

City of Cambridge Net Zero Action Plan

FY25 Report



Decarbonizing Cambridge

Overview of the Net Zero Action Plan

The Net Zero Action Plan (NZAP) was adopted by the City Council in 2015 following an 18-month stakeholder process to identify a phased set of actions to reduce greenhouse gas emissions from new and existing buildings and develop a renewable energy supply strategy for Cambridge buildings.

As part of the 2015 NZAP, the Task Force proposed that the whole suite of actions be reviewed every five years. Driven by the principles laid out in the Net Zero Action Plan and with extensive stakeholder input, both the full set of actions and the timeline of the original plan were revisited in the 2021 review. In addition, the process of reviewing and identifying adjustments to the plan considered the implications of actions with respect to equity and social justice; meaning the actions are to be implemented in a way that ensures resources are accessible to all residents and businesses and do not place undue burdens on vulnerable populations. In accordance with the governance plan, the study's purpose was to review the overall strategy to ensure that the framework continues to evolve in the desired manner.

This report highlights the activity made during Fiscal Year 2025, which ran from July 1, 2024 through June 30, 2025.

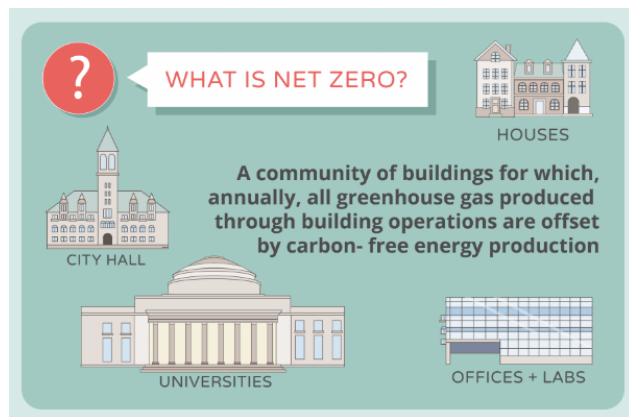
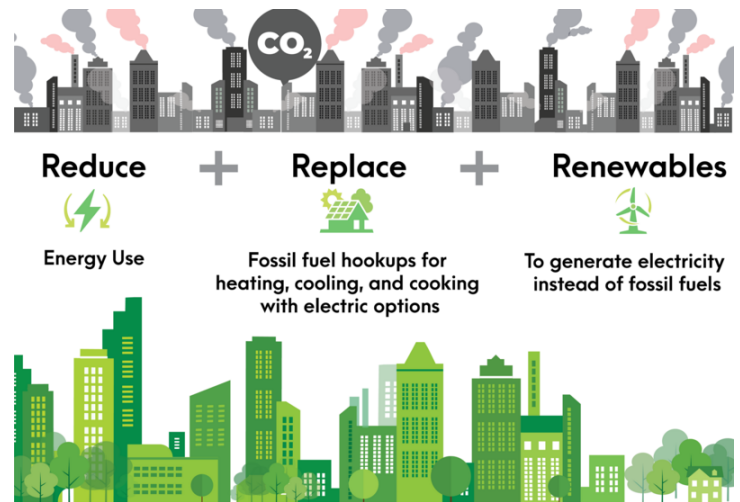


Net Zero Action Plan

Reduce, Replace, Renewables

There are several key ways to reduce emissions from buildings, as the graphic here illustrates. We must use less energy by investing in energy efficiency (Reduce), use cleaner energy by replacing fossil fuel-based with fully-electric systems (Replace), and ensure that all our electricity is generated with renewable, zero emissions sources like solar and wind (Renewables).

Cambridge's Net Zero Action Plan uses these three strategies to reduce emissions. Action Areas 1 and 2 focus on Reducing and Replacing, while Action Area 3 focuses on Renewables. Action Area 4 is crosscutting and supports all actions by securing funding and capacity for implementation.



Net Zero Action Plan

Defining Net Zero

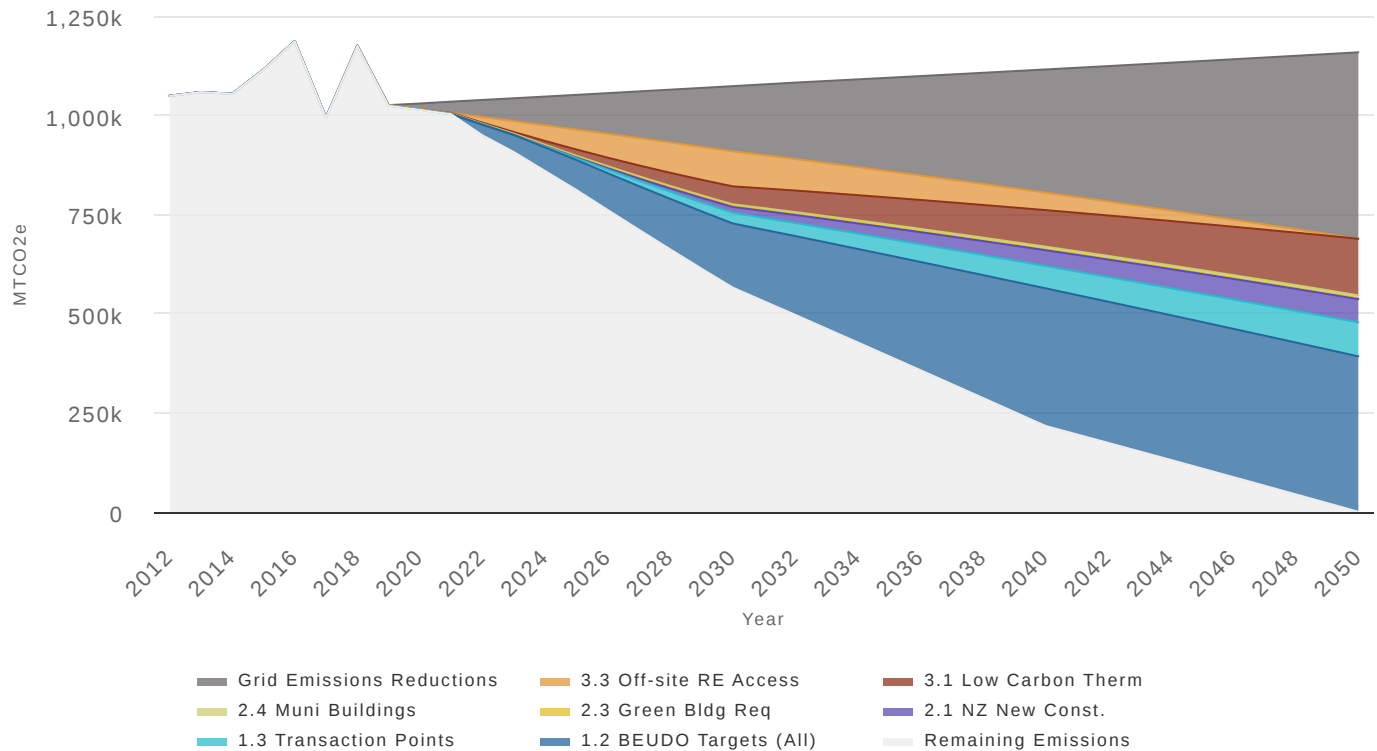
Residents, universities, businesses and the City collaborate to reduce energy use in buildings and increase access to renewable energy. Cambridge has set a "net zero" target for all buildings in the community and has created the "Net Zero Action Plan" to outline strategies to help each building reach net zero emissions. You can see how we define net zero in the graphic to the left.

Net Zero Action Plan

Cambridge Emissions Reduction Strategies

Each of the actions in the NZAP has the potential to reduce the City's GHG emissions over time. Hover over the different colorful wedges on the graph below to understand the estimated emissions reductions associated with each action! Note that, like all models, this graph is meant to portray rough estimates versus precise predictions. This chart is based on the actions laid out in the 2021 Net Zero Action Plan update.

Together, the implementation of all NZAP measures has the potential to reduce emissions by approximately 12 million MTCO₂e.



Net Zero Action Plan

Fiscal Year 2025 Status Report

This report highlights the progress made on the goals and activities of the Net Zero Action Plan over the past fiscal year in the City of Cambridge. The NZAP was first introduced and adopted in 2015, it was then updated in 2020. Beginning in 2025, the plan will be reevaluated to inform the next comprehensive update.

This report outlines the progress and next steps of the NZAP actions from July 2024 through June 2025.





Net Zero Action Plan Implementation Status Indicators

To track the progress of each Action in the NZAP, Cambridge has assigned a graphic that will appear in the "Implementation Status" component of the Action. The implementation status means how far along we are in implementing each action relative to the timeline that was created for that action. The timelines were formally adopted in January 2023 with the updated 5-Year Plan.

The green light (top left) indicates that the action is on track with the timeline adopted in 2023.

The yellow light (top right) indicates that the action is delayed in its timeline from 2023 but is making progress.

The red light (bottom left) indicates the action is stalled and is not currently making progress.

The parking sign (bottom right) indicates that the action has been paused.

Net Zero Action Plan Equity and Resilience Badges

This report covers the activity that happened in Fiscal Year 2025 which ran from July 1, 2024, through June 30, 2025. Every 5-years the city will evaluate and review the Net Zero Action Plan. As part of the most recent review, which was adopted in January 2023, City staff assessed NZAP actions to ensure the plan's benefits and burdens were equally distributed.

Key themes in the NZAP are equity and resiliency, energy resilience, and the renewable thermal energy transition. Each of these themes was carefully considered when thinking through possible adjustments. Continuously reflecting upon these issues allowed us to create actions that work to enhance a fair and just clean energy transition, improve resiliency in the community, and have resources in place to implement this plan.

These badges seen in each Action Area overview indicate that the actions covered bring resilience and equity opportunities to Cambridge.



Resilience



Equity

Net Zero Action Plan

FY25 Action Summary Table

This table shows the current status of each action and whether or not each action has been flagged for cross-cutting resilience and equity impacts.

Action	Status	Flags
1.1 Custom Retrofit Program		 
1.2 Building Energy Use Disclosure Ordinance (BEUDO) Performance Requirements		
1.3 Transaction Points		
2.1 Net Zero Requirements for New Construction		 
2.2 Address Embodied Carbon through Reporting Requirements		
2.3 Net Zero Requirements for Municipal Buildings		
3.1 Carbon Free Energy Supply		 
3.2 On-Site Renewable Energy Access		 
3.3 Off-Site Renewable Energy Access		
4.1 Financing and Capacity Building		 

Overview

Action Area 1: Energy Efficiency (Existing Buildings)

As we work to transition to a low-carbon energy supply we also need to be more efficient with how energy is used in existing buildings. Demand for electricity is expected to continue growing as equipment in buildings is switched from fossil fuel-based systems to those that powered by electricity.

Achieving our Net Zero Action Plan goals requires the installation of energy efficient equipment and ensuring that buildings across the city are well insulated and weatherized. Three actions within Action Area 1: Energy Efficiency work toward increasing the efficiency of our buildings through a variety of mandatory and voluntary programs and policies. These actions were assigned SMART goals which were adopted as part of the NZAP 5-year update.

This section covers activity that happened in FY25 which ran from July 1, 2024 through June 30, 2025.

Action 1.1 Custom Retrofit Program Ensure small/medium residential & small commercial buildings operate optimally and maximize energy efficiency through voluntary retrofit advising services and transition off fossil fuels.	Action 1.2 BEUDO Emissions Reductions Requirements Establish performance standards for large existing buildings over 25,000 square feet and residential buildings of 50+ units. Represents over 50% of the square footage and 70% of GHG emissions from buildings.	Action 1.3 Upgrades at Transaction Points Leverage transaction points to achieve energy improvements & decarbonization in a financially feasible way by tapping into financing streams that are only available at time of sale, lease, renovation, or permit application. <i>Grey to indicate not yet started</i>
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Activities for Action 1.3 have not been started. Therefore, Action 1.3 is not covered in this report.

Action Area 1: Energy Efficiency (Existing Buildings)

[illegible]

SMART Goals: Action 1.1

- 750 Units engaged in program per year
- 10 buildings retrofitted through financing pilot
- Develop retrofit tracking approach to set conversion targets by end of 2023

Implementation Status



On Track

On Track



Equity



Resilience

Custom Retrofit Program for Residential and Small Commercial Action 1.1 Implementation Status

The activities for this action are currently on track.

In January 2023, with the adoption of the 5-year NZAP update SMART goals were assigned to Action 1.1.

FY25, saw the continuation of the Electrify Cambridge program. Electrify Cambridge provides free technical advice to residential buildings, large and small, throughout Cambridge that are interested in either partial or whole building electrification.

First launched in FY24, the BlocPower financing pilot program closed in FY25 during the fall of 2024 due to changes in operations for the company. Buildings that had been involved in the BlocPower pilot program were passed along to Electrify Cambridge so that if program participants wished to continue exploring electrification options for their building they could still get support.

Custom Retrofit Program for Residential and Small Commercial

Action 1.1 Progress, Current Retrofit Program

To measure progress for this action we count the number of households in buildings that engaged with the [Electrify Cambridge program](#). For example, if a single triple-decker building with three residential units had a consultation with a technical advisor we could that as three households having received support.

Electrify Cambridge provides no-cost technical assistance for residential buildings for specific projects, such as installing a heat pump, and plan for the long-term electrification of all building systems. Participants are offered enhanced guidance and close coordination for navigating the Mass Save program. Electrify Cambridge over the course of FY25 had consultations that covered 396 households. Before the BlocPower Pilot officially closed in January 2025, it had developed 94 Instant Building Reports and offered 16 lease quotes to buildings.

Electrify Cambridge saw high engagement shortly after the program launched, especially with medium to large multifamily buildings. However, participation has since waned signaling that more focused outreach will be needed over the coming years. In FY25, program promotional letters were mailed throughout January and February 2025. A webinar was held for specifically for multifamily buildings in the early spring of 2025. Since then, engagement with multifamily buildings slowed due to longer timelines and complexities of electrification planning for large buildings. Additional outreach and engagement events are planned for early FY26.

