

Meeting Minutes (*approved 12/20/24 3-0-1*)

Energy and Climate Committee (ECC)

Nov. 8, 2023

7:30 pm via Zoom

*In compliance with the revised Open Meeting Law requirements, this hybrid meeting is being streamed and also is being recorded and available via WayCam.

Members: Ellen Tohn, Anne Harris, Harvey Michaels, Tom Sciacca

Student associate member: Tara Sawrikar

Wayland Sustainability Manager Abigail Shute

Guests: Walter Gray and Erin Camp from PowerOptions

Ellen Tohn called the meeting to order and read notice preamble when quorum was present at 7:35 PM

Public comment: None

7:40 Walter Gray - presentation of EV services, slide deck attached. Incentive complexity was behind PowerOptions' decision to offer support to non-profits, including municipalities.

Conversation: on future trends, services of PowerOptions, including their relationship with "EV Gateway." Wayland's focus is on chargers at the school facilities. They are also planned for the Council on Aging facility.

8:27 Erin Camp, Power Options - about their proposal to prepare for us a Building Decarbonization roadmap for the municipality. They use software 1) "Better" - by LBNL, and 2) Helioscope – commercial Solar software. Their plan development Costs \$500-700 per building, lower with more buildings. Price will rise gradually to about \$1000 per building in a few years.

Discussion on how PowerOptions would develop a plan, and how it could be used by the town. Note: They don't provide direct access to the analysis spreadsheets that produce their plan. Initial slide for minutes to be attached.

9:00 Abby Shute reported on current projects:

- Solar for Loker School is still being studied.
- Town Building energy improvements project is on track.
- Council On Aging solar - PMBC (Permanent Municipal Building Committee) and Select Board approved contract.
- Drafts for solar town meeting articles will be discussed next meeting.
- She is preparing the application for the DOER (Department of Energy Resources) Municipal Energy Technical Assistance (META) for a battery feasibility study at the Middle School.
- She is working on meeting requirements for certification for the DOER Climate Leader program, which helps communities reduce emissions and electrify energy uses, for FY 2025. This will allow access to additional grants.
 - One of the requirements is for the Town to adopt a green vehicle fleet policy. Abby requests the Committee endorse her work on this. Anne proposed a motion: "The Committee supports Sustainability Manager Abigail Shute writing a fleet vehicle acquisition policy that aligns with

Green Communities requirements and Wayland's Climate Action Plan and proceeding with proper Town procedures to approve and enact it." Tom seconds. Motion passed 4-0-0.

9:15 – 9:40

- Ellen asked, re: “Climate Literacy for Wayland Students” petition that we all sign on and distribute to neighbors.
- Proposed state Opt-In Specialized code adoption warrant article for spring Town Meeting discussion will be further discussed December meeting.
- Electrifying Community Outreach (ECO): no new updates
- Anne suggested we limit future meetings to one guest per meeting.
- Additional updates postponed to a future meeting due to time constraints
- Anne moves that meeting minutes from 10/11/23 be approved. Harvey seconds. Motion passes, 4-0-0.
- Next meeting date set for Dec. 20.
- Tom moved to adjourn. 4-0-0.

Note taker: Harvey Michaels

Wayland Energy Committee - EVSE

Wednesday November 8th, 2023

Walter Gray – Program Manager, PowerOptions

Agenda

- PowerOptions Intro
- Incentives Overview
- Incentives interaction
- Charging as a Service (“CaaS”)
- CaaS considerations/comparisons
- Q&A



We give our members “peace of mind”

A Trusted Advisor Since 1998

Originally created by the Commonwealth of Massachusetts to serve state agencies, PowerOptions has been serving nonprofits and public entities for 25 years.

A Mission-Driven Nonprofit

PowerOptions’ mission is to empower nonprofits and public entities with solutions to reduce the cost, carbon, and complexity of energy.

Consortium Leverage

PowerOptions members benefit from the collective buying strength of over 490 members including some of the largest nonprofits in Massachusetts, Connecticut, and Rhode Island.

Flexible Programs

PowerOptions’ programs are intentionally and thoughtfully designed to serve members of any size and circumstance

Your Energy Team

PowerOptions’ on-call energy team provides guidance throughout the contracting process, so you feel supported and resourced to make smart and proactive energy decisions.

