

# Decarbonization Strategy

## San Mateo County Community College District

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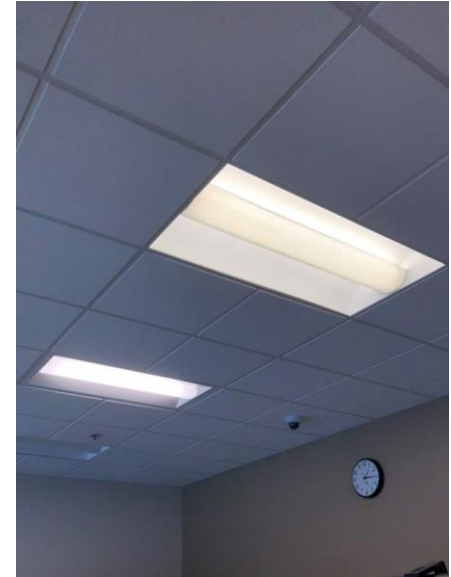
SMCCCD Sustainability

# As of November '19

	Campus Acreage	Gross Square Feet	Assignable Square Footage	Buildings	Parking	Student Headcount	Student FTEs	Full-Time & Part-Time Faculty & Staff
Cañada College	124	318,255	210,950	28	1,688	6,380	1,541	399
College of San Mateo	150	707,837	482,699	38	4,108	8,866	2,741	642
Skyline College	102	540,538	340,048	33	2,495	9,360	3,008	643
District Office	N/A	24,929	15,832	1	Incl. in CSM	N/A	N/A	165
<b>TOTAL</b>	<b>376</b>	<b>1,591,559</b>	<b>1,049,529</b>	<b>100</b>	<b>8,291</b>	<b>24,606</b>	<b>7,290</b>	<b>1,849</b>

# SMCCCD Assets Portfolio

- Interior Environment
  - 100 buildings with 1.6M GSF
    - ~335 general lecture classrooms
    - ~169 labs
    - ~760 offices/administrative spaces
  - 100 roofs
  - 47 elevators
  - 3,820 interior and exterior doors
  - 12,220+ windows
  - 576+ pieces of mechanical equipment (air handlers, pumps, boilers, chillers, fans, transformers)
  - 19,050+ interior lights
  - 242+ restrooms (with multiple sinks, toilets, urinals in each)