Lower Electrify Cambridge participation cannot be directly correlated to any single reason. There are market factors, development issues, increasing costs, and limited financing options that make upgrading a buildings existing systems difficult. Additionally, since large buildings have more complex systems that require more time to plan for retrofitting and there are often many decision-makers involved, it can be difficult to understand the impact of the program in real time. As the assistance provided today may not be actionable for several years.

Electrify Cambridge Participation by Fiscal Year



Data represents the total number of units that have been covered in consultations with [Electrify Cambridge](#)

Non-Cumulative Units counted on Left Axis, Cumulative Units counted on Right Axis.

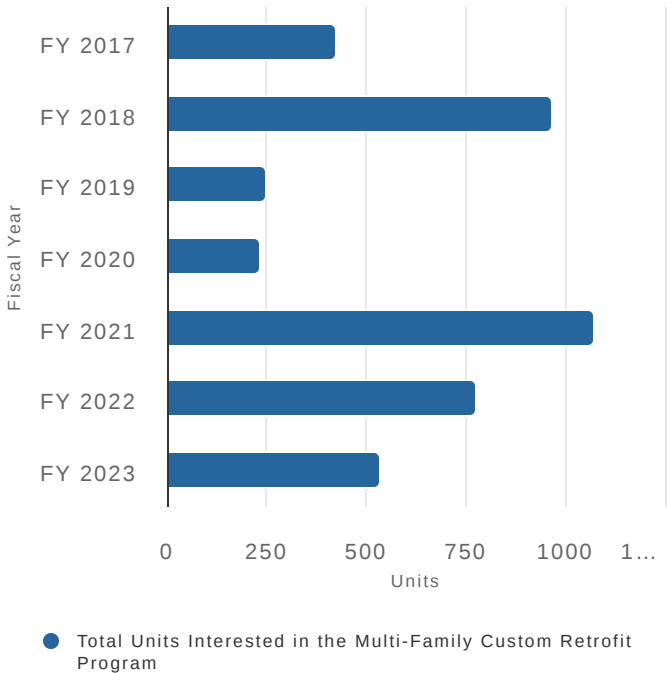
Custom Retrofit Program for Residential and Small Commercial

Action Area 1.1 Past Progress, Program Participation

Prior to the current suite of building electrification support programs the city had other programs that residents could use to decarbonize and electrify their homes. The Multifamily Retrofit Advisor Program ran from 2017 through 2023 and provided buildings with 5 to 49 units with free technical assistance. For small residential, the Cambridge Clean Heat Program offered assistance with heat pumps by comparing quotes and coordinating installations.

FY21 saw the highest level of engagement due to increased outreach that was made possible through a grant by the Massachusetts Department of Energy Resources.

Multifamily Retrofit Advisor Participation



Data shows units covered through engagements with the Multifamily Retrofit Advisor Program (2017 - 2023)

Custom Retrofit Program for Residential and Small Commercial

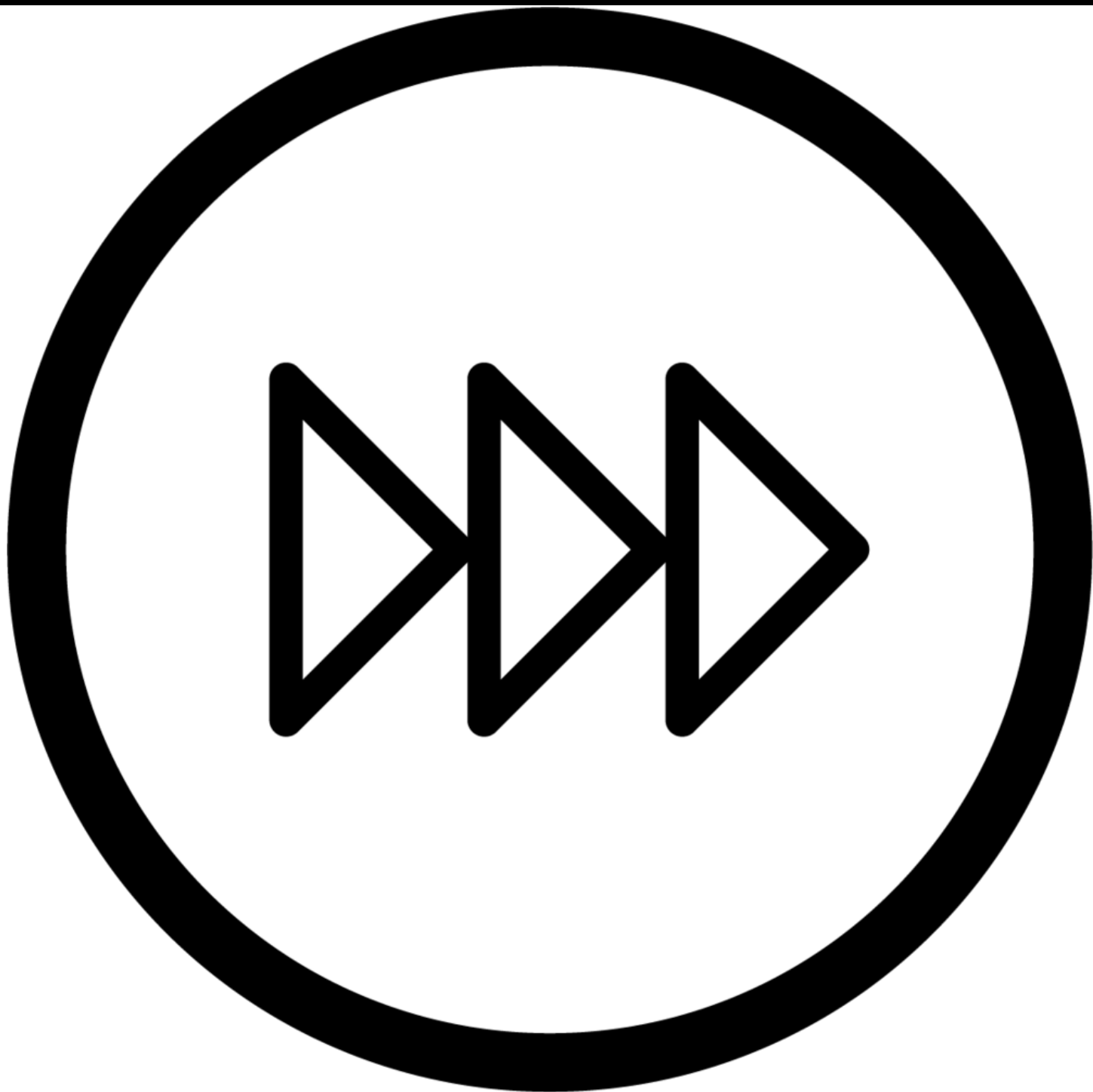
Action 1.1 Next Steps, Challenges, and Opportunities

Next Steps: Electrify Cambridge will continue to provide retrofit support services as currently designed. The program will be further enhanced in FY26 with additional retrofit support offerings. There are several outreach and engagement events planned for FY26 and re-engagement efforts will be made with buildings that participated in the program to date.

Challenges: It can take months or even years for residents to go from project consultation to the completion of an electrification project, so we are working to re-engage participants to help keep their projects on track. In addition, individual project costs for many electrification measures remain expensive, even with incentives. The BlocPower after program for multifamily buildings is helping address the challenge of upfront costs by providing \$0/down financing. Additionally, it can be challenging to coordinate an all-electric replacement when a failing piece of equipment needs immediate replacement, but our goal for the long-term decarbonization plans provided by Electrify Cambridge is that they help people plan for electrification in advance of such situations.

Local grid capacity has also been a challenge and barrier for some buildings to electrify. The installation of a transformer on-site substantially increases project cost and there are no current MassSave incentives to cover these costs. Installing a transformer on-site can also present challenges with available space.

Opportunities: The Electrify Cambridge program will expand outreach efforts to drive more engagement to the program. Opportunities for expanding program offerings to include assistance around resilience measures, such as cool roofs, are being explored.



SMART Goals: Action 1.2

- BEUDO buildings achieve required annual emissions reductions
- Resource Hub fully established by end of 2023 and usage is monitored

Implementation Status



On Track

On Track



Equity

Building Energy Use Disclosure Ordinance

Action 1.2. Implementation Status

The activities for this action are currently On Track. However, the development of a Resource Hub has been delayed pending coordination with a statewide resource hub.

This action covers activity related to the [Building Energy Use and Disclosure Ordinance \(BEUDO\)](#). BEUDO covers large buildings in Cambridge, whose emissions represent approximately 50% of all citywide greenhouse gas emissions. Reporting is required annually, and over the past several years reporting compliance has improved significantly with over 90% of required properties successfully reporting. The data collected through reporting is used to set baseline targets from which each nonresidential property will measure required emission reductions. BEUDO regulations are currently in the process of being developed and then finalized. These regulations are complex and, therefore, are being rolled out in stages. The final regulations once promulgated will contain the determination of emissions factors, criteria for purchasing renewable energy, definitions for campuses, alternative compliance payments, and the process for requesting deferrals for annual reporting and emission reductions.

The release of a public-facing portal was originally scheduled for FY24, but it has since been delayed. The City jointly applied for a federal Department of Energy grant with the City of Boston, the Massachusetts Clean Energy Center, and the Massachusetts Department of Energy Resources, however despite being awarded the funding has yet to be released as of the publishing of this report.

Building Energy Use Disclosure Ordinance

Action 1.2 Progress

The BEUDO Ordinance requires energy and water reporting for existing commercial properties larger than 25,000 square feet and residential buildings of 50 or more units. Progress towards this action is currently measured by the percentage of properties that successfully meet the reporting requirements each year. Calculating the compliance rate for the most recent year can take many months to finalize as properties can request extensions to submit their data. The most recent year with a completed compliance rate calculated is 2023, which saw 94% of properties meet the requirements.

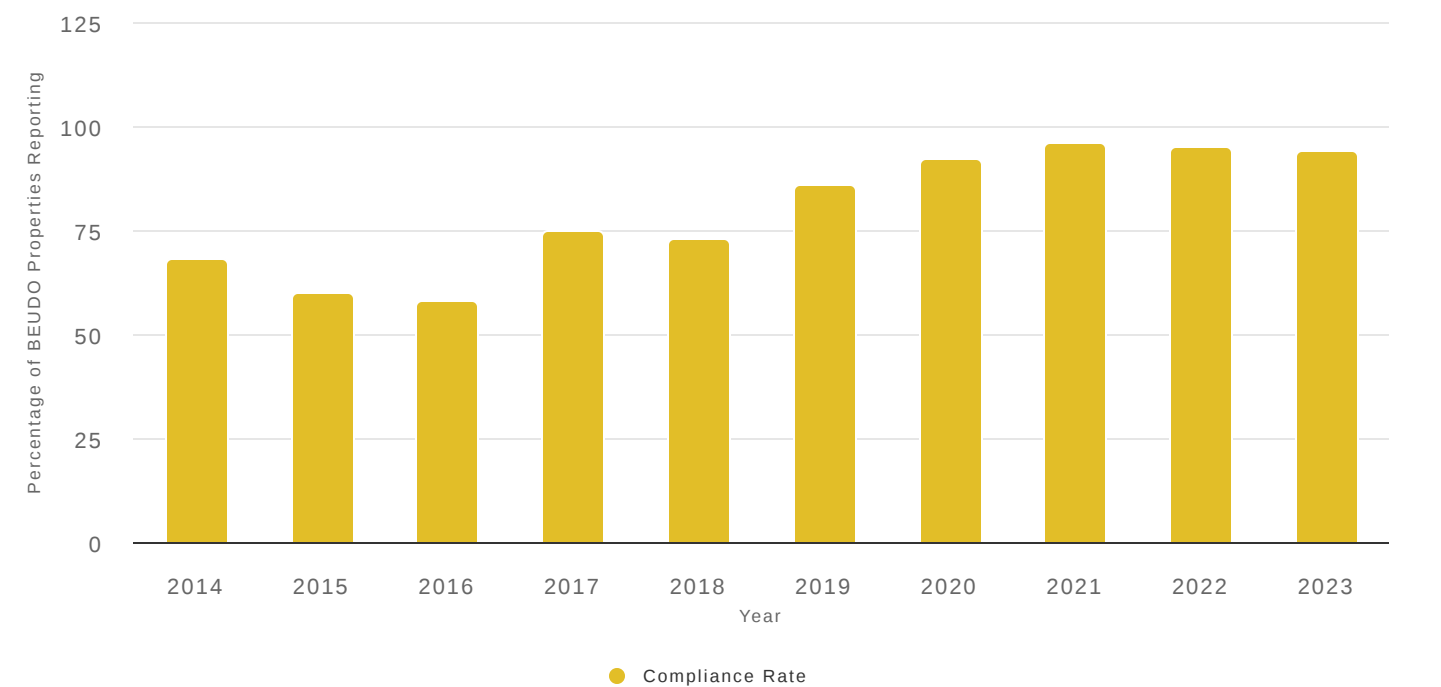
Amendments to the ordinance were adopted in June 2023. These require non-residential buildings over 100,000 sq/ft to achieve net zero emissions by 2035 and non-residential buildings between 25,000 – 99,999 sq/ft to achieve net zero emissions by 2050. You can find the [amendment language](#), a [summarized memo](#), and [more information here](#).

This Action also aims to establish a resource hub to give building owners the knowledge and the tools they need comply with the ordinance. The City through a partnership with Eversource currently offers a [Building Energy Retrofit Program](#).

Over FY25, regulations started to be developed and released for public comment and stakeholder feedback. Given the complexity of the ordinance, regulations will be rolled out in phases. The first set of regulations were rolled out for feedback during the Fall of 2024. Stakeholders were encouraged to provide feedback and comments on the topics of emissions factors and renewable energy purchases. During this time, staff received comments from 10-15 stakeholders. After the comment period ended, Staff worked to update the regulatory language. Phase 1 regulations were finalized and released in December of 2024.

