



# City of Cambridge Incentives & Programs

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Energy Planner



Cambridge Energy Alliance  
Community Development Department



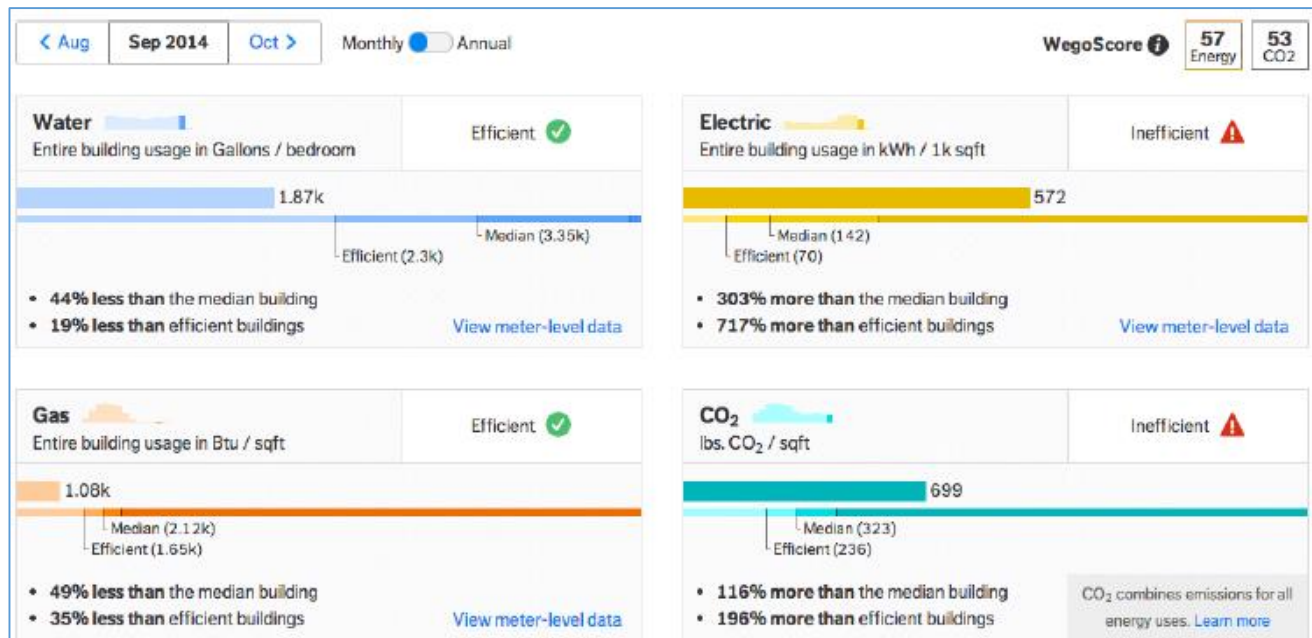
# Energy Efficiency in Cambridge

- Created Cambridge Energy Alliance in 2007
  - Programs to help people get home energy assessments, solar, heat pumps, and LEDs
- Net Zero Action Plan, adopted 2015
  - Zero greenhouse gas emissions by midcentury
  - Helping buildings become more energy efficient is a key part of this plan
- Partnerships with Eversource, MassSave, and stakeholders on energy efficiency