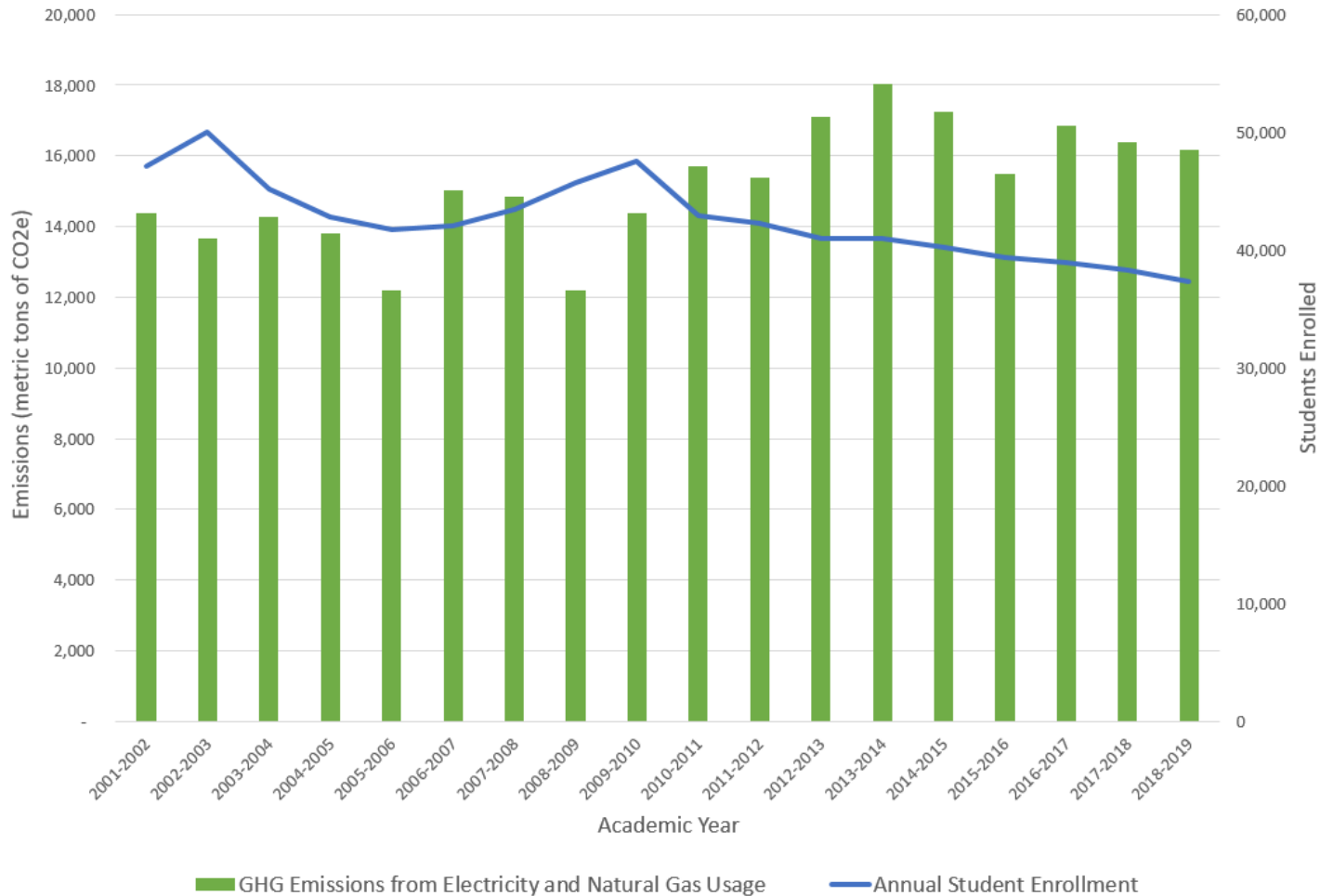
# SMCCCD Assets Portfolio

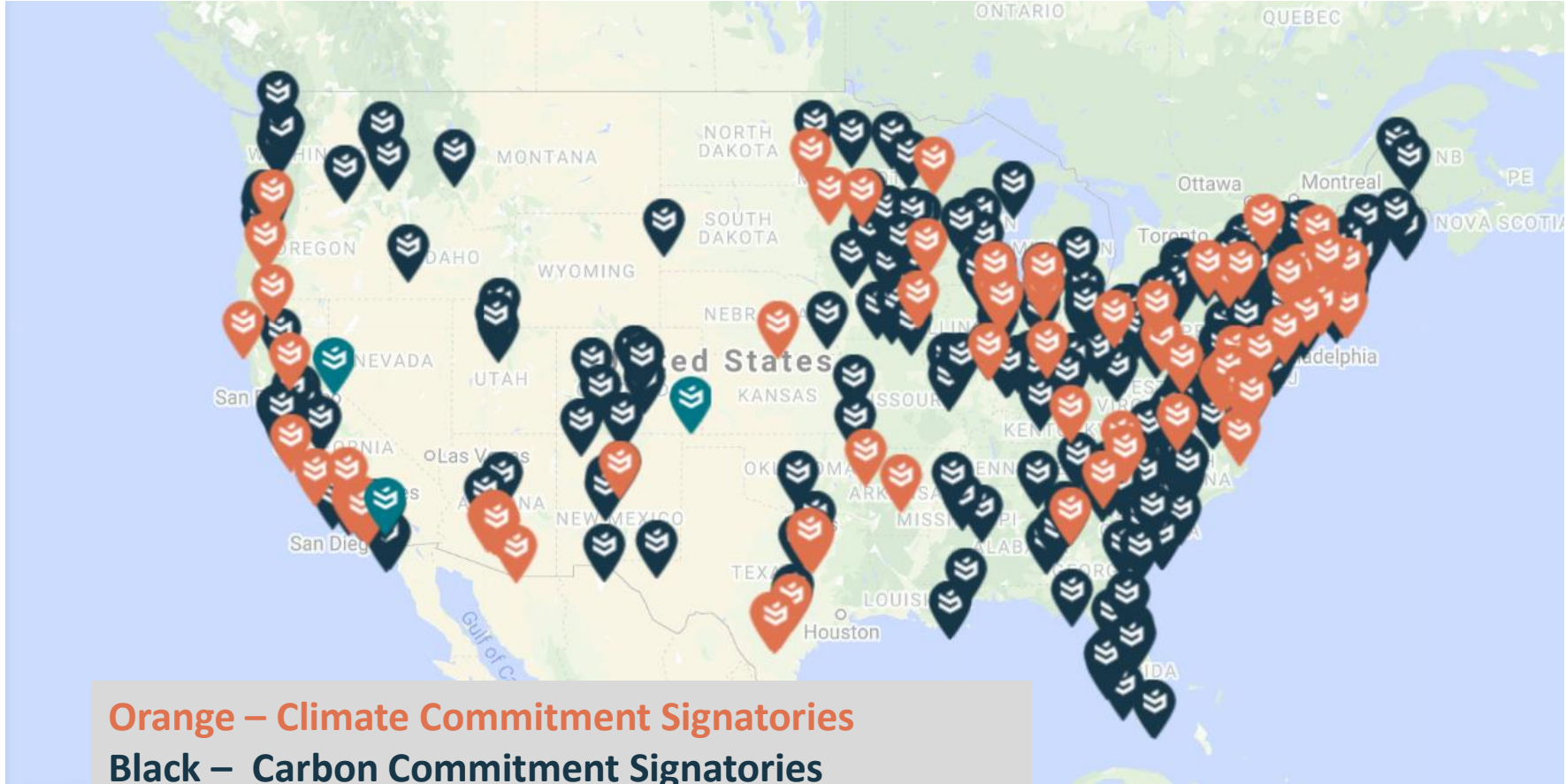
- Exterior Environment

- 3 campuses totaling 376 acres
  - 144 acres are actively maintained
- 65 parking lots, 8,291 parking spaces, with associated wheel stops, striping and pavement markings
- 7.6 miles of roadway
- 48+ miles of underground pipeline (for electrical, communications, sanitary and storm drain, water supply, gas, irrigation)
- over 3,000 exterior light fixtures
- 10 sports fields (8 synthetic) and 2 tracks
- 38.1 landscaped acres
- 22 tennis courts
- 2 swimming pools & 7 fountains