Work continued on creating a platform to administer BEUDO, once available the platform will have a public-facing portal.

Annual BEUDO Reporting Compliance



By May 1 of each year, buildings subject to the BEUDO ordinance are required to submit data for the previous calendar year's energy and water use

Stay up to date with BEUDO by [joining the list serve](#)

Building Energy Use Disclosure Ordinance

Action 1.2 Next Steps, Challenges, and Opportunities

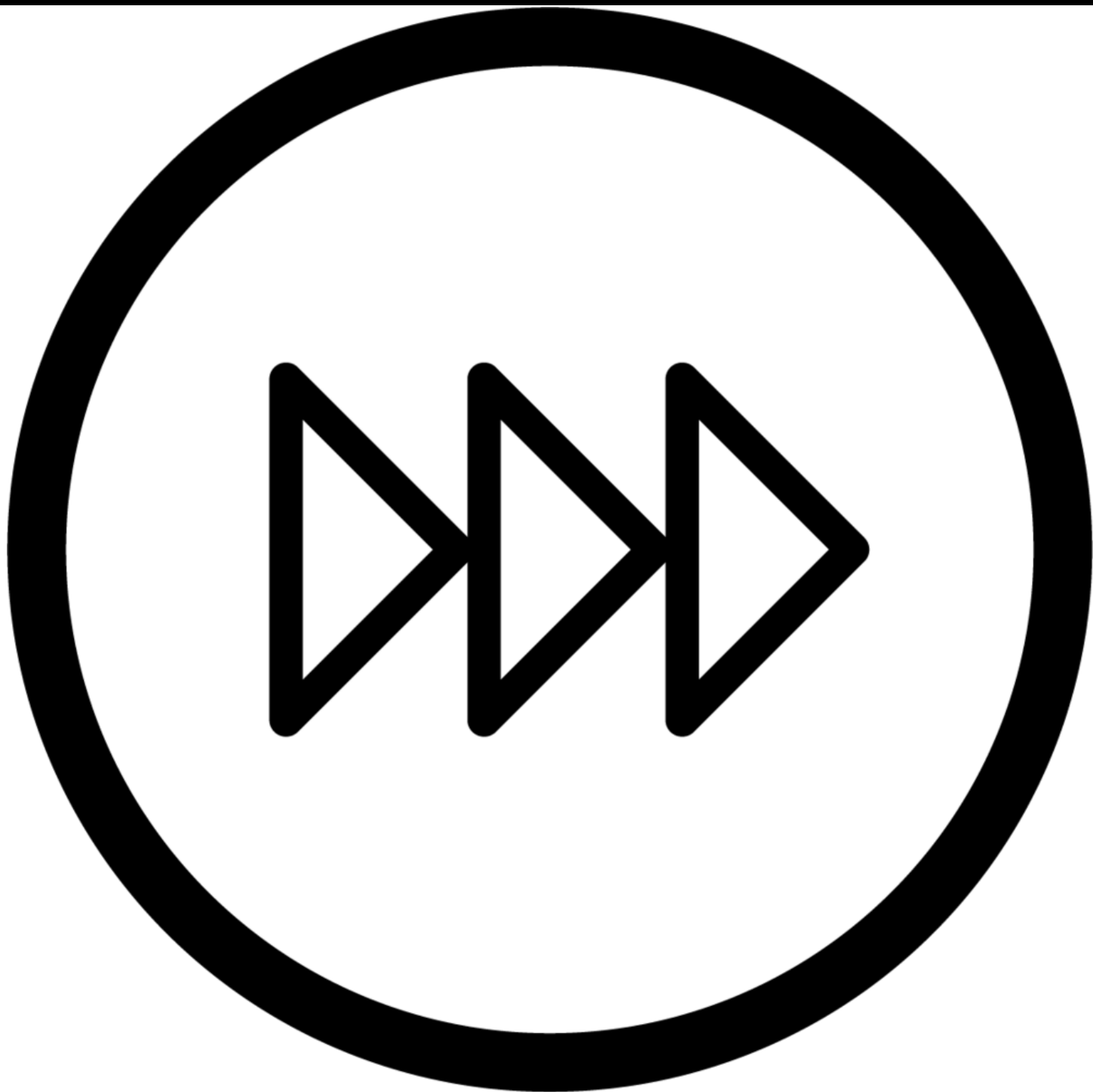
Next Steps: The first year of emissions reduction requirements is 2026. Staff continue to work on developing the regulatory language and will conduct stakeholder engagement for phase two and phase three. In totality, these regulations will provide guidance to building owners about how to calculate their emissions, procure renewable energy to reduce property emissions, and provide requirements for data verification, campus configuration, review board formation, and other aspects of administration.

The City is creating technical guides and other information resources on how BEUDO measures emissions, what qualifies as renewable electricity, and how building owners can utilize flexibility mechanisms in BEUDO.

The City and other partners will continue to wait for the release of grant funds from the Department of Energy. City staff will also work to explore how the Cambridge Electricity Aggregation could possibly help BEUDO properties that are unable to procure their own virtual power purchase agreements.

Challenges: There will likely be challenges that arise related to the administration of the ordinance. Ensuring that every property is meeting the reporting deadline, applying for an extension if needed, meeting emission reduction requirements, or receiving a deferral is a lot of work that requires thoughtful communication, attention to detail, and the full-time dedication of several staff members.

Opportunities: BEUDO presents the city with an opportunity to be a leader in building performance requirements. As other municipalities look to establish similar policies, Cambridge can serve as an example. As the regulations are developed and the Resource Hub is developed and eventually opened, there will be opportunities for engagement with property owners to help them understand opportunities for decarbonization. Over the lifetime of the ordinance, the reduction in the release of climate change causing greenhouse gases into the atmosphere is valuable progress for the City of Cambridge, State of Massachusetts, and the United States as a whole.



Overview

Action Area 2: Net Zero New Construction

Cambridge continues to be a leader in green design and sustainability for new construction. New construction and major renovations are currently required to be [fossil fuel free](#) and meet the requirements of the [Specialized Opt-in Energy Stretch Code](#). Non-residential projects over 50,000 sq/ft are required to report on [embodied carbon](#).

Over the past several years, the City has made a substantial amount of progress across Action Area 2. The City has adopted the most up-to-date and stringent energy code offered by the Commonwealth, the Specialized Opt-in Energy Stretch Code, which has been in effect since July 1, 2023.

Cambridge is one of the communities participating in the Department of Energy Resources Fossil Fuel Free Pilot Demonstration Program.

In March 2023, the City of Cambridge adopted an amendment to its zoning ordinance to account for the embodied emissions of certain new construction projects that require a special permit.

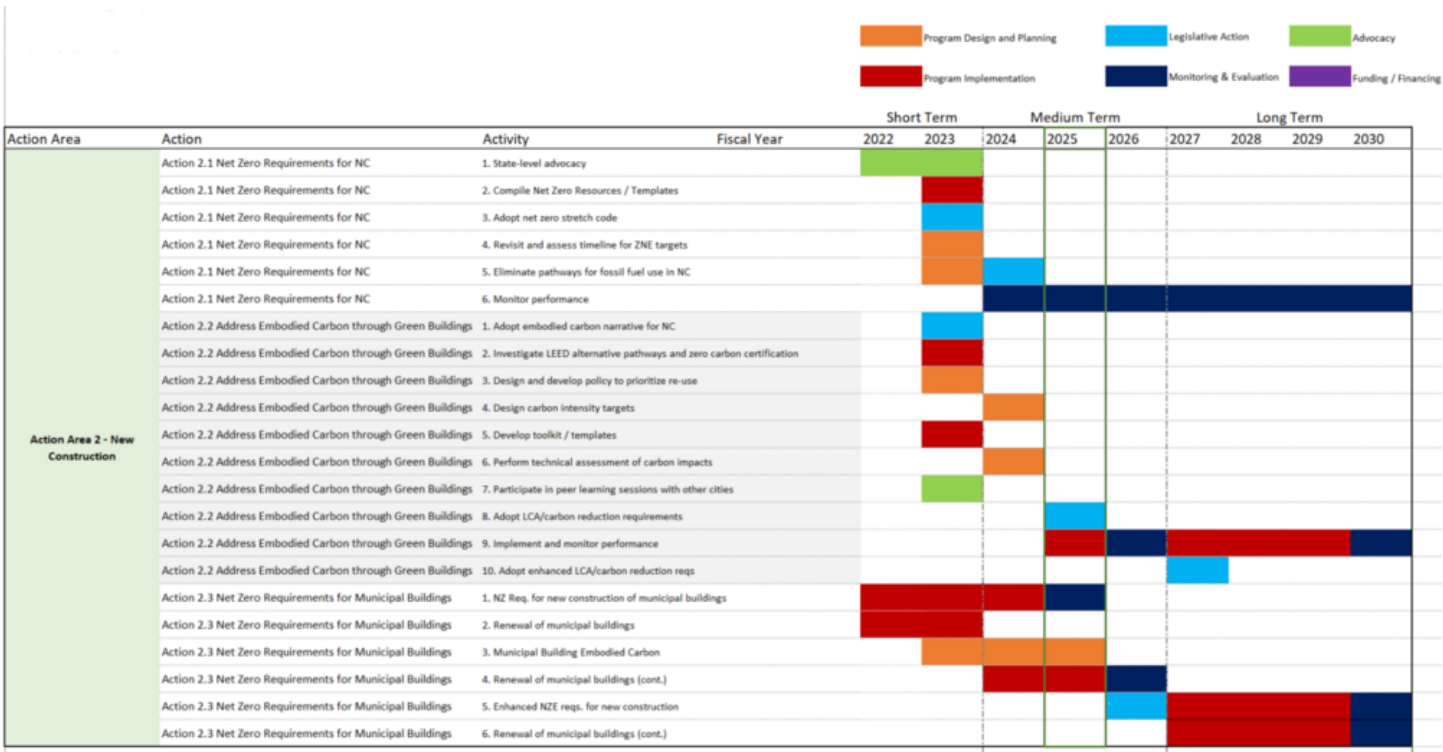
This section covers activity that happened in FY25, which ran from July 1, 2024 through June 30, 2025.

Action 2.1 Net Zero New Construction Meet net zero targets for new construction by building sector while aligning with state initiatives and standards.	Action 2.2 Address Embodied Carbon through Green Building Requirements Address embodied carbon in the construction and renovation of new and existing buildings.	Action 2.3 Net Zero Requirements for Municipal Buildings Continue implementation of commitment to net zero and renewable thermal objectives in municipal buildings to showcase for new technologies and how to achieve deep levels of savings through energy efficient design.
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Timeline

Action Area 2 Net Zero New Construction

This timeline was adopted with the most recent update of the NZAP in 2023.



SMART Goals: Action 2.1

- Adopt Net Zero Stretch Code by early 2023
- Adopt Fossil Fuel Free pilot by summer 2023
- Prepare resources to support developers when updates take effect

Implementation Status

On Track

Equity

Resilience

Net Zero Requirements for New Construction

Action 2.1 Implementation Status

The activities for this action are currently On Track. All of the SMART goals have been met.

As part of the 5-year NZAP update, adopted in January 2023, SMART goals were assigned to action 2.1. FY25, saw the continuation of the [Fossil Fuel Free Pilot Demonstration program](#) with resources available for developers and contractors.

Net Zero Requirements for New Construction

Action 2.1 Progress, Completed Projects

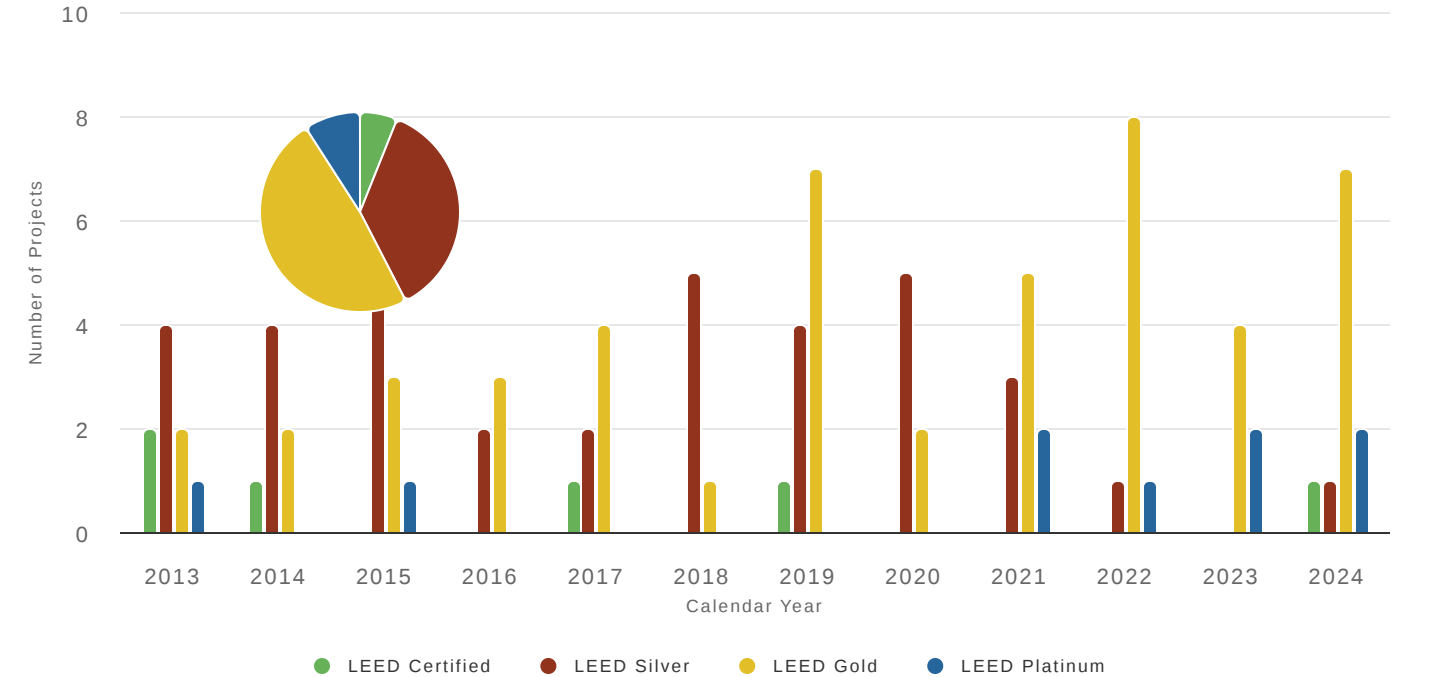
Activity for this action has been successfully advancing for the past several years. Cambridge is currently participating in the Fossil Fuel Free Pilot Demonstration program and implements the strictest energy code offered by the DOER. Since the Fossil Fuel Free Pilot Demonstration program has been in place, there have been 59 projects subject to the requirements. All of them have been residential buildings with 42% being multifamily and 58% being single-family.

