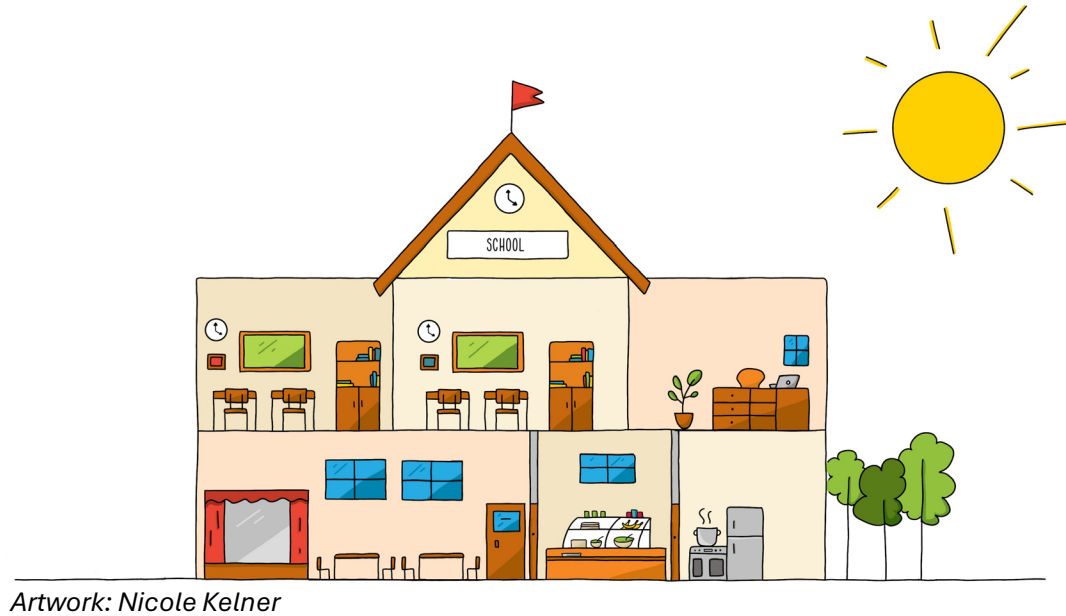


# Flipping the Switch

## Helping Schools Achieve Clean Energy Goals



Artwork: Nicole Kelner

# Let's Help Keep Students Safe!

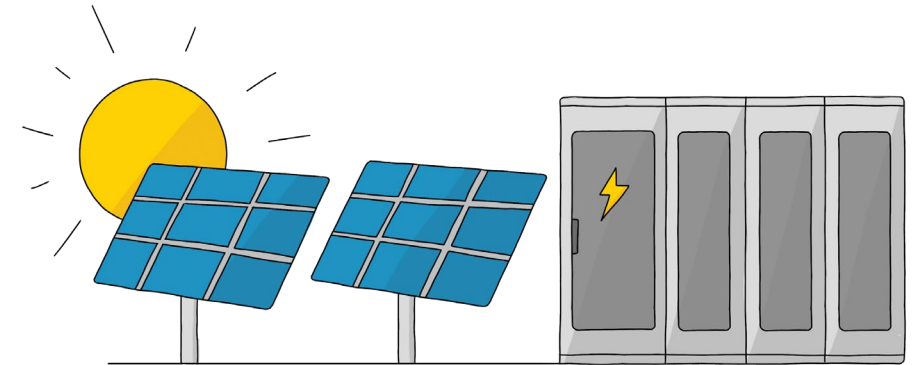


## Safety Tips for a Smooth Start to the School Year:

- ◆ **Watch for School Zones:** Slow down and stay alert—especially near crosswalks and bus stops.
- ◆ **Drive Carefully Around Buses:** Never pass a stopped school bus with flashing lights. Children may be crossing.
- ◆ **Backpack Safety:** Ensure backpacks are not too heavy and fit properly to avoid strain.
- ◆ **Emergency Contacts:** Update your child's emergency contact info and review safety plans.
- ◆ **Mental Health Matters:** Check in with students emotionally—new school years can bring stress.
- ◆ **Online Safety:** Remind kids about safe internet use and protecting personal information.

# Quick House Keeping

- Remember to stay muted and cameras off! You can turn on during live Q&A.
- Please use the Q&A function for questions.
- Feel free to chat and let us know where you are from!
- Slides and recording will be shared shortly after the presentation.
- Please fill out the survey in the follow up email to let us know how we can improve for the October 8<sup>th</sup> event.



# AGENDA

---

- ❑ Intros and Kick-off (10 min)
- ❑ SCE Foodservice Technology Center (15 min)
- ❑ School District Case Study #1 – Santa Barbara Unified School District (10 min)
- ❑ SCE School Transportation Electrification Advisory Services (15 min)
- ❑ School District Case Study #2 – Orange Unified School District (10 min)
- ❑ School Electrification Funding and Resources (10 min)
- ❑ Q&A (15 min)

# Today's Presenters



**Amy Discher**  
Sr. Advisor, Reach Codes,  
SCE



**Andre Saldivar**  
Sr. Engineer, Food Technology,  
SCE



**Desmond Ho**  
Operations & Sustainability  
Coordinator, SBUSD



**Ramiro Lepe**  
Sr. Advisor, Transportation  
Electrification, SCE



**Christina Celeste-Russo**  
Director of Transportation,  
Orange USD



**Omar Dena**  
Transportation Manager, Orange  
USD



**Reilly Loveland**  
Associate Director,  
New Buildings Institute

# Quick Level Set

Energy for What's Ahead<sup>SM</sup>



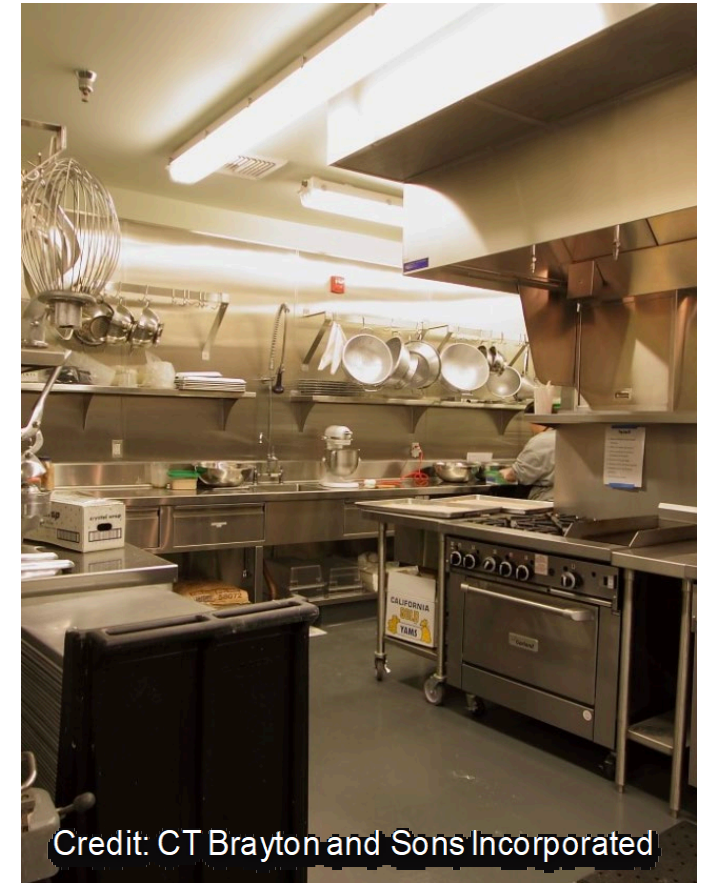
The average age of our public school infrastructure in California is 49 years old.