- DW Rolling Stock: 183 (Facilities 124, Public Safety 11)



# Emissions v.s. Student Enrollment






**Orange – Climate Commitment Signatories**  
**Black – Carbon Commitment Signatories**  
**Blue – Resilience Commitment Signatories**

# Why Decarbonize?

## Sonoma County assessing economic impact of PG&E power shut-off

HStu  
Wildf

abc 7 By M  
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# ZNE by 2030



Interior LED Lighting  
Upgrade Project  
Advanced Plug Load  
Control Project



Cañada Solar Array

# Achieving Decarbonization



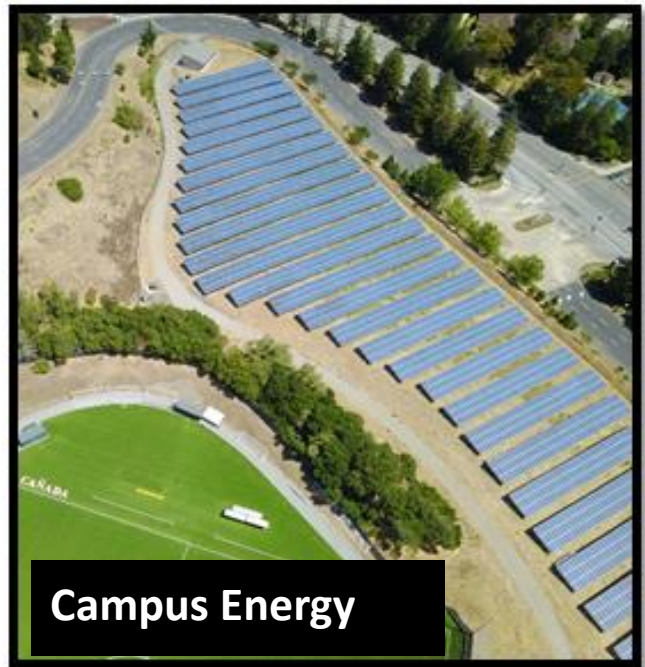
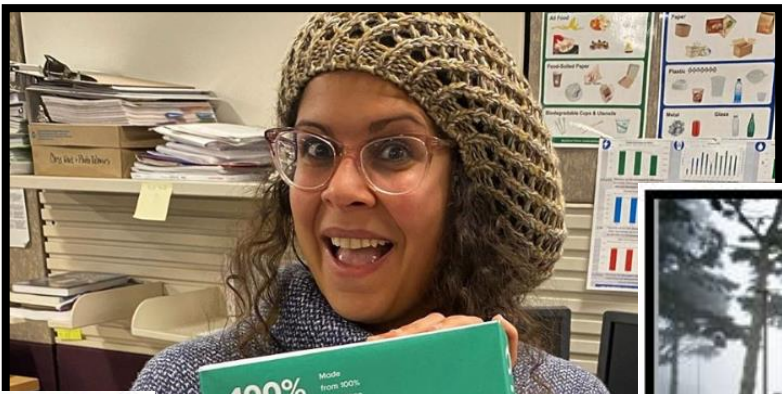
OPTIMIZE