Electricity & Gas Supply | Solar & Renewables | Vehicle Electrification | Energy Efficiency | Analytics & Sustainability Planning



Incentives – Make Ready

Applicants may be eligible for additional EVSE Rebates:

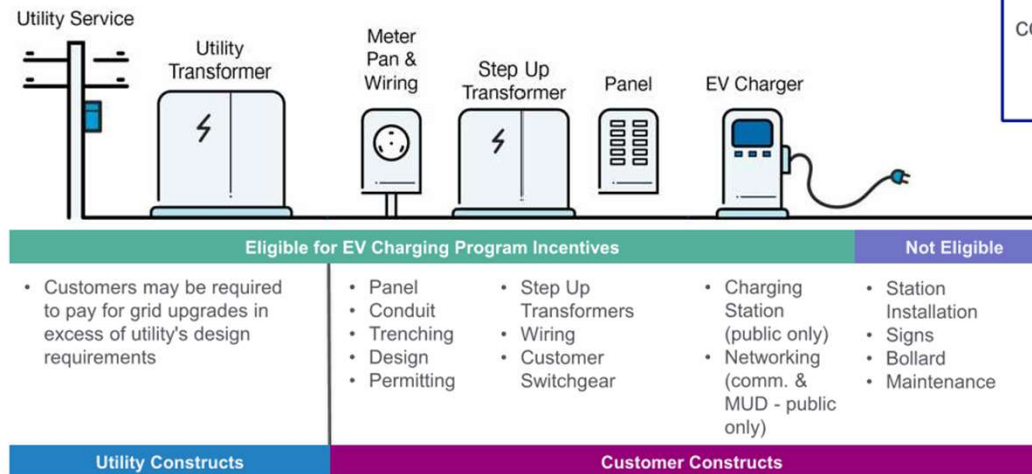
Sector/ Property Type	Environmental Justice Community (EJC) Criteria	Make Ready Rebate	Make Ready Eligibility	EVSE Rebate (Level 2)	EVSE Rebate (DCFC)	EVSE Eligibility	Make Ready Rebate Incentive Caps Level 2 (customer side of meter)	
Public/ Workspace Public parking lot, commercial office building, shopping center, etc.	EJC- Income	Utility-Side: up to 100%, not to exceed actual costs	Must apply for available State/ Federal funding if eligible	100% ports 1-10	\$40k per port (50-150 kW), \$80k per port (>150 kW) ¹	Must be Publicly Accessible ²	Retrofit	New Construction
	EJC- Other			75% ports 1-10			New Service	
	Non-EJC			50% ports 5-10	\$40k per port (>50 kW) ¹		\$13,358 per port	\$6,700 per port
	Non EJC- Municipal			50% ports 3-10			No New Service	
Fleets Company/ municipality owning fleet of light-duty vehicles ³	EJC- Income	Customer- side: see incentive caps in the table to the right	MUDs: Must be non-deeded parking, unless >20% parking spaces have EVSE installed	100% ports 1-10	\$40k per port (50-150 kW), \$80k per port (>150 kW) ¹	Public fleets only ⁴	\$13,358 per port	\$5,700 per port
	EJC- Other			75% ports 1-10			Make Ready Rebate Incentive Caps DCFC (customer side of meter)	
	Non-EJC			50% ports 5-10	\$40k per port (>50 kW) ¹		100%	
Multi-Unit Dwellings (MUDs) Multi-unit (5+ units) residential dwelling	EJC- Income			100% ports 1-10	N/A	N/A		
	EJC- Other			75% ports 1-10				
	Non-EJC			50% ports 1-10				

1. Minimum 100 kW per site, site max EVSE incentive of \$400k
2. Publicly Accessible in this space defined as: Must allow the general public practical access to, and use of, the parking space and charging station for seven days per week, 24 hours per day. The participant is permitted to charge a parking fee and, if the location has access restrictions, may reduce the hours of public access to no less than twelve hours per day, seven days per week.
3. Light duty vehicle is defined as vehicle classes 1-2, or those vehicles <10,000 pounds. A separate pilot program is available for public medium/heavy-duty fleets that operate in Environmental Justice Communities
4. Public fleets are understood to be public transit, including school buses, and government-owned fleet

Incentives – Make Ready

Commercial Charging Infrastructure (Make-Ready) Summary

What's Eligible?