ASCE's 2021 Report Card for America's Infrastructure assessed schools with a **D+ grade** and estimated that the investment needed between 2021 and 2029 to modernize and maintain the nation's schools is at least **\$370 billion.**

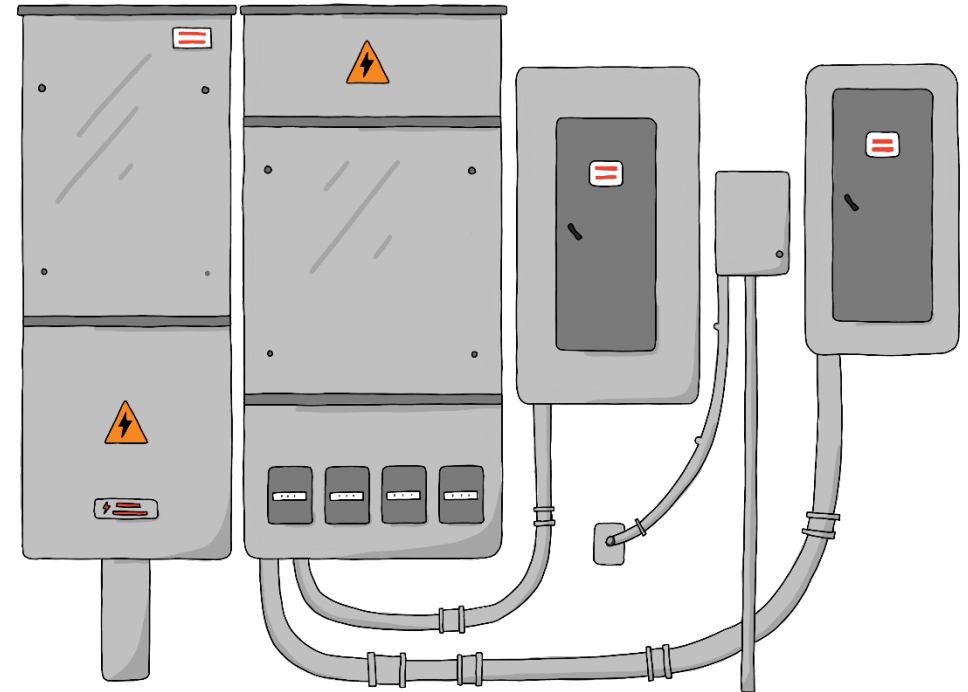
# Fuel Choice Greatly Impacts Costs, Health and Carbon Emissions

Gas-powered equipment is common for space heating in the United States. Gas is also burned for water heating and in **kitchens**.



# Electrification – a VERY important strategy

- To address *failing systems, climate adaptation, and rising costs.*
- However! Electrification is not always guaranteed to be beneficial or cost less.
- The approach matters and is influenced by many factors:
  - timing,
  - improvements to adjacent systems,
  - and/or occupant/facilities manager buy-in
  - .... **and other barriers**



Artwork by Nicole Kelner

# Major building elements



**Onsite energy  
generation  
and storage**

## **Building systems**

- HVAC
- Water heating
- Lighting
- Kitchen equipment
- Electrical systems
- Plug and process loads
- Controls

## **Building Envelope**

- Roofs and walls
- Foundation
- Windows and doors

# Major building elements

## Onsite energy generation and storage

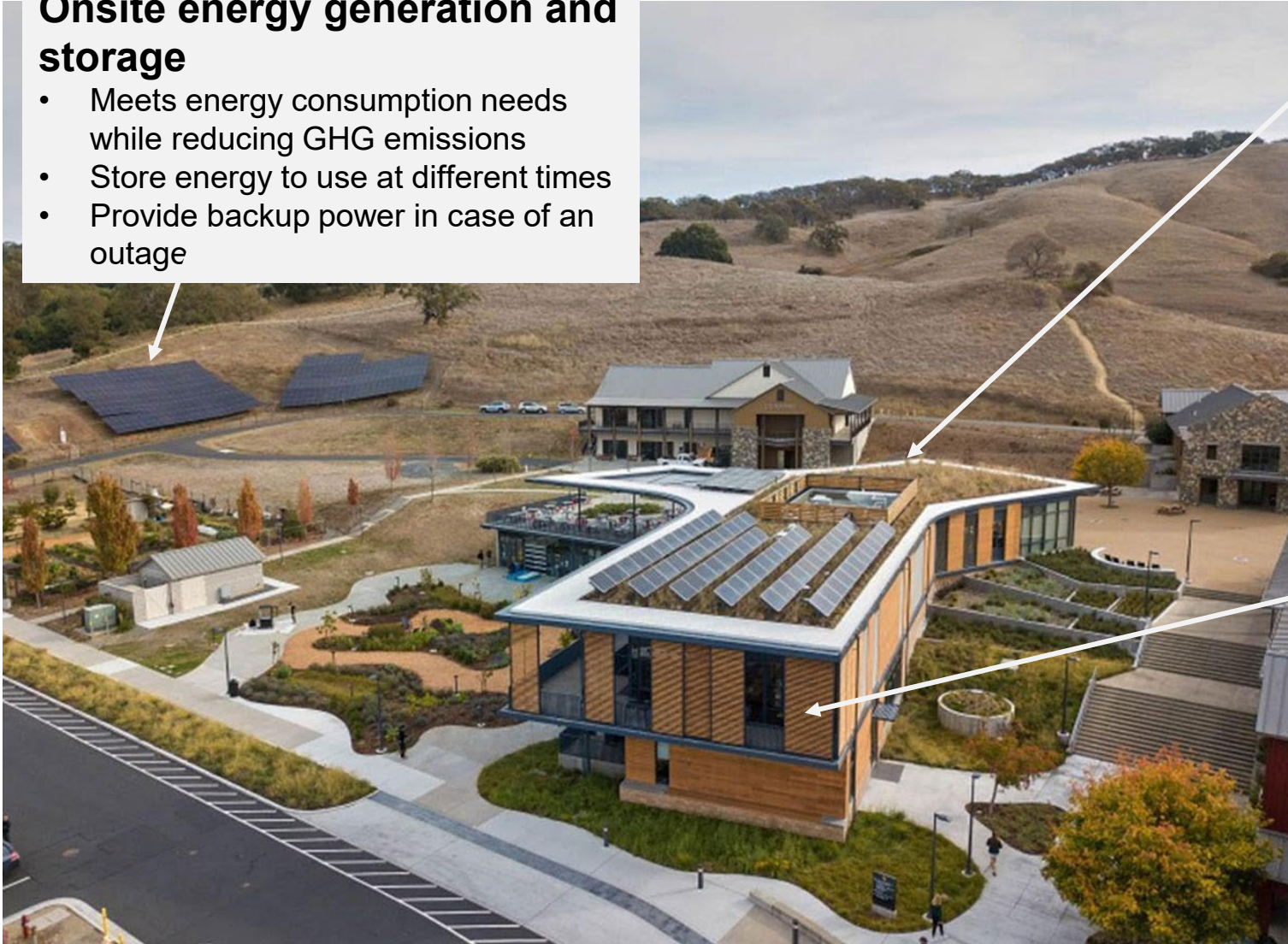
- Meets energy consumption needs while reducing GHG emissions
- Store energy to use at different times
- Provide backup power in case of an outage