ELECTRIFY

DECARBONIZE

Scope 1 (direct sources on site)	Scope 2 (indirect sources consumed by site)	Scope 3 (indirect sources as part of site activities)
Natural Gas	Electricity	Waste
Fleet Vehicles		Student/Employee Commuting
Gas/Diesel Fueled Equipment		Business Travel
Refrigerants		Purchased Goods
Fertilizers		Electricity (T&D)

# Supply Chain

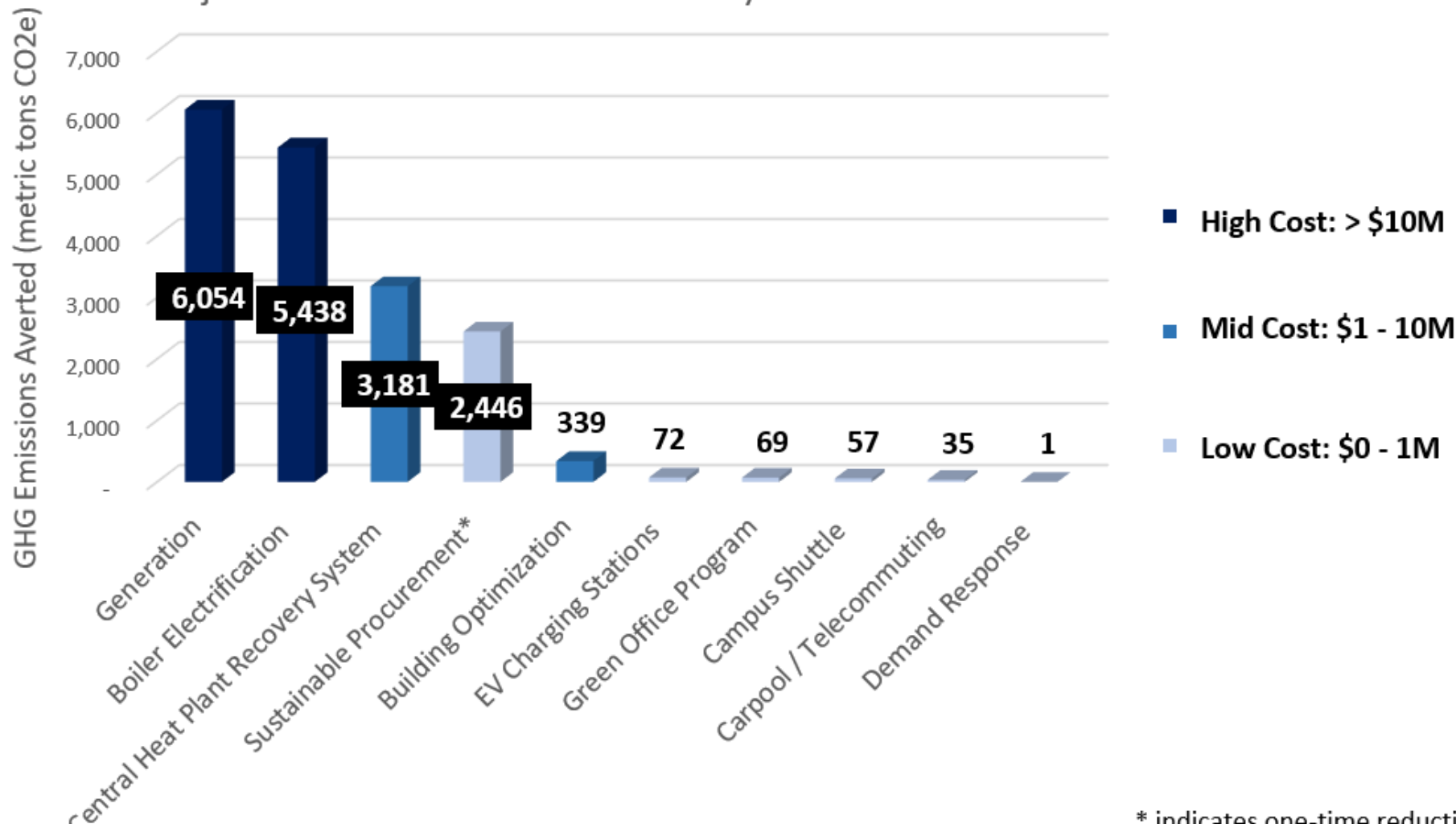


Campus Energy



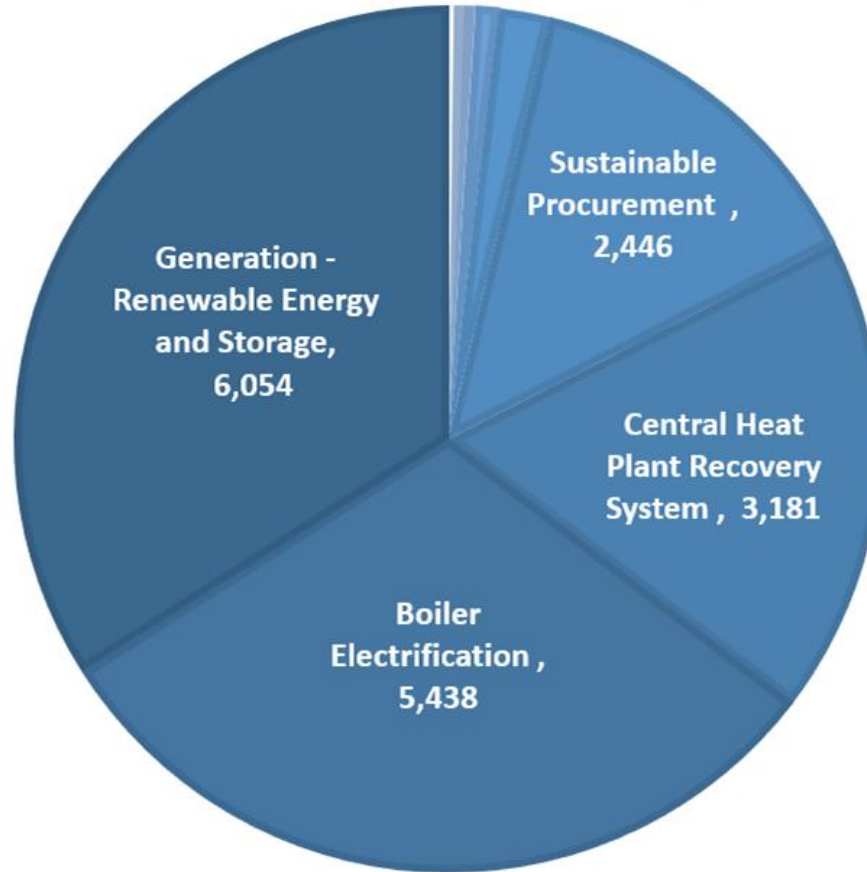
Building Energy

# Projected GHG Emissions Reductions by Decarbonization Measure



# Large-Impact Decarbonization Measures

ANNUAL GHG EMISSIONS SAVINGS (METRIC TONS OF CO2E)



# Generation – Renewable Energy and Storage

Emissions Reduced: **6,054 tons of CO<sub>2</sub>e**

Cost Projections: **~ \$24M**



# Boiler Electrification

Emissions Reduced: **5,438 tons of CO<sub>2</sub>e**

Cost Projections: **~ \$25M**

Electric resistance boilers in comparison to gas-fired boilers:

- Higher operating efficiency
- Lower installation costs
- Lower maintenance needs and costs
- Higher operating costs
- Increased safety