Applies to all commercial customers (Public, Workplace, MUDs, Fleets)

Incentives – Mass EVIP

Publicly Accessible

EV Charging Station Type	Incentive Amount at non-Government Owned Property ¹	Incentive Amount at Government Owned Property	Maximum Allowed Incentive Amount
Level 1 or Level 2	Up to 80% of EV charging station and installation costs	Up to 100% of EV charging station and installation costs	\$50,000 per street address

Workplace and Fleet or Multi-Unit Dwelling and Educational Campus (“MUDC”)

EV Charging Station Type	Incentive Amount	Maximum Allowed Incentive Amount
Level 1 or Level 2	Up to 60% of EV charging station equipment for <u>National Grid, Eversource and Unitil</u> program participants Up to 60% of EV charging station equipment and installation for all others	\$50,000 per street address

EVSE Project Costs (sample – indicative)

-chargepoint-



(2) Dual Port CT4021

Equipment Cost	\$23,200.00
Install Cost	\$35,000.00
Total Project Cost	\$58,200.00
Less Make Ready	-\$21,545.00
Less EVIP	-\$11,500.00
Net Estimated Project Cost	\$25,155.00

ChargePoint

Hardware - \$11,500

O&M/Warranty (5yrs) - \$5,000

Software (5yrs) - \$5,500

Station Activation - \$600

Shipping - \$600

Installer

Customer Side Installation - \$35,000

EVIP	
Total	\$11,500.00

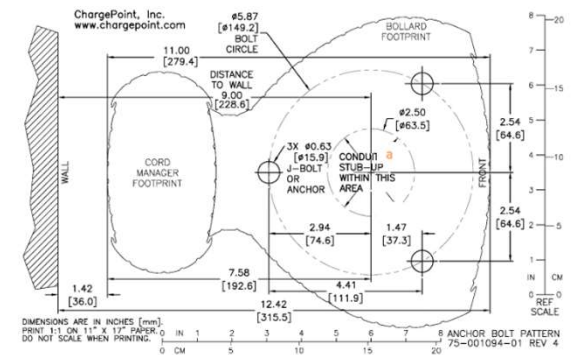
Make Ready	
Infrastructure	\$27,475.00
EVSE	\$3,650.00
Networking	\$1,920.00
Total	\$33,045.00

Charging as a Service “CaaS”

- What is it?
 - Provider develops project, finances, monetizes incentives, retains ownership of stations, O&M, “uptime guarantee”
 - Best for fleet vehicles
- What is it not (yet...)?
 - “Gas station model” for publicly accessible
 - Provider supplies/installs equipment, owns/maintains, sets rates, keeps revenue, pays lease payment to Host
 - Price/cost/usage risk

“CaaS Lite” – ChargePoint as a Service

- Lease equipment from ChargePoint
- Host preps site per CP specs, CP does “bolt down”
- Host sets rates, pays for electricity, keeps revenue
- CP does O&M
- Annual renewal
- Only available for CP6021 – beefier model than “best seller” CT4021



Product Name	Product Description	Term (Years)	Quantity	Lifetime Amount
CPAAS	ChargePoint as a Service™ subscription for CPAAS-CP6021B-50A-L5.5-1 . Includes hardware and installation, cloud software, activation, ongoing proactive monitoring, maintenance, and reporting	1	1	USD 3,540.00
				USD 3,540.00