## Building systems

- Defines the magnitude of total energy consumption and GHG emissions

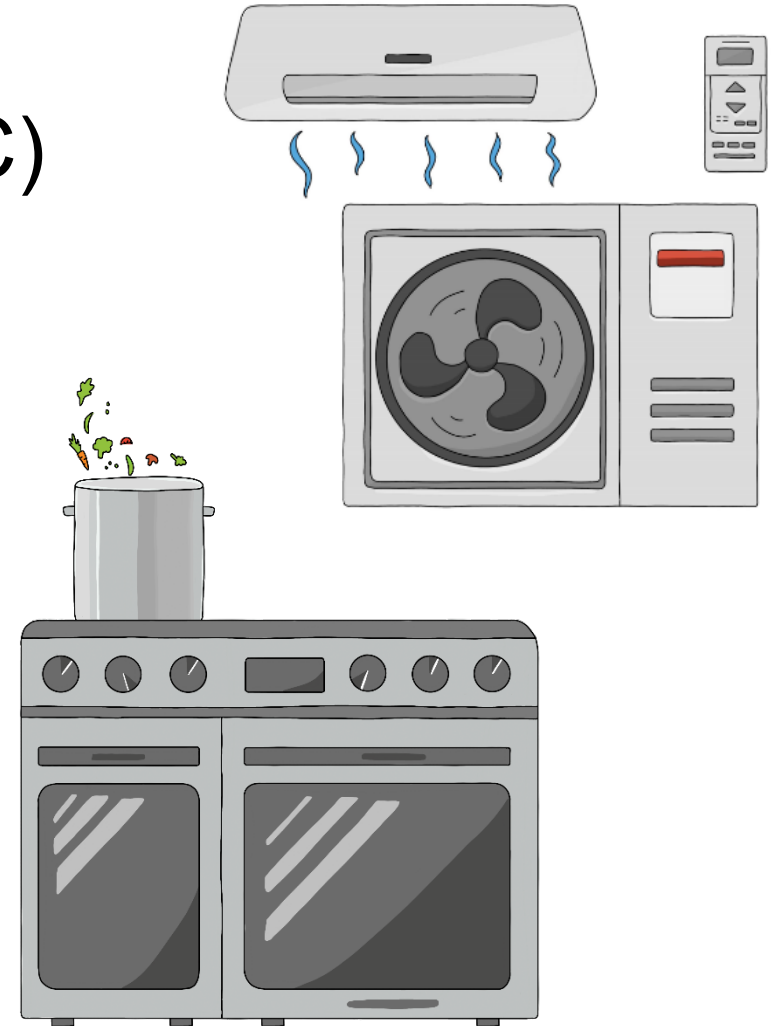
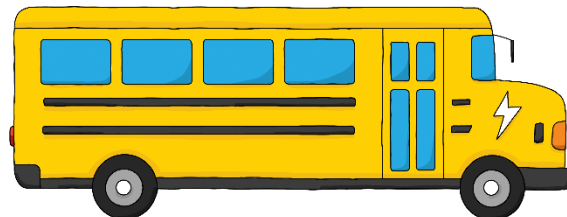
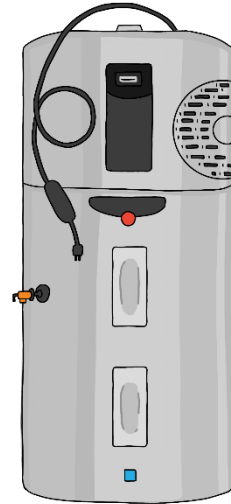
## Building Envelope

- Passively impacts building system energy consumption



# Electrification Technologies in Schools

- Space conditioning and ventilation (HVAC)
- Water heating
- Kitchens and cooking
- Laundry
- Transportation



# Flipping the Switch - Helping Schools Achieve Clean Energy Goals

Andre Saldivar  
Foodservice Technology Center (FTC)  
SCE

# WHY ELECTRIC

- More EFFICIENT
- Faster
- Safer
- Flexible
- Plug & Play
- Up Front Co\$t is less on most products
- Less Parts
- Cooler Kitchen
- Easier to Clean
- NO HOOD REQUIRED
- Less Space
- Less Ventilation



# WHY INDUCTION

## **Benefits of Induction:**

**Fast**

**Flexible**

**Modular**

**Efficient**

**Controllable**

**Safer**

**Easier to Clean**

**Lower Ambient Heat Gain**

# WHY INDUCTION



# Induction Warming Considerations

Benefits of specifying induction serving systems include:

- Allows food to be held at precise temperatures
- Available in a square or round drop-in design
- No water lines or drains required
- Reheat and hold functions
- Pan Compensation
- Automatic stir notification and timer
- Dry pan detection
- Less heat to space
- Less labor associated with cleaning wells and crusted pans
- Safer than traditional warmers



# Holding Well Replacement

- Standard Steam Holding Wells
  - Water based
  - Inconsistent Holding Temps
  - Food Quality issues
  - Safety Hazard (Hot to Touch)

## Design & Engineering Services

### INDUCTION WELL FOR FOODSERVICE APPLICATIONS

ET10SCE1430 Report



Prepared by:

Design & Engineering Services  
Customer Service Business Unit  
Southern California Edison

September 2011

#### What's Inside...

Introduction .....	1
Assessment Objectives .....	1
Product Assessed.....	1
Test Methodology .....	2
Results.....	2
Conclusion .....	3
Recommendation.....	3

- INDUCTION “Dry” Holding Wells
  - Only ON when activated
  - Very Precise Holding Temp
  - Dry Well vs Wet Well

	DEMAND (KW)	TOTAL ENERGY CONSUMPTION (KWH/YR)
Baseline – Steam Wells	2.09	10,599
Induction Wells	1.11	5,102
Reduction/Savings	0.98	5,497

# ELECTRIC/INDUCTION OPTIONS?

- What about Back of the House cooking?

## HEAVY DUTY



Ranges



Stock Pot Range



Plancha



Induction Griddle



Induction Braising Pan



Induction Quad Cooktops with Convection Oven Base



Induction Quad Cooktops with Storage Base



Induction Dual Cooktops with Storage Base

# ELECTRIC/INDUCTION OPTIONS?

- What about Back of the House cooking?



VS



Gas Range



Energy Star Electric Cooktop  
Specification



# ELECTRIC/INDUCTION OPTIONS?

- What about Back of the House cooking?



VS



Gas Stock Pot Burner

# ELECTRIC/INDUCTION OPTIONS?

- What about Back of the House cooking?