Cambridge requires that new construction and substantial renovation projects follow environmentally sustainable design and development practices as laid out in [Article 22 of the Zoning Ordinance](#).

New construction in Cambridge is required to be built to LEED standards, however certification is not required. Cambridge has used LEED as a framework to ensure new buildings meet high standards of energy efficiency, energy use, and sustainability. Calendar year 2024 saw 11 projects reach completion with 7 projects meeting LEED Gold criteria. Data for previous years can change as projects can take a long time from permitting and construction to occupancy. It was previously reported that 2023 had no completed projects, but as fresher data has become available 6 projects were confirmed to have been completed.

Since 2013, 6 LEED Certified, 35 LEED Silver, 48 LEED Gold, and 10 LEED Platinum buildings have been constructed in Cambridge.

Projects Completed since 2013, LEED Certifiability



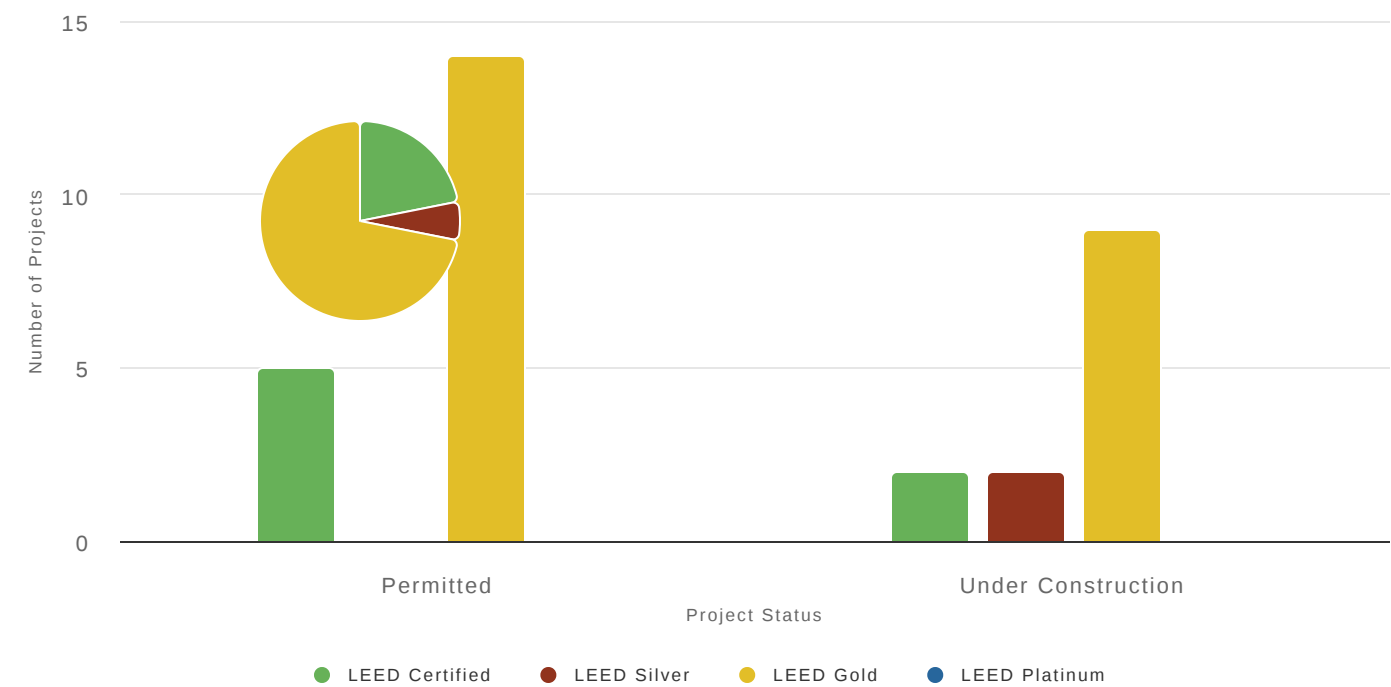
This shows the number of completed buildings per calendar year (2013 - 2023)
([Article 22 Green Building Review Projects, Open Data Portal, last updated February 2024](#))

Net Zero Requirements for New Construction

Action 2.1 Progress, Permitted and Under Construction Projects

As of June 2025, there are currently 19 projects permitted, 13 under construction and 4 that are being reviewed.

Permitted and Under Construction Projects, LEED Certifiability



This shows the number of permitted and buildings under construction by the level of LEED certifiability

[\(Article 22 Green Building Review Projects, Open Data Portal, last updated February 2024\)](#)

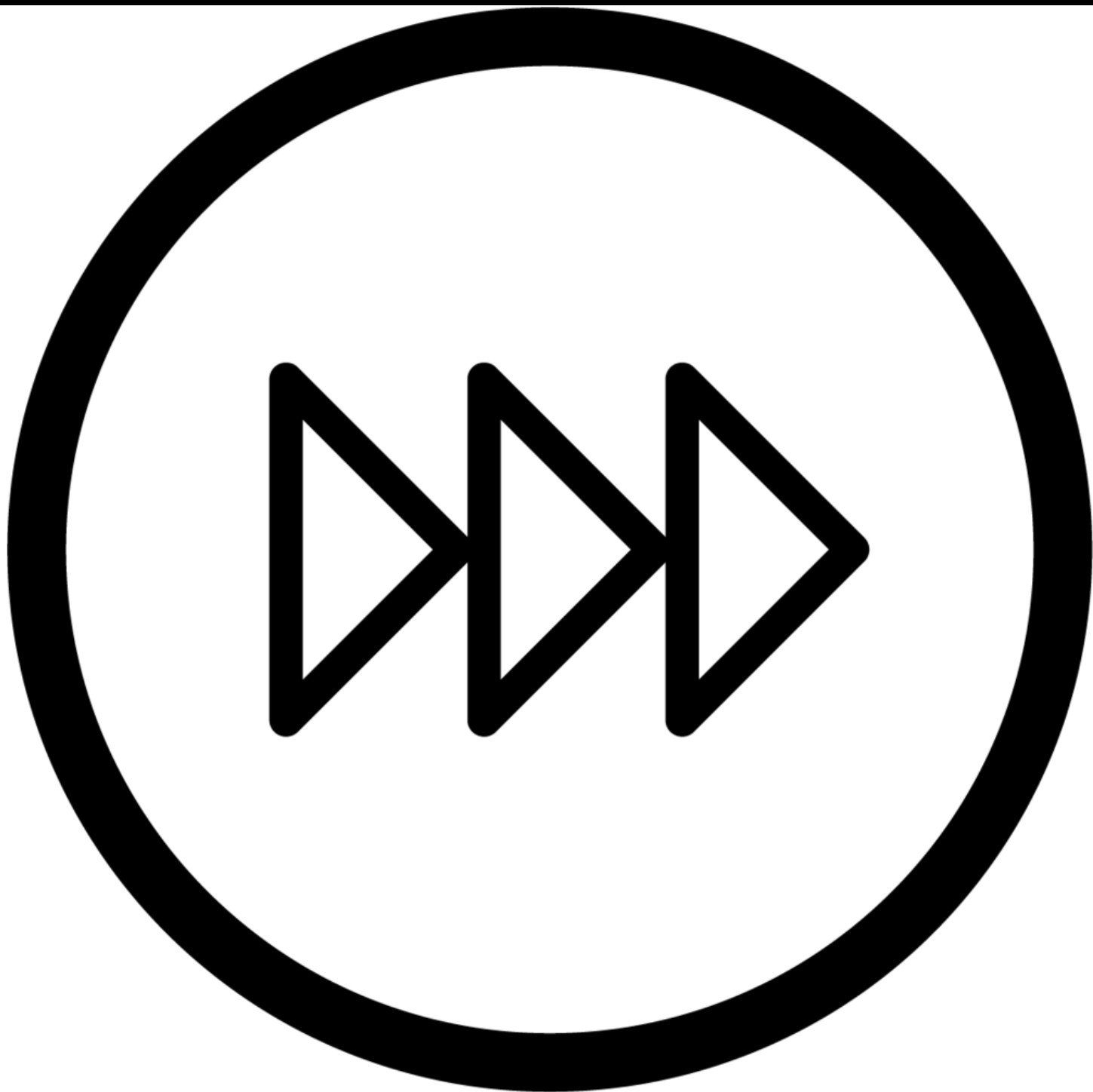
Net Zero Requirements for New Construction

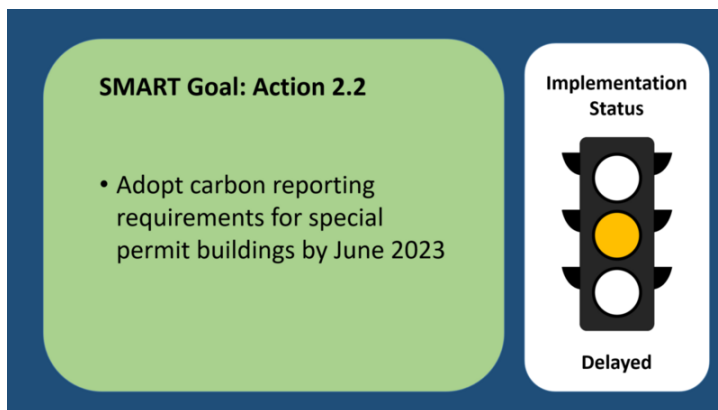
Action 2.1 Next Steps, Challenges, and Opportunities

Next Steps: Staff will continue to monitor performance of the current initiatives as laid out in the NZAP. Additionally, should opportunities to arise for state-level advocacy staff will continue to participate when appropriate.

Challenges: Ensuring that all stakeholders relevant to development in Cambridge are aware and knowledgeable of the requirements that have been created over the past several years will continue to be a manageable challenge.

Opportunities: Cambridge can continue to be a leader by requiring sustainable building practices. As more municipalities look to establish their own requirements, Cambridge can continue to be a wealth of knowledge and resource for others.





Delayed

Address Embodied Carbon through Reporting Requirements

Action 2.2 Implementation Status

This action is currently considered as delayed. The SMART goal for this action have been achieved.

[Final regulations](#) for the embodied carbon reporting requirements were released in May 2024. Currently, non-residential special permit projects that are over 50,000 square feet are required to report on the embodied emissions for select materials as laid out in the zoning amendment. Potential future activities run the risk of falling behind, as data collection has been slow.

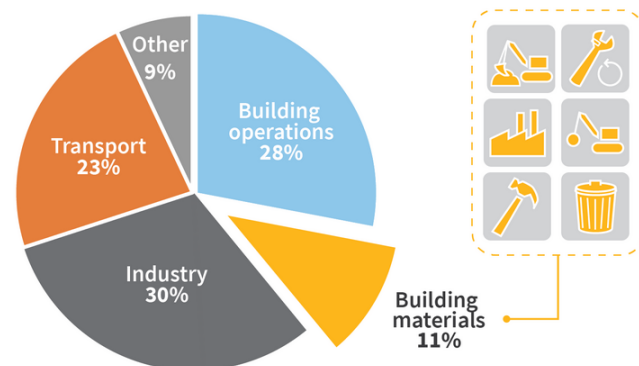
Since the adoption of these regulations, no special permit projects have been required to report embodied carbon.

Address Embodied Carbon through Reporting Requirements

Action 2.2 Progress

Considering that the activities following the adoption of regulations included setting embodied emissions baselines and designing reduction targets this action is considered to be delayed. In FY23, that City staff finished working with a consultant team to establish the [reporting framework](#) and developed [educational materials](#) to enable the reporting of embodied emissions as laid out in the zoning amendment.

[Final regulations](#) were released in May 2024. With the requirements in place for the entirety of FY25 staff waited for eligible projects to be developed, but no eligible projects applied for a special permit.