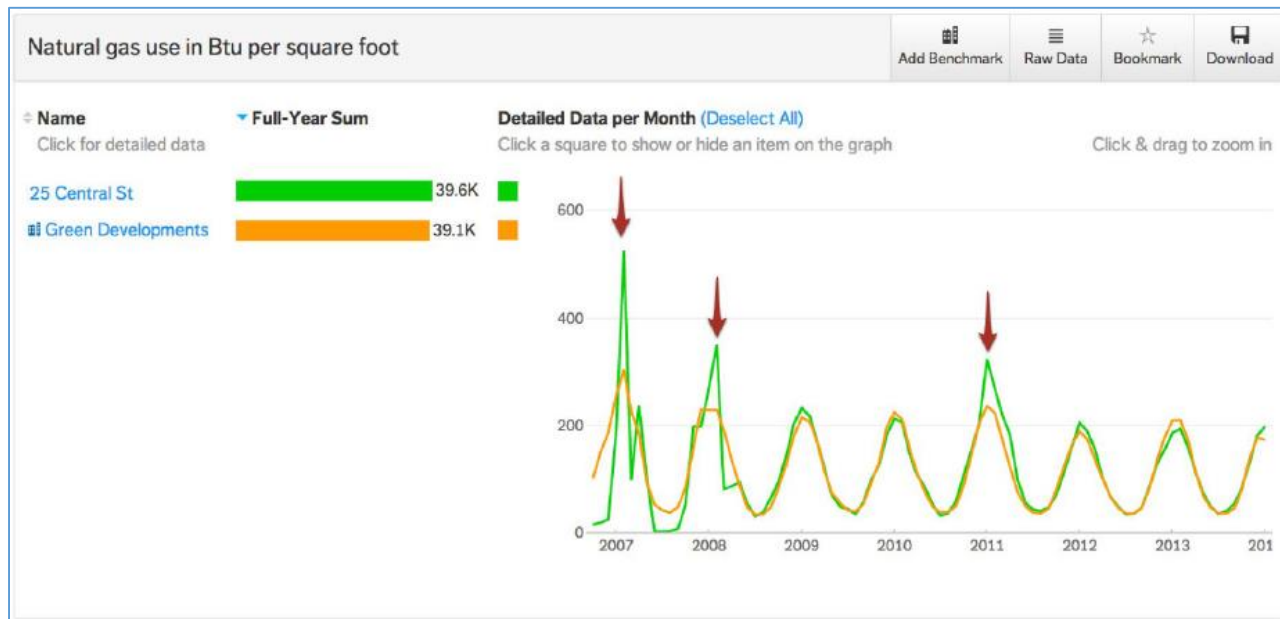
# Free WegoWise Pilot Program

- An easy-to-use management tool for building utilities
- Dashboard to understand energy performance and analytics



# Free WegoWise Pilot Program

- Understand performance before and after retrofits
- Reports to identify spikes
- Identify savings opportunities



# Free WegoWise Pilot Program

- One free year of WegoWise Premium sponsored by the City of Cambridge
- Support from WegoWise to get started and check-in regularly about retrofit opportunities
- First-come first-served program
  - Enrolled Cambridge buildings include 15-unit condo up to 400-unit apartment
  - Encompasses over 1,800 units so far

# Cambridge-Eversource Multifamily Pilot

- New streamlined program launching this month
- Receive energy efficiency assessment in conjunction with solar assessment and quotes
- Multifamily Solar Advisor to guide decisionmaking on solar (sizing a system, metering, etc.)



# Thank You

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*Solar Design, Consultation & Contracting*

# ZAPOTEC ENERGY INC.

HARNESS THE POWER OF THE SUN





# ZAPOTEC'S ROLE

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Zapotec Energy Inc. has been hired by the City of Cambridge to be a **Solar Advisor** for multifamily homes, apartments and condominiums.





# OUR SERVICES

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- Create a solar model
- Provide preliminary cost estimate
- Determine decision-making process
- Seek solar quotes via EnergySage
- Facilitate correspondence with installers
- Advise on next steps



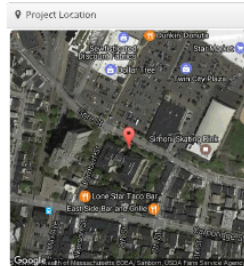
# FEASIBILITY

## HelioScope Annual Production Report produced by Aaron King

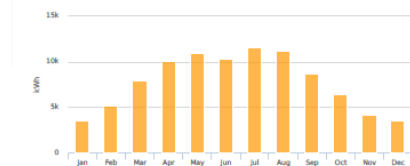
### Design 1 Sunny Cambridge - 53

Report
Project Name
Project Address
Prepared By

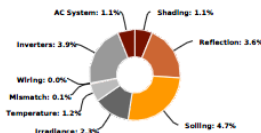
System Metrics
Design
Module DC Nameplate
Inverter AC Nameplate
Annual Production
Performance Ratio
kWh/Wp
Weather Dataset
Simulator Version



### Monthly Production



### Sources of System Loss



### Annual Production

Description	Output	% Delta
Annual Global Horizontal Irradiance	1,423.3	0.0%
Adjusted Global Horizontal Irradiance	1,423.3	0.0%
POA Irradiance	1,522.1	6.9%
Shaded Irradiance	1,565.0	-1.1%
Irradiance after Reflection	1,431.2	-3.6%
Irradiance after Soiling	1,382.5	-4.7%
<b>Total Collector Irradiance</b>	<b>1,382.5</b>	<b>0.0%</b>
Nameplate	101,115.0	
Output at Irradiance Levels	99,349.2	-2.3%
Output at Cell Temperature Range	98,384.5	-1.2%
Output After Mismatch	98,336.0	-0.1%
Optimal DC Output	98,336.0	0.0%
Constrained DC Output	95,849.5	0.0%
Inverter Output	94,690.3	-3.7%
<b>Energy to Grid</b>	<b>93,450.3</b>	<b>-1.1%</b>

### Condition Set

Description	Condition Set 1												
Weather Dataset	TM1, 10km grid (42.35-71.03), NREL (prospector)												
Solar Angle Location	Project Lat/Lng												
Transposition Model	Perez Model												
Temperature Model	Sandia Model												
	Rack Type		a		b		Temperature Delta						
	Fixed Tilt		-3.55		-0.075		3°C						
	Roof Mount		-3.51		-0.045		0°C						
	Duct Tilt		-3.55		-0.075		3°C						
Temperature Model Parameters	Copper		-3.55		-0.075		3°C						
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D	
	25	20	5	2	2	2	2	2	2	2	5	8	
Irradiation Variance	5%												
Cell Temperature Spread	4°C												
Module Shading Range	-2.5% to 2.5%												
AC System Derate	0.50%												
Module Characterizations	Module						Characterization						
	Sunmodule Plus SW 285 (Solarmodule)						Default Characterization, PAN						
Component Characterizations	Device						Characterization						
	M750 (40V) (Single)						CEC						