VS



# Electric Cooking

## VENTLESS ADVANTAGE



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TABLE 2 Type II Hood Requirements by Appliance Description

Appliance Description	
Cabinet, holding, electric	A
Cabinet, proofing, electric	A
Cheese-melter, electric	A
Coffee maker, electric	A
Cooktop, induction, electric	A
Dishwasher, door-type rack, hot water sanitizing, heat recovery and vapor reduction, electric	A
Dishwasher, door-type rack, chemical sanitizing, heat recovery and vapor reduction, electric	A
Dishwasher, door-type dump and fill, hot water sanitizing, electric	A
Dishwasher, door-type dump and fill, chemical sanitizing, electric	A
Dishwasher, pot and pan, hot water sanitizing, heat recovery and vapor reduction, electric	A
Dishwasher, powered sink, electric	A
Dishwasher, under-counter, chemical sanitizing, electric	A
Dishwasher, under-counter, electric	A
Dishwasher, undercounter, hot water sanitizing, heat recovery and vapor reduction, electric	A
Drawer warmer, 2 drawer, electric	A
Egg cooker, electric	A
Espresso machine, electric	A
Grill, panini, electric	A
Hot dog cooker, electric	A
Hot plate, countertop, electric	A
Ovens, microwave, electric	A
Popcorn machine, electric	A
Rebthermalizer, electric	A
Rice cooker, electric	A
Steam table, electric	A
Steamers, bun, electric	A
Steamer, compartment atmospheric, countertop, electric	A
Steamer, compartment pressurized, countertop, electric	A
Table, hot food, electric	A
Toaster, electric	A
Waffle iron, electric	A
Kettle, steam jacketed, tabletop, electric, gas and direct steam	C
Oven, convection, half-size, electric and gas (non-protein cooking)	B
Pasta cooker, electric	A
Rebthermalizer, gas	A

a. Where hoods are not required, the additional heat and moisture loads generated by such appliances are not required.  
b. Where recirculating system or recirculating hoods are used, the additional heat and moisture loads for the HVAC system.

8

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SYR  
BUILDING ENERGY AND ENV  
263 Link Hall, Syracuse Univ

ASHRAE  
Countertop C

Submitted to American Society of

Meng Kong, Res

Jianshun

KwangHoon

Bin

Yan

Chan

USE UNIVERSITY OF ARIZONA

Data generated in this project is used to update Radiant and Convective Heat Gain from Unhoo Cook) Conditions and 5B Recommended Rates Appliances During Idle (Ready to Cook) Condi Fundamentals (2013).

Table 2 Recommended Rates of Radiant and C Appliances during Idle (Ready-to-Cook) Condi 5A, Chapter 18 in ASHRAE F

Appliance	Energy Rate, Btu/h		Rate
	Rated	Standby	
Cheesemelter	8,200	3,300	1,500
Egg cooker	8,100	850	200
Hot dog roller	5,500	4,200	900
Hot plate: single burner	3,800	3,400	1,100
Cooktop, induction	17,100	0	0
Microwave oven	5,800	0	0
Oven, conveyor (< 6kW)	17,100	13,500	2,500
Panini Grill	6,100	2,300	700
Popcorn popper	2,900	400	100
Rice cooker	5,300	300	50
Soup warmer	2,700	1,300	0
Steamer (bun)	5,100	700	100
Steamer, countertop	28,300	1,200	0
Toaster, conveyor	6,000	5,800	1,200
Toaster, vertical	8,900	2,600	600
Tortilla Grill	7,500	3,600	900
Waffle maker	0,200	000	200

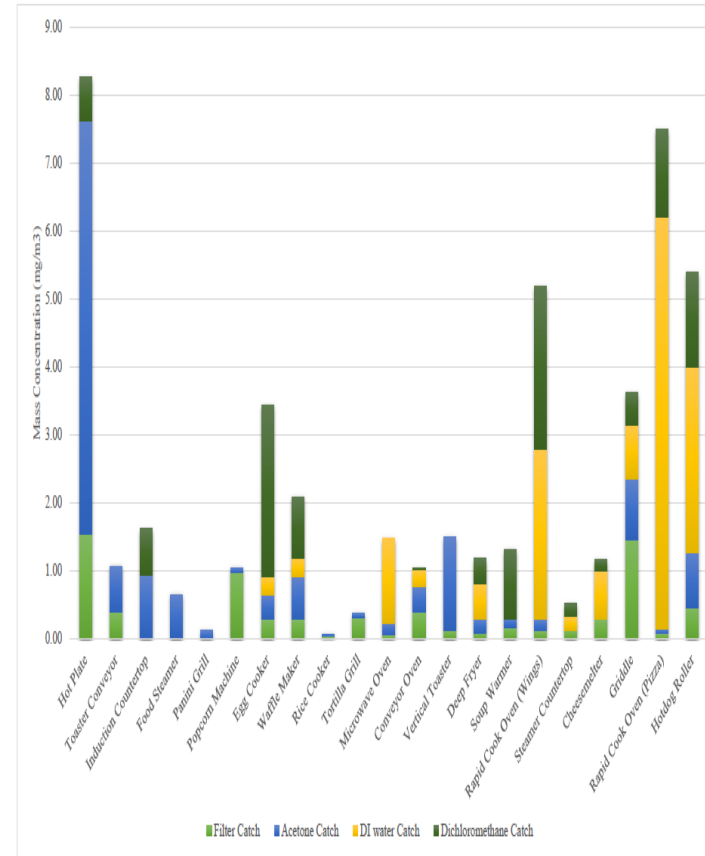


Figure 15 Grease particulate and vapor concentration (Particulate grease = "Filter Catch" + "Acetone Catch"; Condensed organic vapor = "Dichloromethane Catch"; Inorganic vapor = "DI Water Catch")

30

# Electric Cooking

## VENTLESS ADVANTAGE

CALIFORNIA CONFERENCE OF DIRECTORS OF  
ENVIRONMENTAL HEALTH

### COOKING EQUIPMENT EXHAUST VENTILATION FOR THE LOCAL ENFORCEMENT September 2009

#### PURPOSE

To provide uniform standards for exemption of cooking equipment in kitchens that due to particular specifications may not require ventilation system. It is anticipated that this document provide evaluating the cooking appliance and such evaluation is star jurisdictional or regional body making an assessment is consistency assurance for applicability to any jurisdiction.

#### BACKGROUND

The California Mechanical Code and the California Health Code require that all cooking equipment in food facilities be vented of gases, heat, odors, steam, and grease laden vapors. Prior to 1995, the California Retail Food Code, letters of interpretation function of the Food and Drug Branch of the California Department of Public Health (formerly CDHS) under section 114140 of the former Code of Regulations issued these types of letters for some time now and the ventilation exemption has defaulted to the local level.

The Plan Check sections of the Local Enforcement Agency determine direction or method of evaluating cooking equipment in the industry. This resulted in the Southern California Food Committee charge to establish an across the board guideline for cooking equipment ventilation exemption at the local or regional level.

#### AUTHORITY

CALIFORNIA HEALTH AND SAFETY CODE  
PART 7. CALIFORNIA RETAIL FOOD CODE  
CHAPTER 6. Equipment, Utensils, and Linens  
Article 2. Ventilation  
Sections 114149, 114149.1, 114149.2, and 114149.3  
114149.1.

(c) This section shall not apply to cooking equipment when the equipment is evaluated by the local enforcement agency for evaluation, and the local enforcement agency does not produce toxic gases, smoke, grease, vapors, or heat when operated as recommended by the manufacturer. The local enforcement agency may perform any necessary evaluations.