Global energy-related CO₂ emissions.
Adapted from the UNEP 2019 Global Status Report

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Image provided by the Carbon Leadership Forum from the Embodied Carbon Policy Toolkit:
<https://carbonleadershipforum.org/clf-policy-toolkit/>

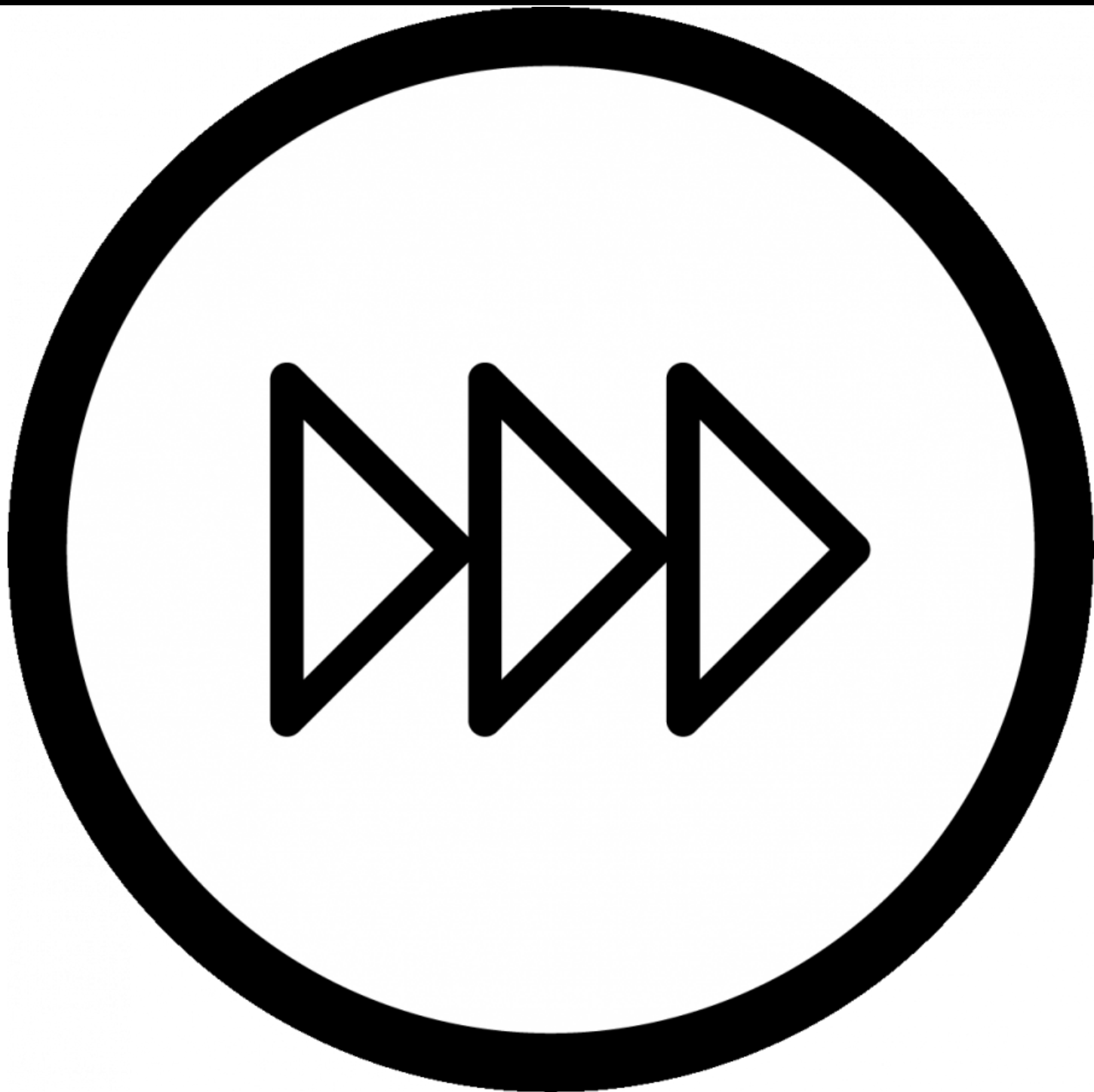
Address Embodied Carbon through Reporting Requirements

Action 2.2 Next Steps, Challenges, and Opportunities

Next Steps: Staff will monitor new, special permit projects that are submitted to the city for review. Projects that meet the requirements for reporting embodied carbon will have their data collected and analyzed by staff. Once determined to have enough data progress on the following activities for this action will begin.

Challenges: The current language of the zoning ordinance for this action has been a limiting factor for successful data collection. Most of the new developments that would be subject to reporting by size have included residential exempting them from the regulation.

Opportunities: Cambridge is one of the first cities in the United States to pass an embodied carbon reporting policy. Industry experts, developers, and other municipal, state, and utility officials often cite the need for regional collaboration and coordination for reporting requirements and standards. Cambridge is already a leader in this space; however, the City should continue to engage with other local municipalities and the State for coordinating additional embodied carbon policies or making amendments to existing policies.



SMART Goals: Action 2.3

- All new and major renovation municipal buildings are net zero
- Update 2030 GHG reduction goal for municipal buildings by the end of 2023

Implementation Status



On Track

On Track



Resilience

Net Zero Requirements for Municipal Buildings Action 2.3 Implementation Status

The activities for this action are currently On Track. Both SMART goals have been achieved.

Cambridge has been demonstrating leadership through designing and constructing new municipal buildings to be fossil fuel free. Municipal buildings are required to achieve net zero emissions by at least 2050. Municipal projects are subject to the adopted specialized opt-in stretch energy code, the fossil fuel free demonstration pilot, and BEUDO.

In FY24, the city updated its [Municipal Operations Greenhouse Gas Emissions 2030 target](#).

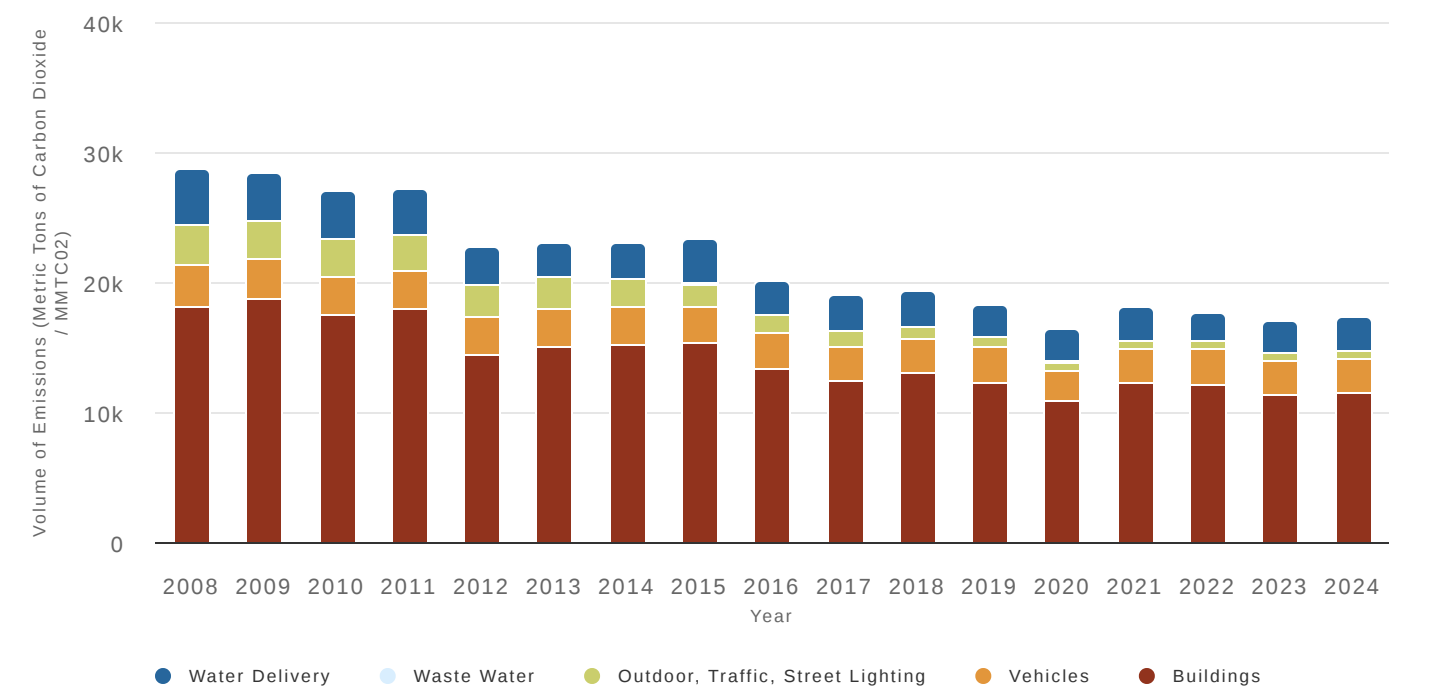
Net Zero Requirement for Municipal Buildings

Action 2.3 Progress, Cambridge Municipal GHG Emissions

Greenhouse gas emissions from municipal buildings and operations have been consistently declining since 2008. In FY24, a new [2030 municipal emissions target](#) was adopted. Cambridge aims to reduce emissions for municipal buildings and operations by 75% against a 2008 baseline.

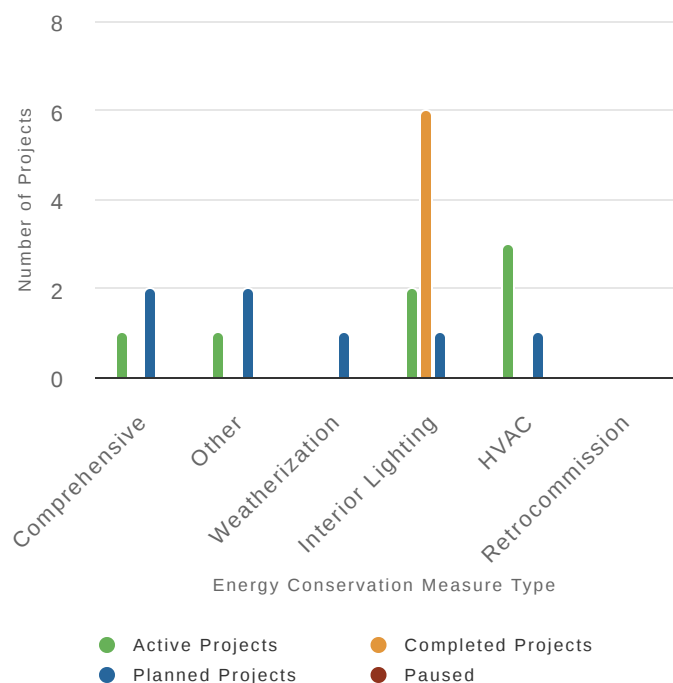
Declining emissions can be attributed to many activities such as, converting heating systems from fossil fuels to electricity, constructing buildings to be more efficient like the King Open/Cambridge Street Upper Schools and the MLK school, the installation of solar, purchases of renewable electricity, and other smaller scale building improvements across the city.

Emissions from Municipal Operations



Cambridge Municipal GHG Emissions (Calendar Year, 2008 - 2024)

Municipal Buildings Retrofit Projects



Data informed by annual Green Communities reporting,
Fall 2025

Net Zero Requirements for Municipal Buildings Action 2.3 Progress, Municipal Building Projects

To manage all of the work being done to municipal buildings a new city department was established, the Capital Buildings Projects Department. This department along with the Department of Public Works is currently conducting two studies to understand and develop pathways for schools and other buildings to be compliant with BEUDO and other net zero requirements.

Electrification and energy efficiency are priorities for every project. In FY25, there were several municipal building projects underway across the city that include energy conservation measures and other upgrades.

Net Zero Requirements for Municipal Buildings

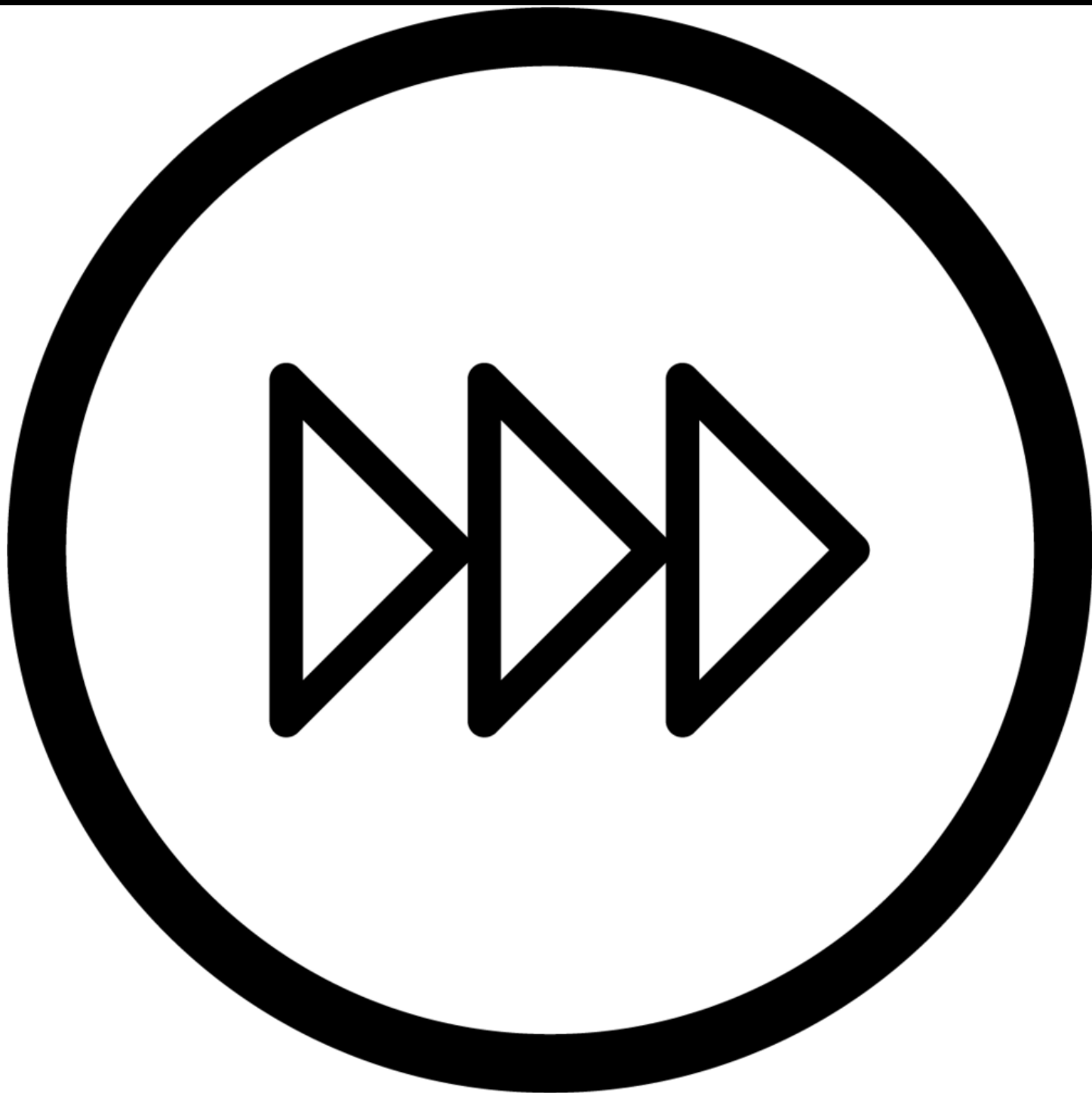
Action 2.3 Next Steps, Challenges, and Opportunities

Next Steps: The city will continue to make progress on on-going construction and renovation projects, as well as start other planned projects. .

