and equipment)?

Q36. Did your municipality have to "buy back" the streetlights from the utility?

1. [If yes] How much did that cost?

Q37. What additional equipment costs did your municipality incur, if any?

Q38. About how much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)

Q39. Were there any other costs you incurred by installing the LED street lights? [If yes:] What were those costs? (Type, amount)

D.2.3.4 Energy Code Enforcement Training

[Now/First] I would like to ask you about your community's Energy Code Enforcement Training for the Clean Energy Communities Program, which focuses on what code enforcement officials need to know about the Energy Code.

[If size = Large] It involves enrolling in the training module, a preliminary meeting with the NYSERDA training provider, and followed by collaborative plans review and joint onsite inspection of two building projects.

- Q40. Were you involved in any of these code enforcement training activities designed specifically for the Clean Energy Communities program?
1. [If no] These questions are best targeted at those who participated in the training. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q41. Who all attended the energy code enforcement training; was it just the code enforcement officer or did others from your municipality attend?
- Q42. [If size = large] Are those the same people who completed the training module, attended the collaborative plans review, and joint onsite inspection of two building projects – or were other people involved in these activities? [If others] Who attended those? (clarify for each activity)
- Q43. What sort of outcomes or impacts have you noticed since the **code compliance officer** completed the training? (If needed: Better enforcement of energy codes, better understanding of energy codes, builders adhering to energy codes more.)
- Q44. What sort of outcomes or impacts have you noticed since those others (i.e., **people other than code compliance officer**) completed the training? (If needed: Better understanding of energy codes, awareness of code compliance the officer's job/role and the importance of it).
- Q45. What evidence have you seen that suggests enforcement of energy codes has improved since completion of this training?
- Q46. Have you noticed any other impacts from the Energy Code Enforcement Training? If so, what are they?

Now I would like to know the costs incurred from implementing Energy Code Enforcement...

Q47. About how much internal staff resources did you have to devote to completing this activity? (Probe for approximate FTE and length of time.)

D.2.3.5 Energize NY Finance (also known as Property Assessed Clean Energy (PACE) Financing)

[Now/First] I would like to ask you about Energize NY Finance, or PACE Financing. As you know, PACE financing allows property owners to pay back the cost of clean energy upgrades through a special charge on their property tax bill. (If needed: PACE stands for Property Assessed Clean Energy)

Q48. Were you involved in any of the Energize NY Finance activities?

1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
2. [If yes: *Proceed to next question*]

Q49. In terms of adopting PACE financing, would you say the city council or other key decision-makers have greater awareness of energy efficiency and clean energy as a result of the legislative process that involved them? Why do you say that?

Q50. What sort of did you receive from your public outreach?

Q51. Do you have information on how many buildings received energize NY financing for clean energy upgrades? (If yes) Can you summarize that for us? Or follow-up with that information?

1. (If no) Who could we contact to learn more about this?

Q52. Do you have information on what types of upgrades were done using the Energize NY Finance program? (If yes) Can you summarize that for us? Or follow-up with that information?

1. (If no) Who could we contact to learn more about this?

Q53. Have you noticed any other impacts as a result of adopting PACE Financing? If so, what are they?

Now I would like to know the costs incurred from implementing Energize NY Finance...

- Q54. With whom did you contract, if anyone, to assist you in implementing Energize NY Finance? I am thinking of people such as contractors, consultants, attorneys and so on.
- Q55. [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms? [if needed: for example, to help with developing legislation].
- Q56. How much internal staff resources did you have to devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)
- Q57. Were there any other costs you incurred by adopting PACE financing? [If yes:] What were those costs? (Type, amount)

D.2.3.6 Community Choice Aggregation

[Now/First] I would like to ask you about the Community Choice Aggregation (CCA) action. Community Choice Aggregation is an energy procurement model that replaces the utility as the default supplier of electricity within your jurisdiction. Communities pool demand and negotiate lower rates with private energy suppliers.

- Q58. Were you involved in any of the CCA activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q59. What kind of renewable sources generate energy for your CCA? (if needed: wind, solar, geothermal)
- Q60. Before the CCA, what proportion of your municipality's energy supply came from renewables?
- Q61. How does the cost per kWh from your CCA compare with that of the utility?
- Q62. What sort of did you receive from your public outreach? (Probe for positive/negative and segments: residential, commercial, industrial, multifamily)

- Q63. Did you have any residents opt-out?
1. [If any] Why do you think that is?
 2. [If any] Can you give me a rough estimate of the proportion?
- Q64. What types of services, if any, does the CCA provide that the utility does not? (If needed: installation of DER or other clean energy services)
- Q65. What kinds of relationships have you developed with the groups you worked with to establish the CCA?
1. *[Clarify whether administrator is them or someone else]*
 2. *[Clarify whether CCA is alone or with other municipalities]*
 3. What ESCO are you working with?
 4. Have these relationships continued to present day?
- Q66. To what extent do you think the CCA has raised the profile of renewable energy in your community?
1. [If raised some and if not mentioned] What sort of impacts do you expect that to have?
- Q67. Have you noticed any other impacts as a result of implementing Community Choice Aggregation?