#### Specific Equipment Recommended for Exemption

EQUIPMENT	
Coffee Equipment	
• Urn or brewer	*
• Roaster (electric)	*
Corn on the Cob Warmer	*
Clam Shell Grill/Panini-for heating non-grease producing foods (Tortillas, pastries, rolls, sandwiches from precooked meats and cheeses).	
• A unit with dual grills is counted as two equipments.	*#
Crepe Maker (no meats)/ Waffle Cone Maker / Waffle Iron	
• Limit to 3 units	*
Hot Dog Warmer	*
Hot Plate	
• Electric (one burner only)	*#
• Induction cooker	*#
Ovens	
• Electric convection oven, 12 KW or less	*#
• Portable ovens (microwave, cook and hold, ovens utilizing Visible and Infrared light technology)	*
Popcorn Popper	
• Without external grease vapor release	*
Rethernalizers (max temperature of 250°F)	*
Rice Cookers	
• Electric	*
Rotisserie	
• Electric and enclosed with max. ambient cavity temperature of 250°F	*#
Toaster –countertop (bread only)	*
* Equipment marked with an asterisk typically does not need mechanical exhaust ventilation. However, the following criteria should be taken into consideration when determining if equipment needs mechanical exhaust ventilation:	
• Installation of other unventilated heat generating equipment in the same area as refrigeration condensers, steam tables, or counter-top equipment;	
• Presence of heating / cooling (HVAC) system;	

- Size of the room or area where the proposed equipment will be installed, including ceiling height;
- How the proposed equipment will be operated, e.g., the types of food prepared, how often, etc.;
- Nature of the emissions, e.g., grease, heat, steam, etc.;
- Method of producing heat, e.g., gas, electricity, solid fuel, etc.
- Adequate amount of general ventilation: In poorly ventilated confined areas where the proposed equipment (like an electric convection oven, clamshell grill, or low-temp. dishwasher) is located, adequate general ventilation could be provided by a ceiling or wall exhaust fan that provides an air change rate of 3-5 minutes per change.
- All equipment shall be operated and maintained in accordance with manufacturer's recommendations.

# Equipment such as Electric ovens, rotisseries, and clamshell grills shall be limited to 2 units without a hood. In most cases only 2 units of any hood exempted equipment should be placed; this may vary based on the field evaluation.

#### Special Consideration for Recirculating Ventilation Systems

The primary benefit of recirculating systems is that they do not require grease ducts with discharge to the outdoors. They are ideal for installations in building designs where it is impractical or too expensive to exhaust to the outdoors. Examples include some indoor food carts, stadiums, arenas, and operations where there is limited food preparation or where there are physical limitations with access to the outdoors. Appliances have been exempted when they include an integral ductless powered ventilation system shown to remove grease, smoke, fumes, and vapors that are emitted during the cooking process. To be exempted these systems must meet applicable performance and construction standards and include built-in fire suppression systems. Nevertheless, heating and cooking appliances produce heat during operation that may result in uncomfortable working conditions for food employees and increased potential for contamination of food by perspiration. Many times this can be resolved with an adequate ceiling fan. Criteria for approval of Recirculating Systems that may be used by Plan Check include:

1. The facility will be limited to one integral recirculating system unit with an electric appliance or non-integral recirculating system with electrical appliance(s).
2. The standard components of a recirculating system could include: 1) a UL listed grease filter, 2) a high efficiency particulate arresting (HEPA) filter and/or an electrostatic precipitator (ESP) or water system, 3) an activated charcoal or other odor control device, 4) a recirculating fan, and 5) a

Page 6

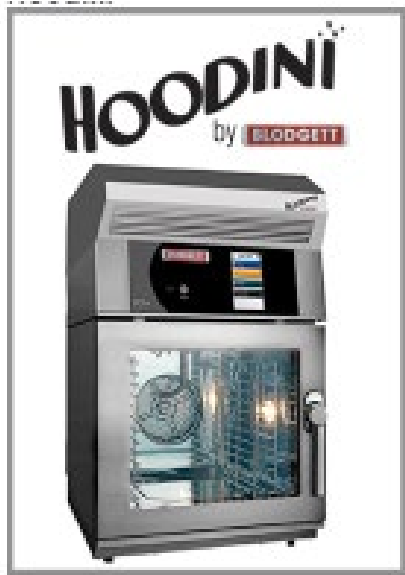
# Electric Cooking

## VENTLESS ADVANTAGE



# Electric Cooking

## VENTLESS ADVANTAGE



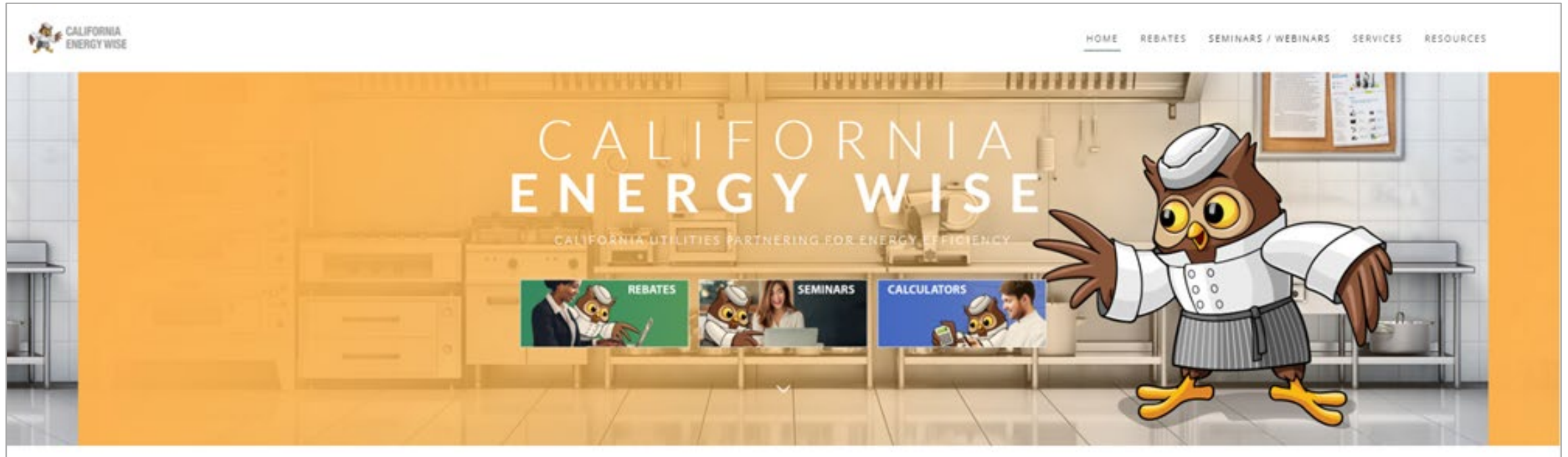
# Electric Cooking

VENTLESS ADVANTAGE



Energy for What's Ahead<sup>SM</sup>

# How can the Utilities Help You?



[CAenergywise.com](http://CAenergywise.com)

# How can the Utilities Help You?

## MORE WAYS TO SAVE



### SEMINARS / WEBINARS

See What's New



### TRY BEFORE YOU BUY

Love it Before Buying



### CALCULATORS

Calculate Energy Cost



### ENERGY SURVEYS

Do-it-Yourself Energy Surveys



### DESIGN GUIDES

Performance & Efficiency Guides

# How can the Utilities Help You?

## ❖ Services

- Try B4 U Buy!
- Consultations
- Seminars
- Audits
- Meeting & Trainings

**SCE.com/FTC**

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Your Home —

Demand Response

Rebates, Incentives & Saving Tips ▲

Help Paying Your Bill ▲

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Outage Center ▲

Safety ▲

Foodservice Technology Center

Home > Your Home > Energy Education Centers > Energy Education Center Irwindale



Cooking Up Savings - The Food Service Technology Center

Our Foodservice Technology Center (FTC) is a one-of-a-kind demonstration kitchen that showcases the latest energy-efficient commercial foodservice equipment and technologies for your restaurant or foodservice facility. We encourage you to come by the FTC, take a tour and 'Try Before You Buy' by "test-driving" leading manufacturers' equipment before you make your purchase decision. Find ways to speed up your cookline, improve product quality and enhance your bottom line by saving energy and money.