Challenges: While each project has its own individual challenges, some exist outside the direct control of the city. For example, the electrical grid will be constrained as more building systems are converted to all electric. Operational changes can help shift loads to alleviate some electric demand, but this may not enough to overcome grid constraints.

Very long lead times for electrical infrastructure equipment such as transformers, sometimes up to 18 months make it difficult to complete large projects. Due to the complexity of HVAC electrification projects and related infrastructural improvements, project duration can be lengthy.

Opportunities: Cambridge will continue to be a leader in reducing greenhouse gas emissions from its operations. New construction, building renovations and retrofits demonstrate leadership but the generation of electricity on site through solar and procurement of 100% renewable energy strongly advance our goals.



Overview

Action Area 3: Low Carbon Energy Supply

The largest volume of greenhouse gases in Cambridge come from buildings, primarily due to the energy used for heating and cooling. To achieve net zero emissions, buildings need to become more energy efficient, become more thermally stable, use renewable electricity, and be fossil fuel free.

Decarbonizing the energy system is a complex matter, with many components being outside of the City's control. Achieving a low carbon energy supply will require a combination of approaches over time including meaningful engagement with stakeholders and clear communication to Cambridge businesses and residents.

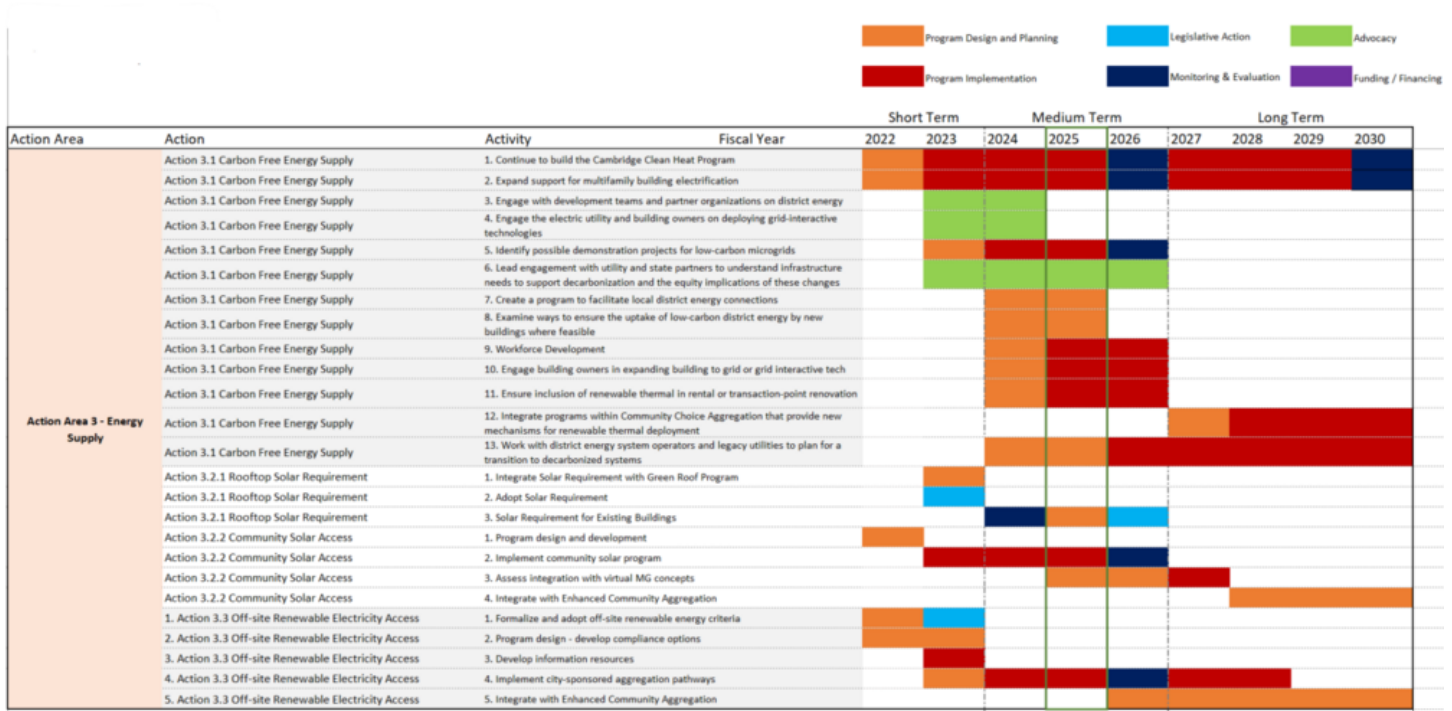
This section covers activity that happened in FY25, which, ran from July 1, 2024 through June 30, 2025.

Action 3.1 Carbon Free Energy Supply Continue to support the electrification of individual buildings' heating and hot water systems, as well as enable low-carbon district energy systems where suitable. Engage and lead on planning for an equitable, effective transition to renewable thermal energy supply.	Action 3.2 On-Site Renewable Electricity Access Promote on-site renewable energy systems and provide support to building owners who may install these types of systems. May include rooftop photovoltaics (PV), solar thermal, battery storage or fuel cells - systems capable of supplying renewable electricity to the host building.	Action 3.3 Off-Site Renewable Electricity Access Adopt City's Off-Site Renewable Energy Criteria to guide corporate entities and others to enter into renewable power purchase agreements that meet the standards of the City. Provide residents and small businesses access to renewable energy through aggregation.
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Timeline

Action Area 3 Low Carbon Energy Supply

This timeline was adopted with the most recent update of the NZAP in 2023.



SMART Goals: Action 3.1

- Establish fossil fuel free conversion rate targets for buildings by end of June 2023
- Complete feasibility study for geomicrodistrict by June 2024
- If feasible, install pilot serving 500 units plus two public buildings in 2025

Implementation Status



On Track

On Track



Equity



Resilience

Carbon Free Thermal Energy Action 3.1 Implementation Status

This activities for this action are currently On Track. The SMART goals for this action have yet to be achieved.

A feasibility study for a geomicrodistrict, also known as a Thermal Energy Network, started in FY25.

Carbon Free Thermal Energy

Action 3.1 Progress

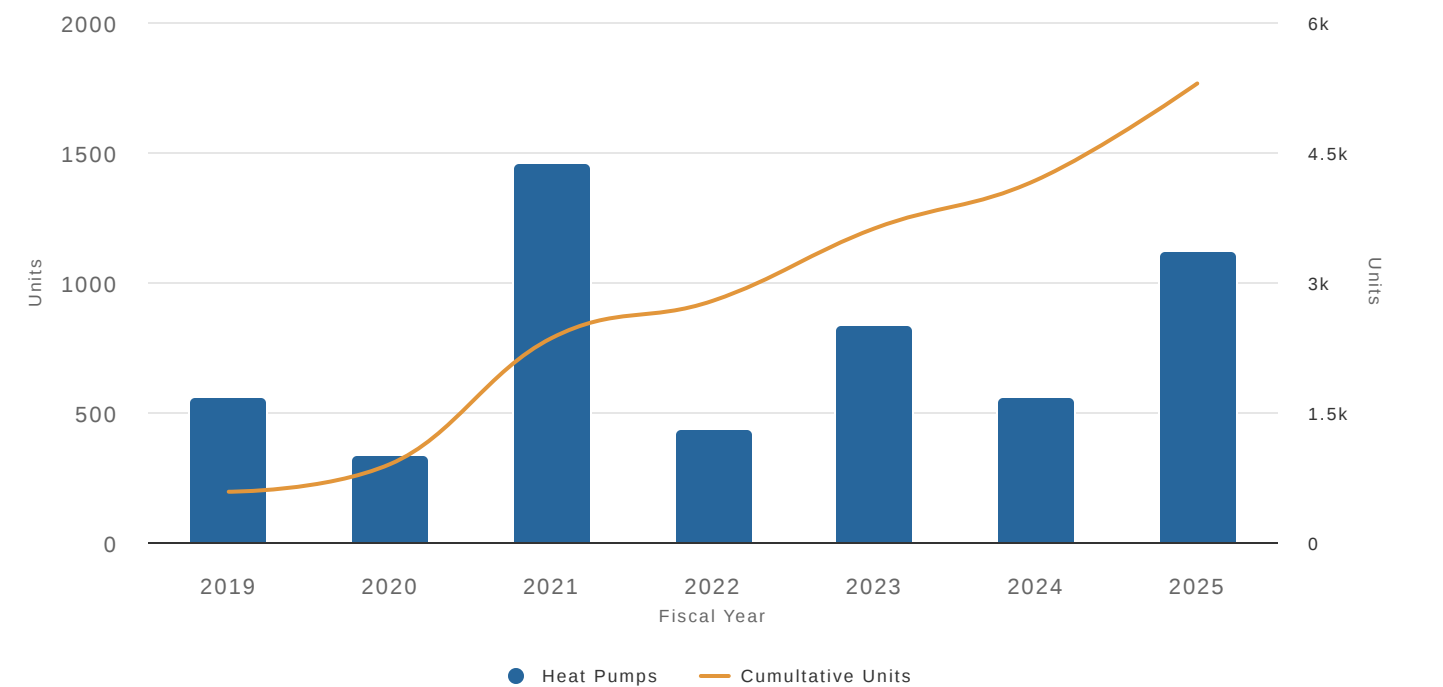
FY25, saw the release of an RFQ for design services for a networked geothermal (Thermal Energy Network) pilot feasibility study. A consultant was contracted and began the initial steps of identifying potential sites for bore fields, anchor institutions, and engaging with community stakeholders. As the project progresses additional data will be used to inform progress for the activities related to this action.

[Electrify Cambridge](#) offers a heat pump quote comparison service, like the Cambridge Clean Heat program, and helps residents plan for future heat pump installments.

Work on the [Neighborhood Energy community microgrid initiative](#) concluded in FY25. The initiative had previously engaged with a wide range of organizations in The Port neighborhood – including community centers, houses of worship, and health centers – on identifying ways to improve energy resiliency for critical buildings and thus for the community as a whole. While many residents and building owners were interested, no buildings were moving forward with the installation of solar and storage, despite several years of engagement and technical support. Microgrids will continue to be a focus of the city’s climate planning, and we hope to see the completion of related work at the Cambridge Community Center.

Since FY19 there have been a total 5,291 heat pump units permitted with 1117 of those happening in FY25. FY25 saw the second highest count of heat pump units permitted since the adoption of the Net Zero Action Plan in 2015

Permitted Heat Pump Units by Fiscal Year



Graph represents the number of heat pumps permitted each fiscal year (left axis) and the total number of units permitted since 2019 (right axis)

([Mechanical Permits, Open Data Portal, pulled June 2024](#))

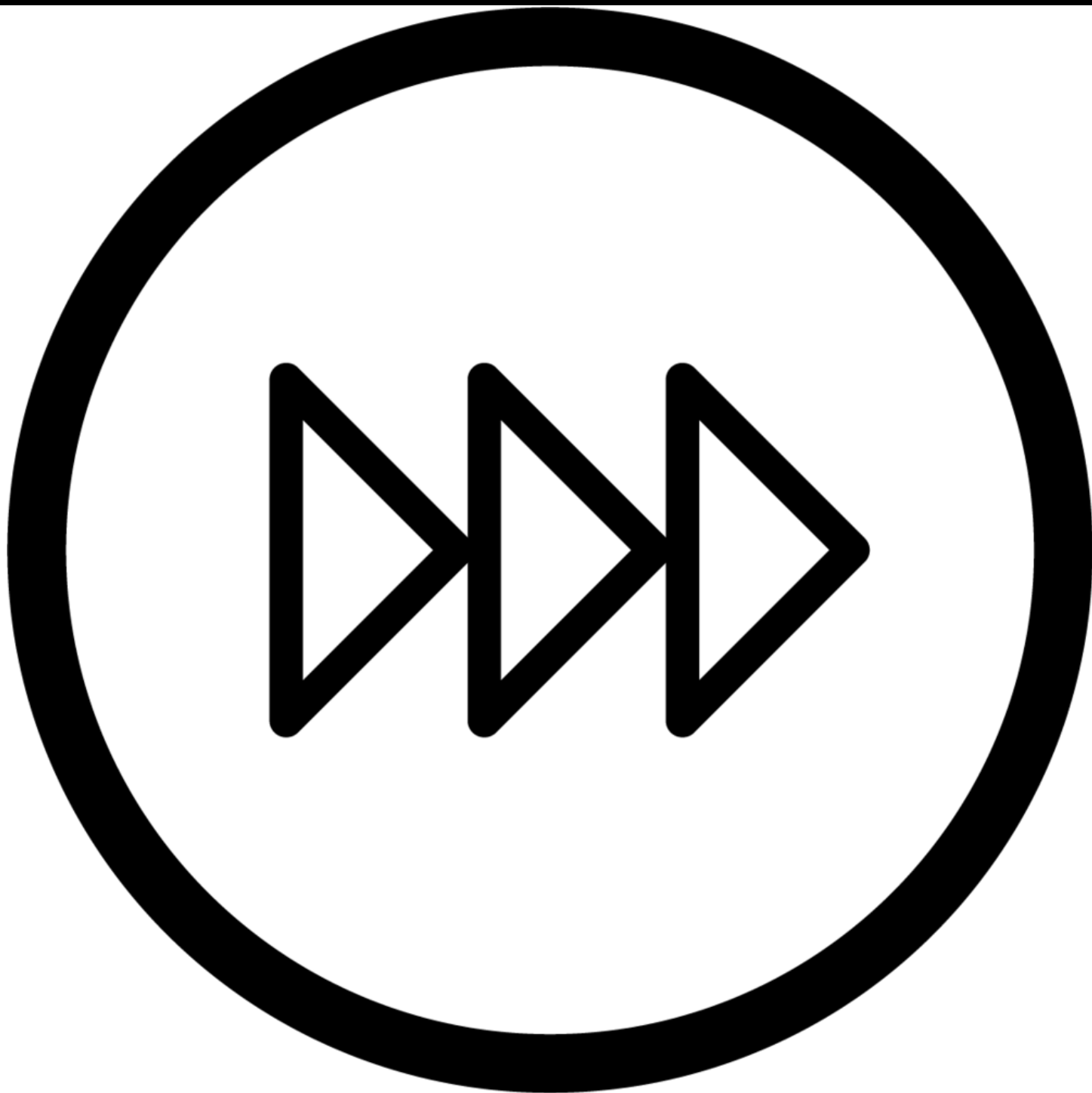
Carbon Free Thermal Energy

Action 3.1 Next Steps, Challenges, and Opportunities

Next Steps: Staff will continue to work with the consultant procured for the Thermal Energy Network study. This study will provide the City with a pathway for the implementation of a pilot program.