Now I would like to know the costs incurred from implementing Community Choice Aggregation...

- Q68. With whom did you contract, if anyone, to assist you in implementing Community Choice Aggregation? I am thinking of people such as contractors, consultants, attorneys and so on. (If needed: These are groups you paid money to as part of CCA establishment, not just collaborated with)
1. [If not mentioned] Who completed the CCA plan?
 2. [If not mentioned] Who interacted with the ESCO to make the contract?
- Q69. [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms (including contractor labor and equipment)?

- Q70. How much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)
- Q71. Were there any other costs you incurred by implementing Community Choice Aggregation? [If yes:] What were those costs? (type, amount)

D.2.3.7 Clean Fleets

[Now/First] I would like to ask you about Clean Fleets. Clean Fleets is an effort by local governments to invest in alternative fuel vehicles and infrastructure. Municipalities can complete this action by installing EV charging stations or by deploying alternative fuel vehicles.

- Q72. Were you involved in any of the clean fleets activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q73. Did your municipality add an alternative fuel vehicle to your fleet, install one or more EV charging stations, or both?

[IF ADD ALTERNATIVE FUEL VEHICLE TO FLEET, ELSE SKIP TO Q83]:

- Q74. How many alternative fuel vehicles have you added to your municipal fleet? (If needed: Qualifying alternative fuel vehicles include plug-in electric vehicles, battery-electric vehicles, Compressed Natural Gas vehicles, and hydrogen fuel cell vehicles. Vehicles may be light-duty, medium duty, or heavy-duty vehicles and must be able to travel on a highway – not golf cart type vehicles.)
- Q75. From where did you obtain/purchase vehicle? [Probes on manufacturer or dealership discount, utility rebate]
- Q76. Have you seen any evidence to suggest reduced maintenance costs or greater reliability of your fleet?
- Q77. In your opinion, has this led to greater visibility of alternative-fuel vehicles in your community?
1. What sort of impacts do you expect that to lead to?

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Q78. Do you bring this vehicle to community events? (If yes) What sort of has that generated?

[IF INSTALLED AN EV CHARGING STATION, ELSE SKIP TO Q87]:

Q79. Did you receive any incentives for installing the charging station? (If yes) Please tell me more about that, such as who provided it, what amount, and what was it used for.)

Q80. Have you seen any evidence to suggest that people who live outside your municipality are charging their EVs at your facilities?

Q81. (If yes) Do you have any anecdotal evidence they are spending money in your town while it is charging?

Q82. Have you noticed any other impacts on your community? If yes, what are they?

Now I would like to know the costs incurred from implementing the Clean Fleets action...

Q83. [If added vehicle] About how much did you purchase the vehicle for?

Q84. [If added vehicle] Did you receive any incentives or dealer discounts on the vehicle? (If received incentives: Probe for source – NYSERDA, utility, dealership)

Q85. With whom did you contract, if anyone, to assist you in implementing the Clean Fleets action? I am thinking of people such as contractors, consultants, attorneys and so on?

Q86. [If any contracted:] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms (including contractor labor and equipment)?

Q87. What additional equipment costs did your municipality incur, if any?

Q88. How much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)

Q89. Did you incur any other costs by adding to your “clean fleet”/an EV charging station? [If yes:] What were those costs? (Type, amount)

D.2.3.8 Clean Energy Upgrades

Now I would like to ask you about the Clean Energy Upgrades Action. You had to demonstrate a 10% reduction in energy costs in local government buildings and facilities through energy efficiency upgrades and renewable energy projects.

Q90. Were you involved in any of the clean energy upgrade activities?

1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
2. [If yes: *Proceed to next question*]

Q91. What kind of upgrades did you do to your municipal buildings? (If needed: this might include lighting, HVAC, or building envelope upgrades)

Q92. Have you estimated the reduction in energy use or greenhouse gases you realized from these upgrades? (If yes) What reductions do you think you have achieved?