# Boiler Electrification

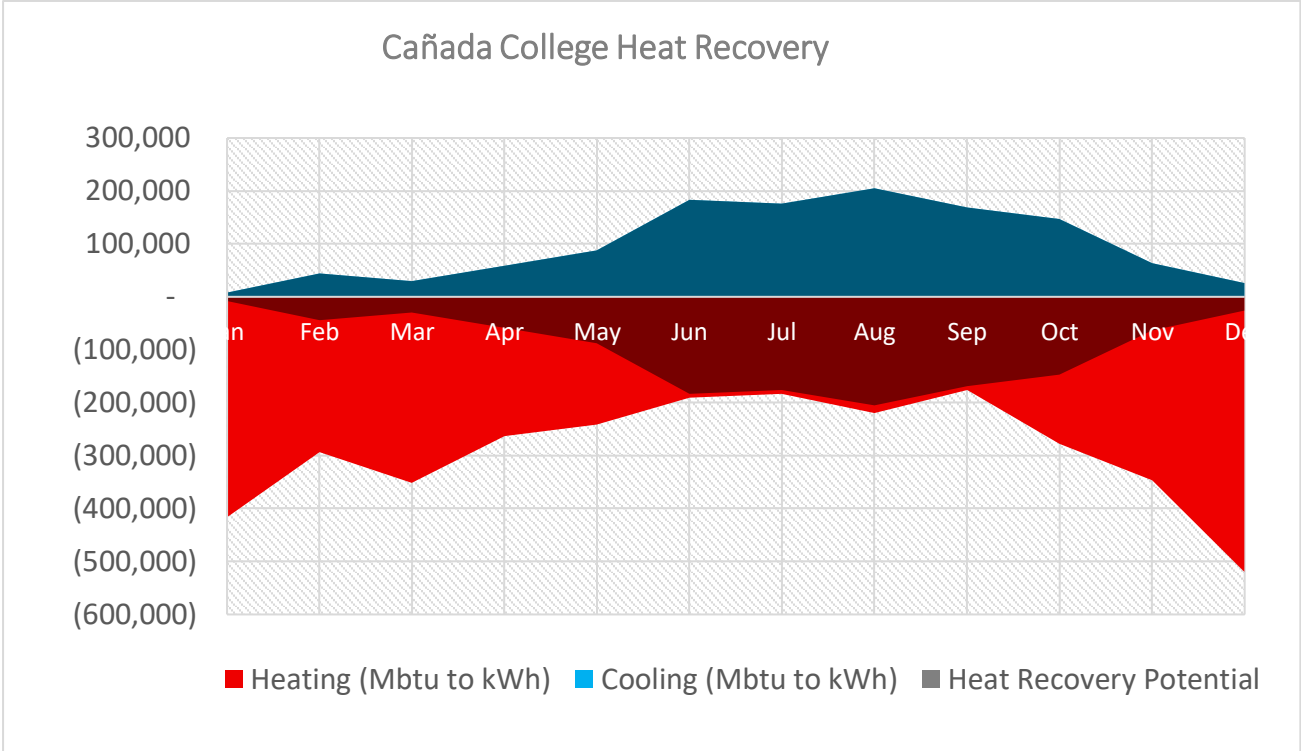


2010 San Bruno pipeline explosion

# Central Heat Plant Recovery System

Emissions Reduced: **3,181 tons of CO<sub>2</sub>e**

Cost Projections: **~ \$1-9M**




# Sustainable Procurement

Emissions Reduced: **2,446 tons of CO<sub>2</sub>e**

Cost Projections: **\$0**

**CURRENT ITEM**




**HP 80A Black Toner Cartridge (CF280A)**  
Item # 385702

Your Price: **\$80.48** /each  
Qty.: 1