## HelioScope Annual Production Report produced by Aaron King

Component	Name	Count
Inverters	M50 (240V) (Enphase)	256 (61.4 kW)
AC Panels	3 Input AC Panel	1
AC Panels	9 Input AC Panel	2
AC Home Runs	360 MCM (Copper)	\$ (1,345.2 ft)
AC Branches	10 AWG (Copper)	26 (8,203.9 ft)
Modules	Solarmodule, Sunmodule Plus SW 285 (555W)	256 (73.0 kW)

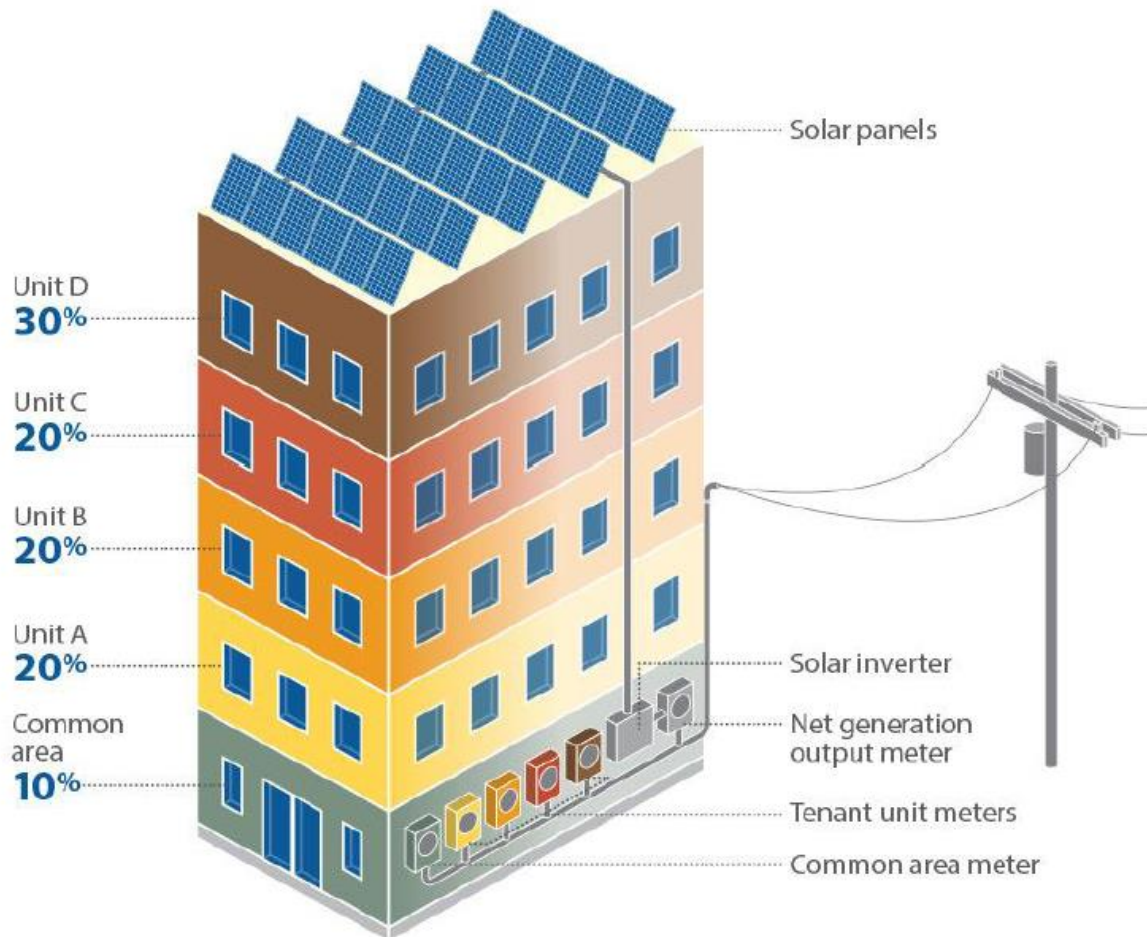
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	1-1	Along Building

Description	Racking	Orientation	Tilt	Azimuth	Intracrow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Horizontal (Landscape)	10°	296.051°	1.6 ft	1x1	52	52	14.7 kW
Field Segment 2	Fixed Tilt	Horizontal (Landscape)	10°	113.528°	1.6 ft	1x1	63	63	18.0 kW
Field Segment 3	Fixed Tilt	Horizontal (Landscape)	10°	295.535°	1.6 ft	1x1	54	54	15.4 kW
Field Segment 4	Fixed Tilt	Horizontal (Landscape)	10°	205.535°	1.6 ft	1x1	26	26	7.41 kW
Field Segment 5	Fixed Tilt	Horizontal (Landscape)	10°	190.028°	1.6 ft	1x1	61	61	17.4 kW

### Detailed Layout



# NET METERING





*Contact us today:*

# QUESTIONS?

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