Challenges: Data for this action is primarily informed by the mechanical permit database. This comes with challenges related to timing as permitted work can take many months to years to complete. Staff work continuously with other city departments, program administrators, and the contractor and developer community to improve and educate about permitting processes. Challenges related to the thermal energy network project have already started to become clear, such as the availability of space in the dense urban environment of Cambridge for large borefields.

Opportunities: Over the coming year, the geothermal demonstration study will continue to provide meaningful insight about potential opportunities for a connected thermal energy network project in Cambridge. This could lay the groundwork for establishing more geothermal systems throughout the city that would provide more efficient, low-carbon heating and cooling.



SMART Goals: Action 3.2

- Achieve 55 MW of solar in Cambridge and city properties by 2030.
- Adopt a solar installation requirement for new construction by June 2023
- Launch community solar program in 2023
- Install 5.5 MW of community solar in Cambridge by 2030

Implementation Status



On Track

On Track



Equity



Resilience

Rooftop Solar and Community Solar Access

Action 3.2.1 and Action 3.2.2 Implementation Status

The activities for this action are currently on track. Progress toward achieving these SMART goals continues.

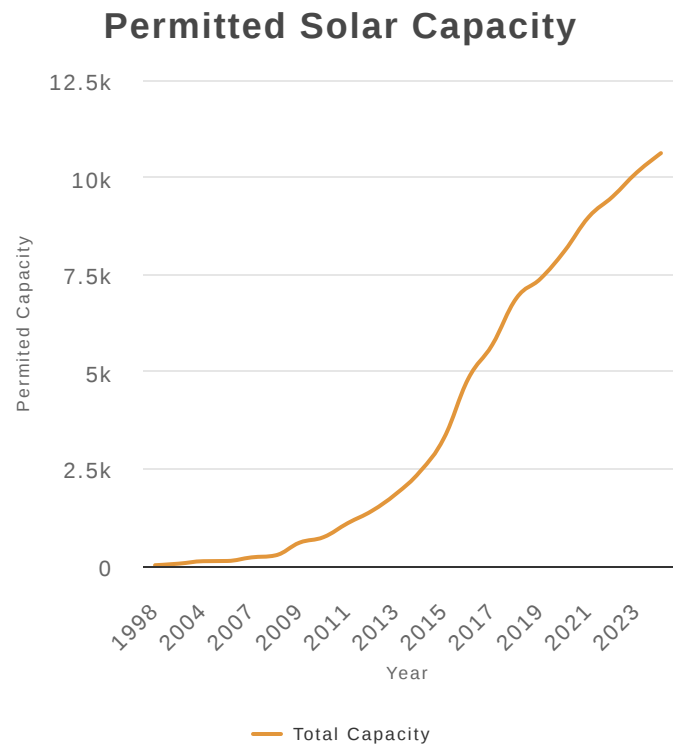
Residents have several options for accessing the benefits of solar, either through direct ownership or through a community solar program. In FY25 the [Solar Assistance Program](#) was launched which will identify potential solar hosts, help design a system, and facilitate the installation of community solar projects in Cambridge.

Community solar is a valuable option for Cambridge residents as there are many complexities that make traditional rooftop solar difficult in Cambridge, including the residential building stock being mostly multifamily or rentals.

Rooftop Solar Action 3.2.1 Progress, Permitted Solar Capacity

Since 1998, Cambridge has permitted just over 10,000 kW of solar generation capacity. Significant year over year growth will be needed to achieve 55 MW by 2030 per the SMART goal. Building owners have several city programs, which they leverage to install solar on their roof.

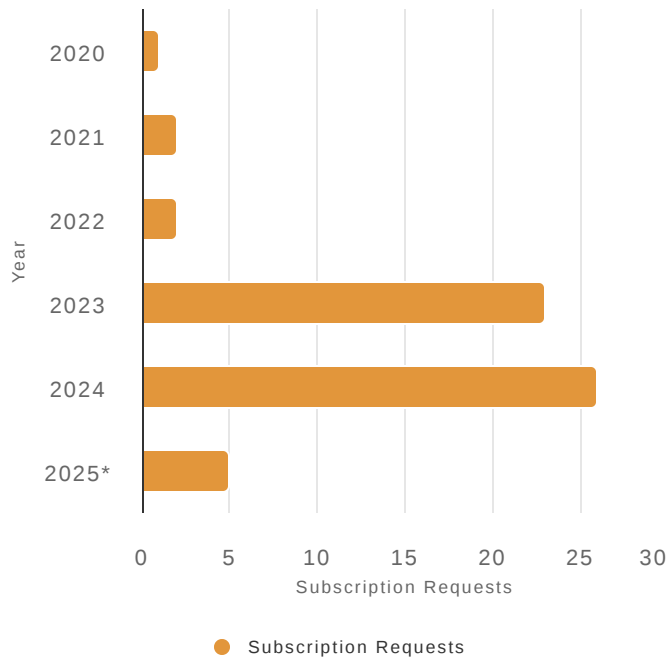
Residential and small commercial buildings can access EnergySage, Sunwealth (low-income), Electrify Cambridge, and the new Solar Assistance Program. Large commercial buildings can use resources available through the [BEUDO Building Energy Retrofit Program](#) and the [Solar Assistance Program](#).



[Explore roof-top solar for your home](#) and see installations on the [Cambridge Solar Installations Map](#)

([Solar Permits](#), [Open Data Portal](#))

FY24 Enrollments in Cambridge Community Solar Programs



Cambridge has partnerships with [EnergySage](#) and [SunWealth](#) to help residents access community solar

Community Solar Access Action 3.2.2 Progress, Community Solar Programs Enrollment

About 66.3% of Cambridge residents are renters and therefore, they do not own the space in which they live meaning that they do not have direct control of their roof. The current market for rooftop solar works well for single-family homes with a single owner, but not for multifamily buildings with many residential units or with multiple decision makers. Given the complexities of rooftop solar for multifamily buildings, renters and building owners who cannot afford to install solar can still access the benefits by subscribing to a community solar project.

However, there are often long lead times from expressing interest in joining a community solar project to receiving credits on an electrical bill. This makes tracking enrollment in real time difficult, especially with multiple options available to residents.

Much of the focus of this action over FY25 was spent on internal work developing the Solar Assistance Program. Little direct outreach was done to promote existing community solar opportunities, though the programs were still advertised alongside other community energy programs offered by the City of Cambridge.

Rooftop Solar Requirements

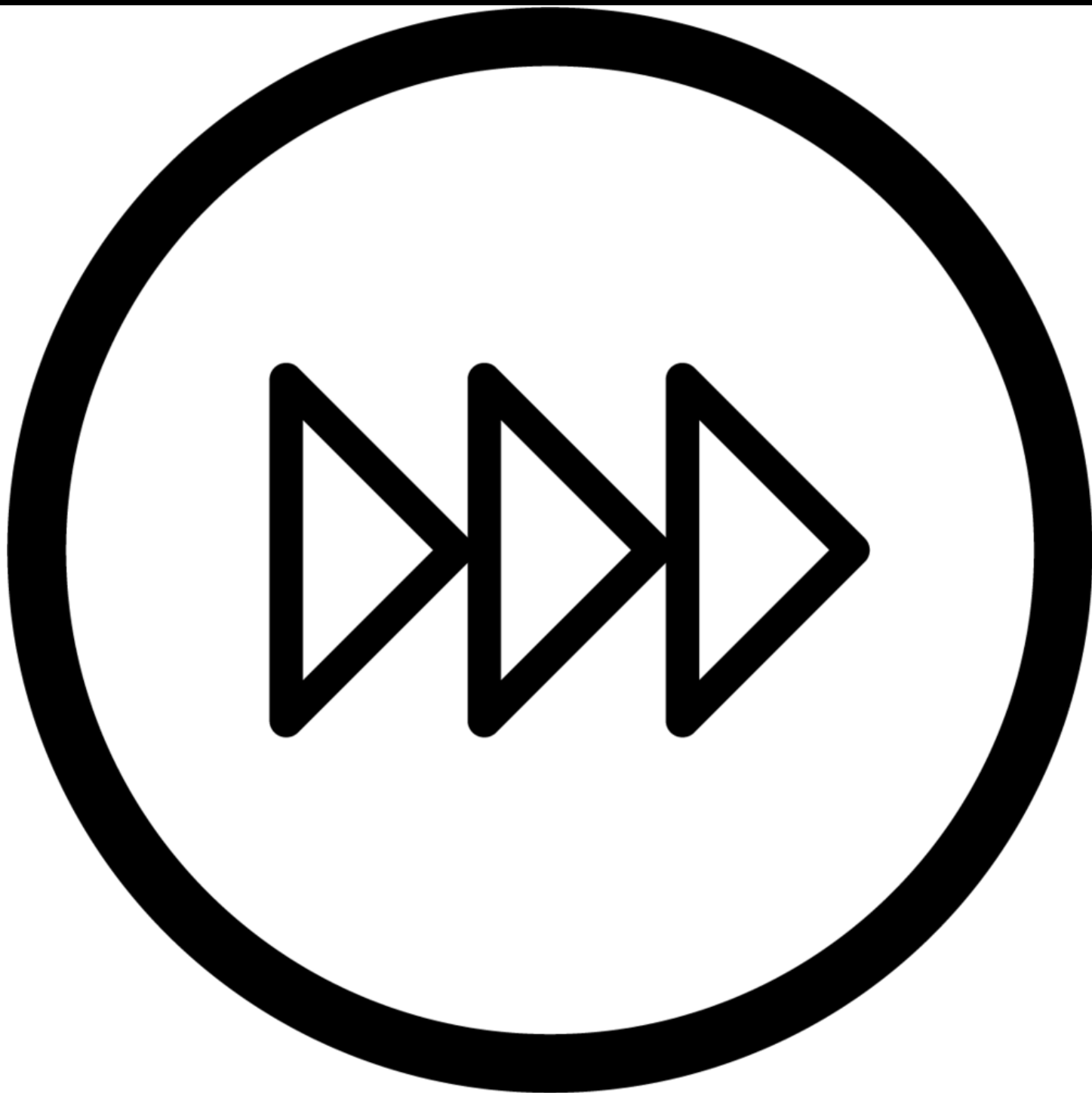
Action 3.2.1 and Action 3.2.2 - Next Steps, Challenges, and Opportunities

Next Steps: Staff will continue to offer the Community Solar Administrator Program.

Challenges: Rooftop solar in Cambridge is a challenge as many of the buildings in the city are multifamily, commercial or institutional. Rooftop solar is a straightforward process for single-family buildings, but not for multifamily. Complexities around incentives, parcel rulings, consensus among condo associations, and financing are all but a few challenges solar faces in Cambridge.

Consolidated billing for community solar subscribers was unsuccessful passing through state legislation. Therefore, the complexity of the billing system will continue to be a challenge for residents.

Opportunities: The Community Solar Administrator Program is a big opportunity for more solar to be installed in Cambridge. This unique and innovative program aims to open the door for more buildings to host community solar.



SMART Goals: Action 3.3

- Adopt off-site renewable energy criteria through BEUDO in 2023
- Achieve 50% renewable energy for Cambridge Community Electricity aggregation by 2025 and 100% by 2030.

Implementation Status



On Track

On Track



Equity

Off-site Renewable Electricity Access Action 3.3 Implementation Status

The activities for this action are currently On Track. The SMART goals for this action are continuing to advance.

This action provides residents and small businesses access to renewable energy through the City's electricity aggregation program. In FY25, the city continued to offer the [Cambridge Community Electricity \(CCE\) aggregation program](#) with an energy supply contract that runs through January 2026. Staff continues to work on understanding how BEUDO buildings could potentially be served through the municipal aggregation program or other power purchase agreements.