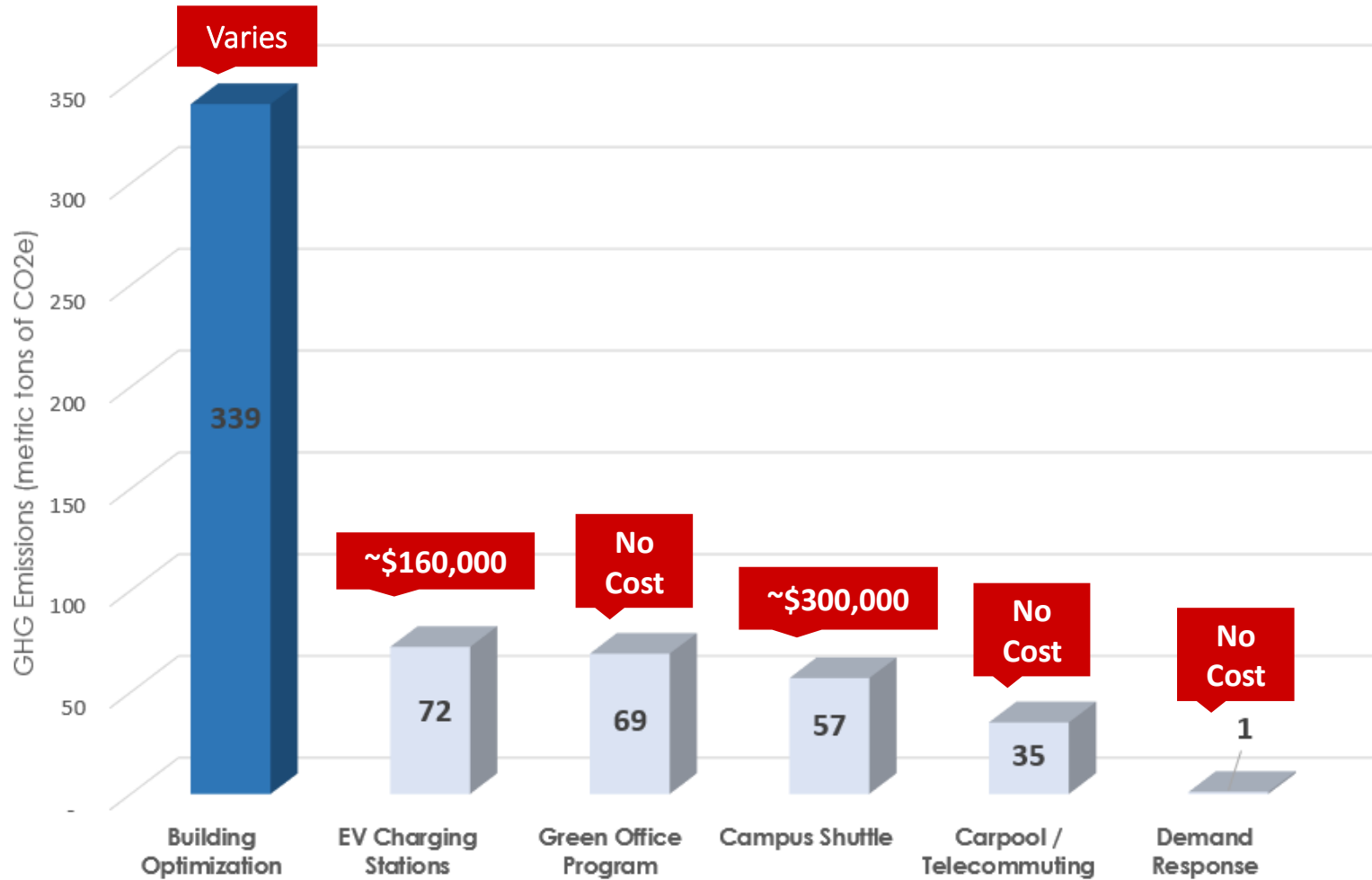
**GREENER ALTERNATIVE**



**Office Depot® Brand OD80A Remanufactured Toner Cartridge Replacement For HP 80A Black**  
Item # 106778

Your Price: **\$32.05** /each  
 Choose this item.

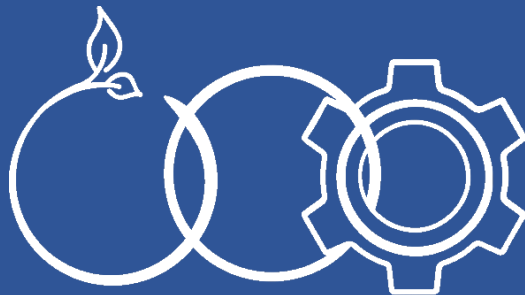
# Projected Emission Reductions by Decarbonization Measure



# Decarbonization Process



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SMCCCD Sustainability

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