Comparison Points

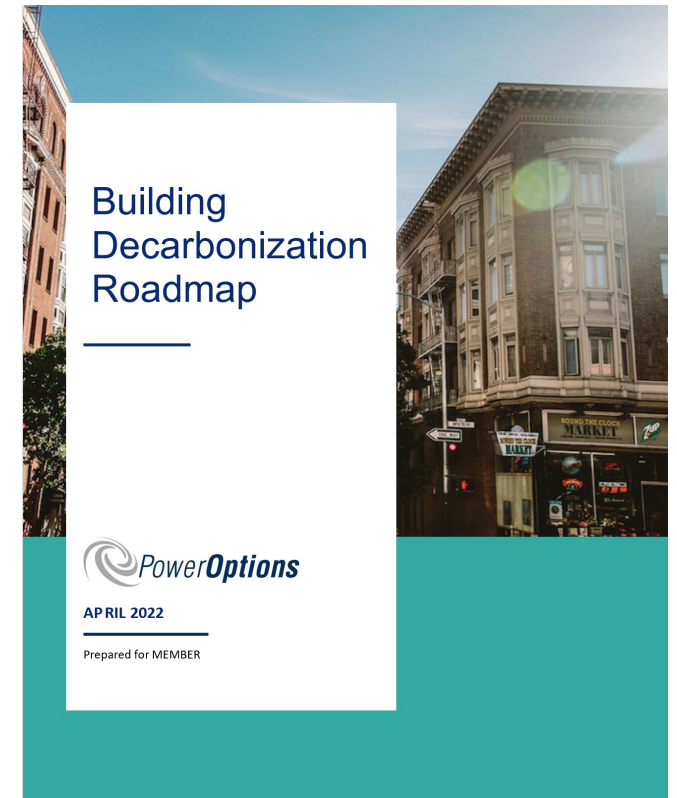
- Cost (equipment only)
 - Purchase (4021) – 5 year cost \$23,200, 10 year cost \$32,655
 - CPaaS – 5 year cost \$17,700, 10 year cost \$35,400
 - Leasing is cheaper over short term
- Risk
 - Make Ready requires 5 years – CP won't do long term contracts; renewal at "then applicable" rate
 - CP reserves right to amend agreement

Q&A

- Is there a cost difference between leasing vs ownership/ how do incentives factor in?
- At the end of a lease can the charger be removed for free? Can we enter into a new lease with another model or higher-level charger?
- Since EV charging is evolving so rapidly how can owners of chargers adapt?
- Will Chargepoint make owners pay for upgrades if the technology changes and old chargers become obsolete?
- Are there other hardware/software options that are more cost effective and easier to change/ upgrades?

Building Decarbonization: Roadmap

- **High-level** decarbonization study to help our members develop a timeline and gauge costs
- Decarbonization analysis includes:
 - Virtual energy efficiency audit
 - Virtual solar assessment
 - Electrification of all fossil-fuel based end uses (HVAC, cooking, water heating)
 - REC purchases (as needed)
- Required inputs: square footage, existing equipment types and age, and 1 year of all utility bills
- Key outputs: Capital costs, savings, incentives, financing options, avoided BERDO penalties, and GHG reduction potential for each building.



Building Decarbonization: Roadmap

Energy Efficiency

Energy efficiency (EE) refers to any upgrade to a building that reduces energy usage and, in many cases, costs. Because energy efficiency projects are cost-effective today, our roadmap recommends prioritizing it early in the roadmap to capitalize on energy savings for the remainder of the roadmap.

Based on one year of utility bills, we recommended at least the following **efficiency projects in the near-term**:

- Increase air conditioning setpoints and decrease heating setpoints
- Implement a Building Automation System and reduce HVAC equipment schedules
- Reduce lighting and plug loads
- Upgrade windows
- Convert to a heat pump water heater

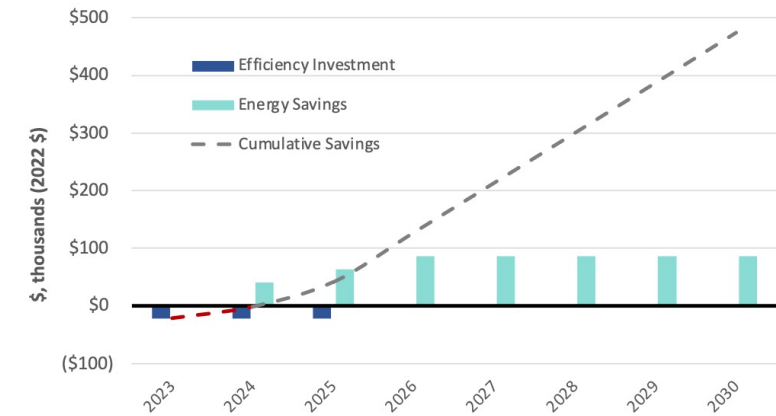
Energy Efficiency Impacts

Investment: \$330k | Incentives: \$260k
Net cost: \$65k

Year 1 Savings: \$20k
Annual Savings after Completion: \$70k
Payback: 2 years

Massachusetts offers strong incentives for commercial customers to implement certain energy efficiency projects. As a result, the up-front cost of efficiency projects is reduced by over 80 percent and the **payback period is about 2 years**. Relative to operating “business as usual,” [redacted] will **save about \$70,000 annually on energy costs** by implementing efficiency projects (Figure 2).