Q93. What feedback have you gotten from building occupants or visitors after the upgrades? (if needed: increased comfort, aesthetics, safety)

Q94. Have you seen any savings in maintenance costs?

Q95. Have you noticed any other impacts since completing Clean Energy Upgrades?

Now I would like to know the costs incurred from implementing Clean Energy Upgrades...

Q96. How did you pay for your upgrades? (Probes: general fund dollars, utility incentives, financing)

1. [If renewable energy project like Solar PV] Did you use a Power Purchase Agreement?

Q97. With whom did you contract, if anyone, to assist you in implementing clean energy upgrades? I am thinking of people such as contractors, consultants, attorneys and so on.

Q98. Did you work with any of the following?

1. Energy Services from the New York Power Authority
2. The Dormitory Authority of the State of New York (DASNY) Construction Services
3. Used an Energy Performance Contract (If yes) With who?

- Q99. [If any contracted:] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms? (including contractor labor and equipment?) (Probe for each)
- Q100. What additional equipment costs did your municipality incur, if any?
- Q101. About how much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)
- Q102. Did you incur any other costs by implementing Clean Energy Upgrades? [If yes] What were those costs? (Type, amount)

D.2.3.9 Benchmarking

Now I would like to ask you about Benchmarking. Benchmarking is a policy that requires the annual reporting of energy used in local government buildings [and, in large municipalities, also requires the annual disclosure of energy used in large private buildings].

- Q103. Were you involved in any of the benchmarking activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q104. As a result of benchmarking, has your municipality been better able to identify opportunities for energy-saving upgrades? Why do you say that?
- Q105. Has that led to any specific projects that are planned or have been completed? If yes, what are those?
- Q106. Have you gotten any feedback from community members or municipal staff since making that information public online? If yes, what was that feedback?
- Q107. Would you say the city council has greater awareness of energy efficiency and clean energy thanks to the legislative process that involved them?
- Q108. Have you noticed any other impacts since you started benchmarking your buildings? If so, what are they?

Now I would like to know the costs incurred from Benchmarking...

- Q109. With whom did you contract, if anyone, to assist you in adopting legislation to require benchmarking or tracking building energy use? I am thinking of people such as contractors, consultants, attorneys and so on.
- Q110. [If any contracted:] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms (including contractor labor and equipment)?
- Q111. About how much internal staff resources did you devote to completing this activity? (If needed: I'm thinking about the effort involved in collecting this information and entering it into the ENERGY STAR Portfolio Manager.) (Probe for number of staff, approximate FTE, and length of time)
- Q112. Did you incur any other costs by benchmarking your buildings? [If yes:] What were those costs? (Type, amount)

D.2.3.10 Climate Smart Communities Certification

Now I would like to ask you about your Climate Smart Communities Certification. This program provides local governments with a framework to guide their climate action and enables high-performing communities to achieve recognition for their leadership.

- Q113. Were you involved in any of the Climate Smart Communities certification activities?
1. [If no] These questions are best targeted to someone who is. Can you let me know who that is and how to contact them?
 2. [If yes: *Proceed to next question*]
- Q114. What actions did you complete to earn the Climate Smart Communities certification?
- Q115. What sorts of benefits have you noticed since you have become a Climate Smart Community? These could be local or regional. (If needed: Any outcomes from getting recognition? Energy or non-energy benefits? Heightened profile of clean energy?)
- Q116. Have you developed ongoing working relationships with any of the groups you worked with as part of earning Climate Smart Communities certification?

Q117. Have you noticed any other impacts since earning Climate Smart Communities Certification? (If yes) What are they?

Now I would like to know the costs incurred from implementing the Climate Smart Communities Certification...

Q118. With whom did you contract, if anyone, to assist you in attaining Climate Smart Communities certification? I am thinking of people such as contractors, consultants, attorneys and so on.

Q119. [If any contracted:] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms? (including contractor labor and equipment)

Q120. [For relevant actions:] What additional equipment costs did your municipality incur, if any?

Q121. How much internal staff resources did you have to devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)

Q122. Did you incur any other costs through earning the Climate Smart Communities Certification? [If yes:] What were those costs? (Type, amount)

D.2.3.11 Additional Actions

Now I'd like to ask about additional actions your municipality might have taken other than the program's high impact actions. These might include actions like a recycling campaign, a complete streets project, composting, a community garden, road diets, etc.

Q123. Other than what we have been discussing so far, are there other steps has your municipality taken to reduce energy use or use cleaner sources of energy?

1. Step 1:
2. Step 2:
3. Step 3:

Q124. Where did you get the idea for that action(s)?