Contact Us

Foodservice Technology Center  
6050 N. Irwindale Avenue  
Irwindale, CA 91702  
Phone: 626-812-7666  
Hours: Monday - Friday, 8 a.m. - 5 p.m.  
Email: [eeinfo@sce.com](mailto:eeinfo@sce.com)

# Next, try induction cooking for free

## SCE's Table-Top Induction Lending Program

- The Table-Top Induction Range Lending Program is open to SCE customers both residential and commercial.
- Customers can borrow an induction range, wok, pot and pan for up to 14 days for free.

### Three Easy Steps

- Visit our Energy Efficiency Lending Programs website at: <https://sce.myturn.com/>
- Create an Account
- View our inventory, select your items and place them in your cart
- Choose the date and time you would like to pick-up your induction unit
- Check out, and you'll be on your way to...


**Get cooking with induction!**



# Next, try induction cooking for free

## SCE's Table-Top Induction Lending Program

[Home](#) [Inventory](#)

 **EDISON**  
Energy for What's Ahead™

Foodservice Technology Center

Availability

☐ In stock now

Category

☐ Commercial (8)

☐ Induction Cooktops (23)

☐ 120v (17)

☐ 208v (6)

☐ 240v (3)

☐ Induction Cookware (31)

☐ Accessories (10)

☐ Adapter (1)

☐ Pans (7)

☐ Pots (8)

☐ Specialty Cookware (6)


☐ Residential (16)

Type

☐ Induction Cooktops (24)

☐ Induction Specialty Cookware (18)


☐ Induction Standard Cookware (14)



Comal - Cast Iron 10inch

[Check Availability](#)


Foodservice Technology Center



Dipo Induction Cooktop 208v

[Check Availability](#)


Foodservice Technology Center



Duxtop Induction Unit 1800w

[Check Availability](#)


Foodservice Technology Center



Garland Induction Cooktop 3500W (208v)

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Foodservice Technology Center



Hatco Induction Cooktop 1800W

[Check Availability](#)




Foodservice Technology Center



Hatco Induction Cooktop 3120/3600W (208/240V)

[Check Availability](#)

Foodservice Technology Center



# Contact Info

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  - [SCE.com/FTC](http://SCE.com/FTC)

SANTA BARBARA UNIFIED SCHOOL DISTRICT

# Solar & Microgrid

Flipping the Switch  
September 24, 2025



SANTA BARBARA UNIFIED SCHOOL DISTRICT



[WWW.SBUNIFIED.ORG](http://WWW.SBUNIFIED.ORG)

# Overview



- Project inspiration
- Project design
- Power purchase agreement
- Building electrification

# School District




## Santa Barbara Unified School District

- 12 Elementary
- 4 Junior High
- 5 High Schools
- 13,000 students - 57.7% on free or reduced price meals
- Most buildings built 1920s/1960s
- <20% classrooms w/ AC


# Grid Vulnerability








# Santa Barbara County Fire History Dashboard 1912-2024

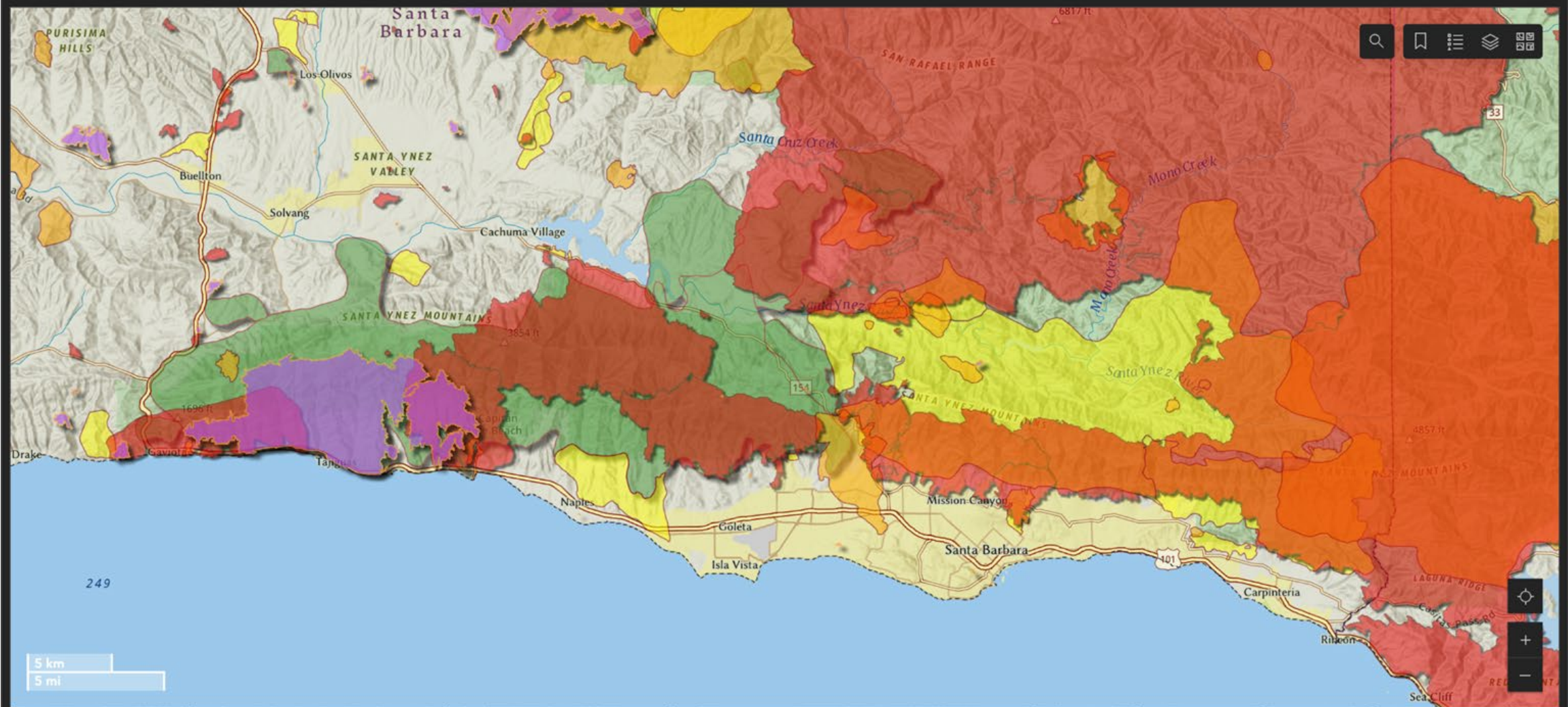
The average interval between large wildfires (10,000+ acres) within Santa Barbara County is 4 years.