Figure 2. Net savings from implementing energy efficiency projects, 2023-2050.



Solar and RECs

PowerOptions evaluated the [redacted] options for on-site and off-site (remote) solar PV. Due to the location of the building, and size and age of the roof, we recommend installing a 24 kW on-site solar system as soon as 2024. The upfront cost of the project is about \$70,000, and the net cost after incentives would be about \$50,000. The system will produce almost 32,000 kWh of electricity annually, saving [redacted] **over \$130,000 in electricity costs and 130 metric tons of CO₂e through 2050**.

Solar Impacts

Investment: \$70k | Incentives: \$20k
Net cost: \$50k

On-site Solar Payback: 8 years
CO₂e reduced: 130 metric tons by 2050

Figure 3. Location of on-site solar system at [redacted] developed through HeliScope.



Electrification

Heat pumps are an efficient all-electric solution for a building’s space heating and cooling needs. Heat pumps work similarly to an air conditioner, but they are more efficient and provide heating in the winter by operating in reverse. In contrast to fossil fuel heating equipment that has an efficiency of 80-95%, heat pumps have an efficiency ranging from 250% to 400%, meaning they produce more energy than is put into them. There are many different types of air source heat pumps that vary in cost and efficiency, including variable refrigerant flow (VRF) heat pumps and packaged heat pumps. For most existing heating systems, there is an economical heat pump replacement option within the next decade.

Given that the [redacted] building is heated with district steam, our recommendation is to replace the existing steam distribution system with VRF heat pumps because they are a great option for the [redacted] climate control needs. VRF heat pumps are unique in that they can

Electrification Impacts

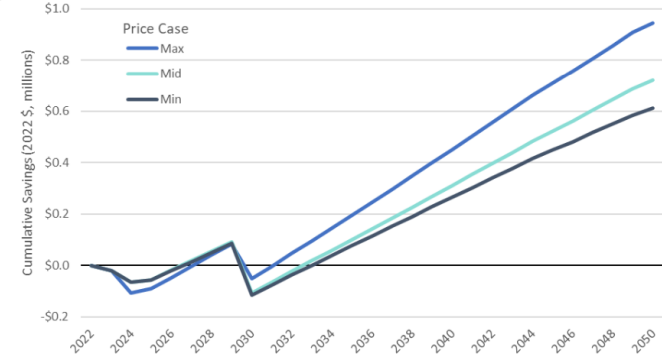
Investment: \$290k – \$400k
Incentives: \$140k
Net cost: \$146k – \$260k
Efficiency + Electrification Payback: 5 years

CO₂e reduced: 2,000 metric tons by 2050

Financial Impact

After incentives, the total investment required to execute this roadmap is \$360,000. Of the possible ways to decarbonize the [redacted] building, we believe this is the most cost-effective way. Depending on future energy prices, **they are expected to save between \$0.6 and \$1 million by 2050** (Figure 4).

Figure 4. Cumulative savings from Decarbonization Scenario, by price case.



Building Decarbonization: Implementation

- All PowerOptions Members get free implementation support through our pre-existing programs (energy efficiency, solar + storage, clean electricity procurement)
- PowerOptions plans to have a program for our Members to be able to install heat pumps cost-effectively, ideally using our unique procurement abilities to provide our Members with novel financing for heat pumps (energy as a service).

Roadmap Timeline

The overarching roadmap timeline is shown below for the [REDACTED] building. Note that the years below are calendar years (to align with the City of Boston's BERDO measurement cycle), not fiscal years.

2023

- Energy efficiency audit
- Reduce heating setpoints, increase AC setpoints, reduce plug loads, reduce lighting load
- Get quotes for onsite solar

2024

- Onsite solar installation

2029

- Get quotes for building automation system, heat pumps, and window upgrade

2030

- Installation of heat pumps and building automation system
- Upgrade windows

2040-2050

- Purchase renewable energy certifications (RECs) to offset electricity emissions and avoid BERDO penalties