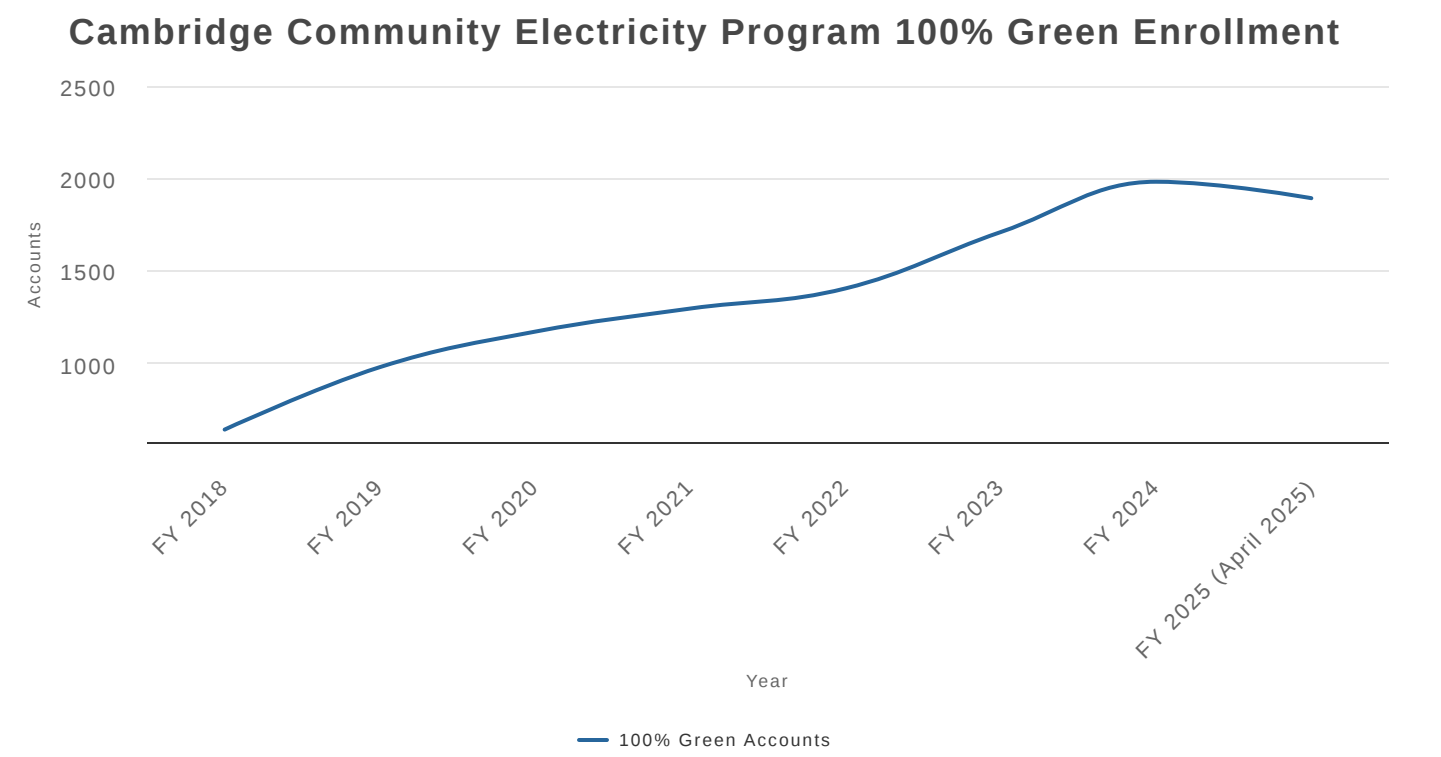
Off-site Renewable Electricity Access

Action 3.3 Progress

The aggregation program leverages the purchasing power of the community to access lower-cost and cleaner electricity. The current contract for the aggregation runs through January 2026. This energy supply contract increased the amount of Massachusetts Class 1 Renewable Energy Credits (RECs) in our supply mix. New and existing electric utility accounts in Cambridge are automatically enrolled and receive 50% of their electricity from MA Class 1 RECs. Residents can opt up to get 100% renewable electricity or opt down to the standard mix as required by the Massachusetts Renewable Portfolio Standard (RPS).

Over 42,000 electricity accounts participate in the [Cambridge Community Electricity Program](#) with almost 2,000 opting for 100% renewable electricity. Customers of the aggregation program from July 2023 through the end of June 2024 used 394,742,438 kWh of electricity. Over the lifetime of the program, residential and business accounts have saved over \$98 million compared to Eversource Basic Service.

Over the course of FY25, City Staff worked with renewable energy project developers to continue developing, designing, and constructing wind and solar projects that will support the Cambridge Electricity Aggregation and municipal operations. Currently, as of the end of FY25, all of the electricity consumed by City-owned electric accounts use 100% renewable electricity.



Sign up to get 100% renewable electricity through the [Cambridge Community Electricity Program](#)



Graham and Parks School

Did you know?

All the [Cambridge Community Electricity Program](#) participants pay a \$0.002 charge on each kWh of electricity they use and their collective impact has added over \$2 million dollars to our Renewable Energy Fund. In March 2022, a new 243 kW local [solar project was installed on Graham and Parks School](#) using Renewable Energy Fund money. This solar project is collectively “owned” by all the Cambridge Community Electricity Program participants! It is expected to generate at 280,000 kWhrs of energy per year.

[Opt up to 100% Renewable Energy](#)

<https://www.masspowerchoice.com/cambridge>

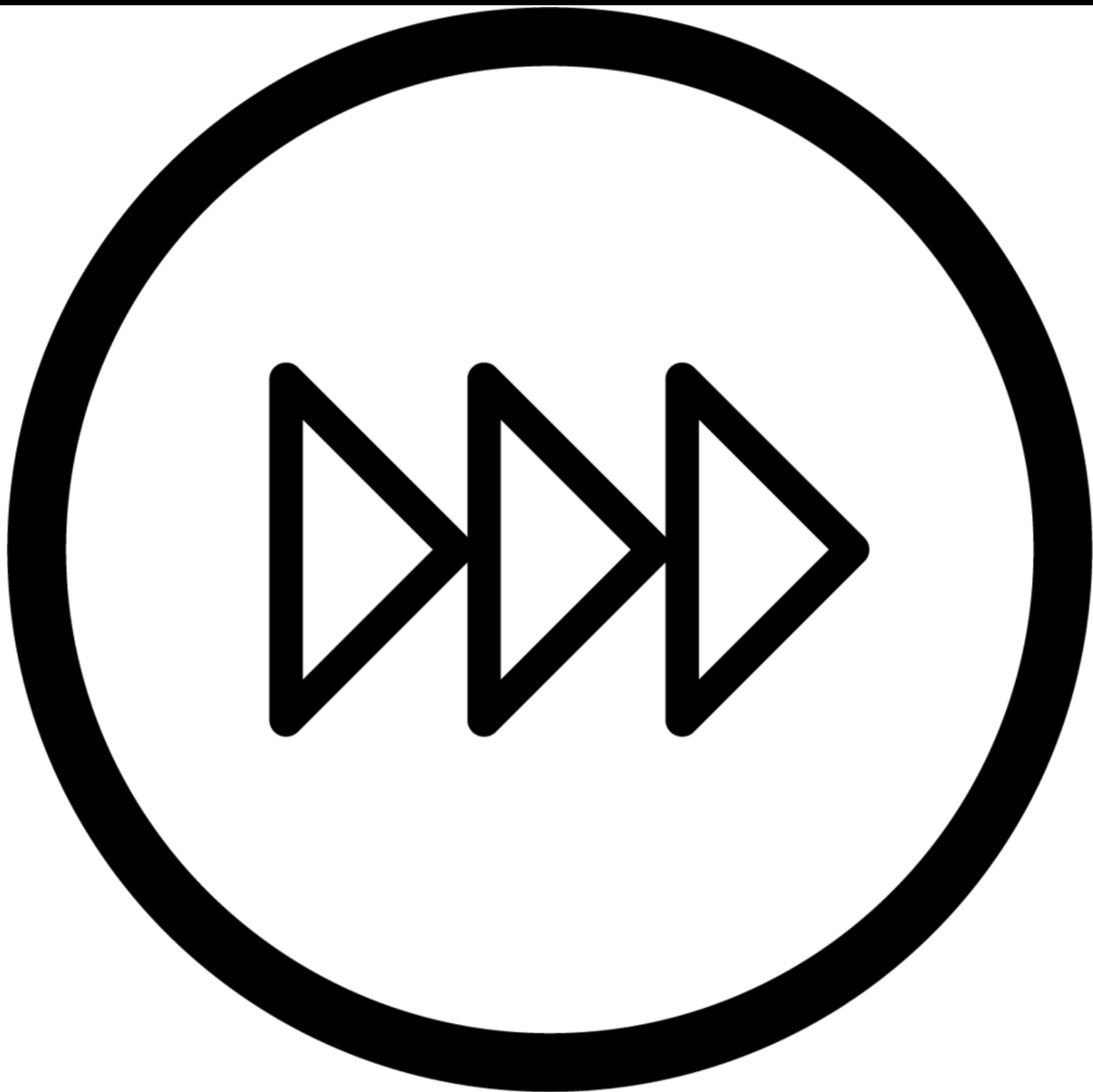
Off-site Renewable Electricity Access

Action 3.3 Next Steps, Challenges, and Opportunities

Next Steps: Outreach will continue across the city to educate residents about the program. CCE is working to add more renewable electricity, such as through innovative VPPAs .

Challenges: Continuously growing enrollment remains a challenge. Since the inception of the aggregation the total number of enrolled accounts has remained relatively stable, meaning that overall enrollment numbers haven't grown much. There are several factors for this such as the transient nature of Cambridge residents, but more importantly third-party competitive suppliers that compete with the aggregation. Competitive suppliers often target the most vulnerable populations by offering lower costs immediately after enrollment, then increasing prices sustainably shortly thereafter. Regulating these competitive suppliers would need to be coordinated by the State.

Opportunities: At the state level there are big opportunities for aggregation programs, community solar programs, and how utility billing is done. The Department of Public Utilities (DPU) has recently enabled municipalities to have community solar automatically included in aggregation programs. Moving to a system of single billing would have a significant impact on the ease of implementation and education around the benefits of community solar.





Resilience



Equity

Overview

Action Area 4: Financing and Capacity Building

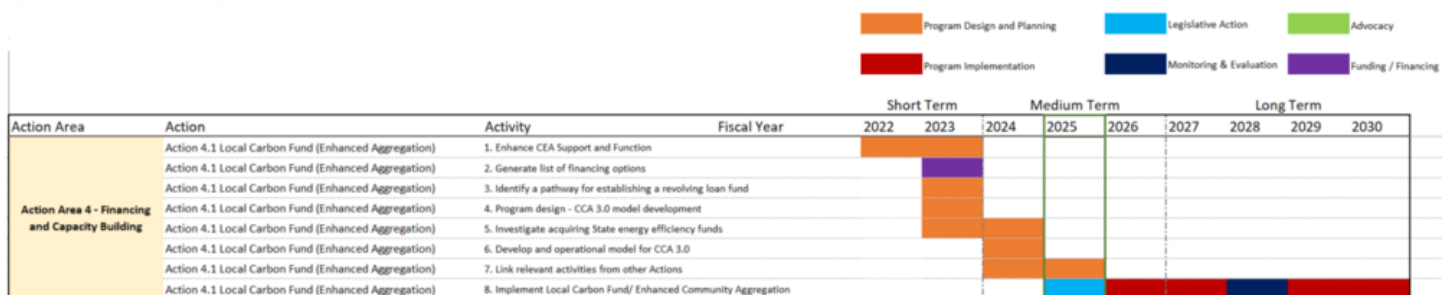
This revised action is aimed at providing building owners the resources they need to make informed decisions about energy improvements and a means to access financing or funding for their projects. Further, this action is intended to lay the groundwork for various aspects of an enhanced Community Choice Aggregation program (CCA 3.0). The CCA 3.0 model is intended to allow residents and businesses the opportunity to own distributed energy resources (DER) using “green bond” financing to purchase the distributed energy systems and have customers opt to buy shares in the DERs, thereby conferring an ownership share to the participants and allowing the participants to realize the cost savings that occur with DER installations. By buying shares in DERs, customers can participate in DER ownership without high upfront capital costs or good credit, or even participate as renters. CCA 3.0 resolves to disengage from, rather than mitigate the impacts of fossil fuel power plants by planning and facilitating voluntary investment in local renewable energy and energy efficiency technologies. Furthermore, CCA 3.0 facilitates voluntary investment in small DERs on homes and businesses that reduce demand for grid and pipeline resources, rather than centralized renewable generation that adds to infrastructure demand. CCA 3.0 achieves equitable energy ownership, as opposed to equitable consumption of energy.

Activities for Action Area 4 have not started. Therefore, there is no FY24 progress reported.

Timeline

Action Area 4 Financing and Capacity Building

This timeline was adopted with the most recent update of the NZAP in 2023.



Financing and Capacity Building Action 4.1 Implementation Status and Progress

Over the course of FY25, Staff worked to develop a scope of work that would bring external expertise to help the city understand the legal and regulatory framework to understand how BEUDO could be supported by the existing aggregation program. Early in FY26, a bid to procure a consultant to support this planning work is scheduled to be released.

SMART Goals: Action 4.1

- Adopt commercial PACE by June 2023
- Adopt Local Carbon Fund by 2025

Implementation Status



On Track

2020 Target Achieved

Financing and Capacity Building

Action 4.1 Next Steps, Challenges, and Opportunities

Next Steps: In FY26, staff will be undertaking a study on financing needs and opportunities. This needs assessment will take into consideration new financing offers, such as the low- and moderate-income retrofit financing from the Massachusetts Community Climate Bank, and federal funding programs.

Challenges: The costs of building decarbonization can be high, so a successful financing strategy will need to help residents overcome cost hurdles, including upfront and operating costs. The CCA 3.0 model will also require investigating the mechanisms and regulatory frameworks that would allow Cambridge to create such a program.

Opportunities: Over the coming year, staff will identify needs, opportunities, and strategies for financing to support building decarbonization in Cambridge. Future financing programs, including a CCA 3.0 approach, could help residents implement electrification projects and share in the benefits of distributed energy resources.