1. Step 1:
2. Step 2:

3. Step 3:

Q125. Did you complete that step before or after joining the Clean Energy Communities program? (If needed: The CEC program started in August 2016).

1. Step 1: Before or after CEC Program

2. Step 2: Before or after CEC Program

3. Step 3: Before or after CEC Program

Q126. What has been the impact of completing that step, or what outcomes have you noticed?

1. Step 1:

2. Step 2:

3. Step 3:

Q127. [If not mentioned above] Are you aware of any working groups or taskforces seeking to advance clean energy locally? They could be community-based, within your municipal government, or in collaboration with other municipalities.

1. [If yes] Tell me a little bit about who is in that group and what they work on?

2. [If yes] Are members of your municipality involved in that group?

3. [If yes] Did that group form or become more active as a result of the CEC Program?

4. [If no] Are there any plans to establish a working group or task force to advance clean energy in your community?

Now I would like to know the costs incurred from implementing [step]. *[Repeat as necessary for each reported action]*

Q128. With whom did you contract, if anyone, to assist you in this action? I am thinking of people such as contractors, consultants, attorneys and so on.

1. Step 1:

2. Step 2:

3. Step 3:

Q129. [If any contracted:] [If any contracted] All together, about how much would you estimate your municipality spent on contracts with these individuals or firms? (including contractor labor and equipment)

1. Step 1:
2. Step 2:
3. Step 3:

Q130. [If applicable] What were your municipality's own additional equipment costs, if any?

1. Step 1:
2. Step 2:
3. Step 3:

Q131. How much internal staff resources did you devote to completing this activity? (Probe for number of staff, approximate FTE, and length of time)

1. Step 1:
2. Step 2:
3. Step 3:

Q132. Did you incur any additional costs by completing this action? [If yes:] What were those costs? (Type, amount)

1. Step 1:
2. Step 2:
3. Step 3:

D.2.4 Barriers to Implementing High-Impact Actions

I would like to move on to talk about barriers in the way of completing the rest of the program's actions.

Q133. Let me list the rest of the program's High Impact Actions that are available to you and then let me know what barriers there are to completing them.

[List remaining actions]

1. What are the main barriers preventing you from completing these? (If needed: city council support, budget constraints, staff time/labor to complete the action?)

2. Anything else?
3. Are some of these barriers more relevant for some actions, or are the barriers equally a challenge for all of them? Please explain.
4. (If needed) In what way do these factors prevent you from implementing the actions?

Q134. Of the barriers you just described, which are the most difficult to overcome?

1. Why are they particularly difficult?
2. [If appropriate] Are there any other barriers to implementing the actions that we haven't discussed?

Q135. What would help your municipality overcome [barrier]? (If needed: support from community leaders, prioritizing the action over other community issues) [*Repeat for each barrier*]

Q136. How feasible would it be to provide this support? (If needed: Is it at all possible to do this?)

D.2.5 CEC Program Elements

We are almost done. I have some questions left about the program.

Q137. Once you complete four High Impact Actions, you become a designated Clean Energy Community. Based on what you know, what happens after that point?

1. [If mention additional funding/grants] To what extent does/did qualifying for additional funding motivate you to complete the High Impact Actions? Why?
2. [If received grant] How likely would you have been to do these actions if they didn't increase the likelihood that you would get the funding/grant?

Q138. What is your opinion of the program's 10 High Impact Actions; for example, perhaps you find that the list of ten actions helps your municipality to focus its attention, or perhaps you find the list of ten limiting in some way, or perhaps you have some other thoughts you'd like to share?

1. Do you think the actions are appropriate for local governments?
2. Are there other actions you wish would count for the program?

D.2.6 CEC Coordinator

These last two questions are about interactions with your Coordinator for the Clean Energy Communities Program, [name].

- Q139. About how many people at your municipality does the Coordinator work with or contact regularly?
- Q140. To what extent has working with your Coordinator increased your awareness and understanding of the benefits of energy efficiency and renewable energy? [If needed: In what ways?]
- Q141. In what ways has your Coordinator been most helpful? Anything else? [Probes: technical services/engineers, financial incentives or financing, general awareness, keeping clean energy a priority]
- Q142. What other outreach/technical services could NYSERDA offer that would be helpful to your municipality (these don't need to be in alignment to the CEC program)?

D.2.7 Closing

- Q143. Are there other resources that NYSERDA could offer that may accelerate your clean energy strategies or initiatives?
- Q144. Those are all the questions I have prepared. Is there anything else you think is important for me to know about [municipality]'s energy efficiency and clean energy work?

Okay. Thank you again for speaking with me.