**Month Filter**  
All Months

**Year Filter**  
All Years

**Offshore Wind Filter**  
All

**Structures Filter**  
None



# Community



- SBU unified school sites serve as emergency shelters during natural disasters
  - Microgrids power largest kitchens
  - Gyms/MPRs shelter
- Thomas Fire 2017, mudslides 2018, flooding 2023, etc. initiated the project

# Solar



- 14 solar arrays & 6 microgrids
  - Parking lots where feasible
  - Play fields for shading
- Provides 70% of SBUnified's overall electricity use
- Offsets 93% of GHG emissions from utility electricity use
- Microgrids for the largest facilities



## Tier 1 loads:

- Freezers, refrigerators, emergency shelter facilities, comms equipment (internet, radio etc)
- 100% resilience expected

## Tier 2 loads:

- Multi-purpose rooms/gyms, site comms equipment
- 80% resilience expected

## Tier 3 loads:

- Remainder of the school < 25% resilience expected

# Microgrid



Normal usage to Emergency use continuum

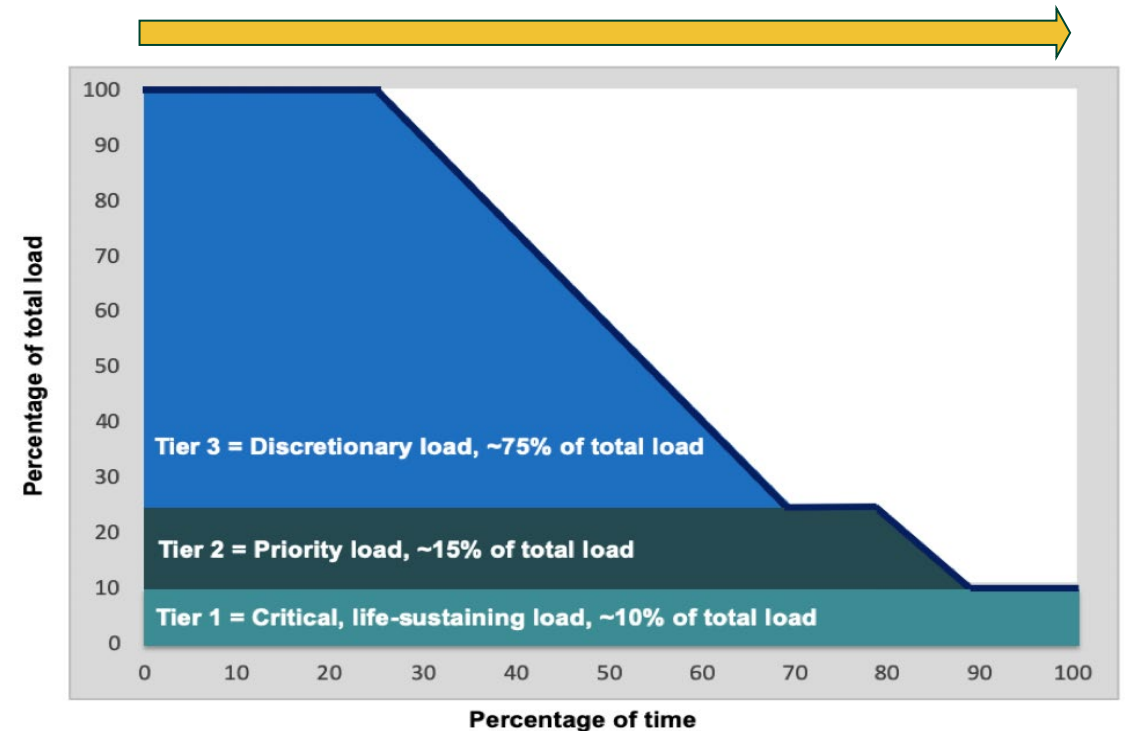
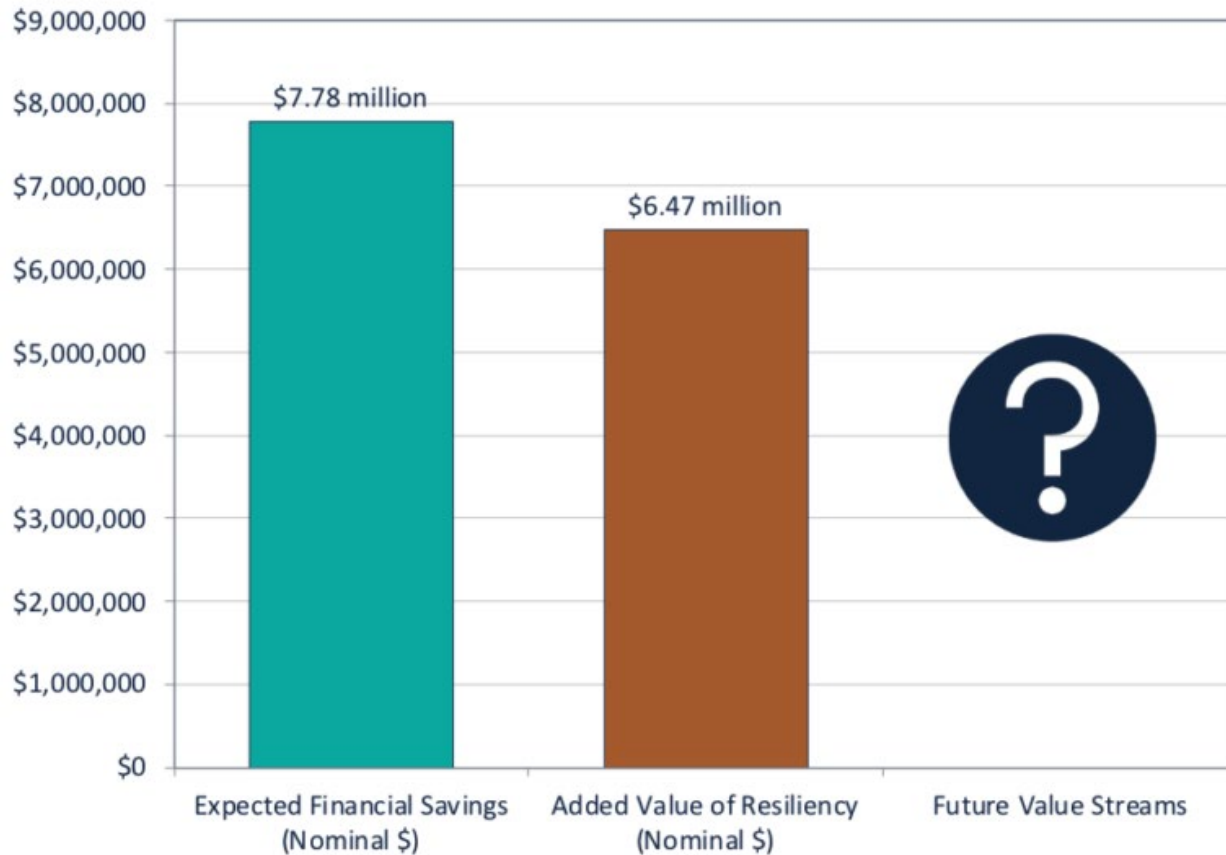


Illustration of resilience levels and loads for Tiers 1-2-3 load where (a) solar is sufficient to attain zero net energy (ZNE) and (b) storage capacity equals 2 hours of solar.

Source: Clean Coalition, analysis completed for UCSB

# PPA



## Power Purchase Agreement (PPA)

- 28-year non-escalating flat rate
- Traded slightly higher rates for \$1.2 million contingency fund
- Performance guarantee
- Original savings: \$7.7M
- Updated savings: \$14.0M

# Electrification



- Since installation of solar, SBUnified is electrifying buildings
- Heat pump water heaters (HPWH)- all District 100-gallon gas water heaters have been replaced with 120-gallon HPWH
- Incentives covered 95% of installation cost

# Electrification



- Heat Pumps
- Moving forward, all existing and new HVAC systems will be electric heat pumps where feasible
- Project to replace 3 wings of a high school gas furnace w/ heat pumps doubled cost but introduced AC



# Proper Planning



- Involving SCE early - planning takes time
- Account for extra cost for bringing in new/upgraded electrical
- Grants sometimes pay for electrical upgrades but read the fine print!

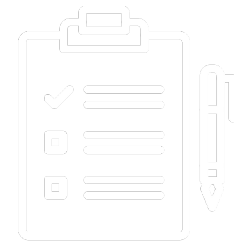




# Thank You



Desmond Ho  
Operations and Sustainability Coordinator  
[DesmondHo@sbunified.org](mailto:DesmondHo@sbunified.org)



Accountability

# Southern California Edison's Transportation Electrification Pathways

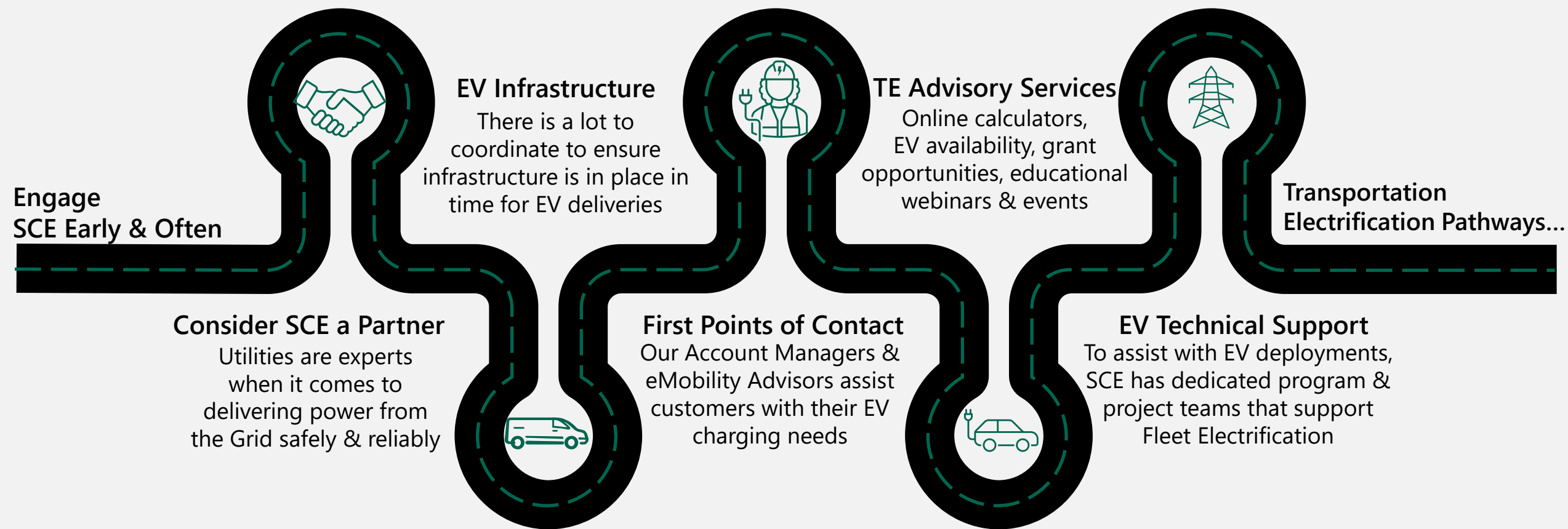


SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>



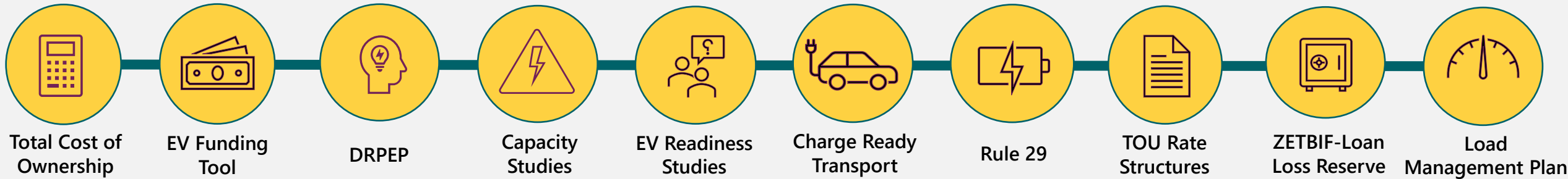
# Working With SCE For Your Power Needs

Requesting or upgrading power can seem like a long and complicated process, but by planning ahead, you don't have to do it alone



# SCE Supports Every Stage of Your Electrification Journey

Programs and self-serve resources are available to help you understand the impact of electrification, define requirements, and access funding for your fleet transition



## START HERE:

- Your SCE Account Manager
- [Power Service Request](#)

## SHARE YOUR PLANS:

- [EV Acquisition Plan Survey](#)
- SCE Forecasting Process
- SCE System Planning Process

## EARLY STAGES-PLANNING:

- [SCE Distribution Resources Plan External Portal \(DRPEP\)](#)
- [Engineering Analysis Reports](#)
- [Total Cost of Ownership](#)
- [Drayage Truck Rebate](#)
- [ZETBIF-Loan Loss Reserve](#)
- [EV Funding Tool](#)

## TE ADVISORY SERVICES:

- [EV Readiness Studies](#)
- [Load Management Plans](#)
- [In Person Events & Webinars](#)

## EV INFRASTRUCTURE:

- [Charge Ready Transport](#)
- [EV Infrastructure \(Rule 29\)](#)
- [SCE Approved Product List](#)

# Total Cost of Ownership Calculator – Available Now

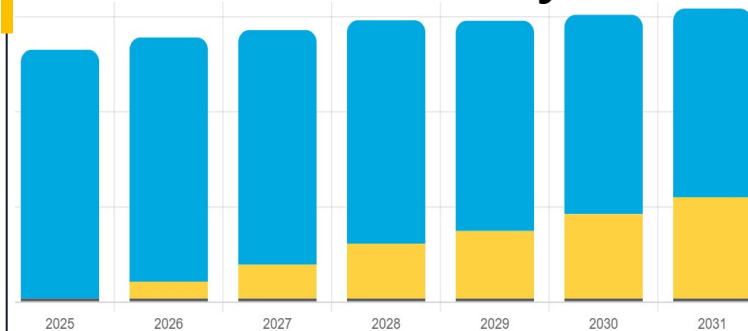


**SWITCH YOUR FLEET TO  
ELECTRIC & SAVE BIG ON  
FUELING**

SCE is here to support your fleet transition.

Total Cost of Ownership

## Estimate Your Electricity Cost



**TCOCALCULATOR.SCE.COM**

## Fuel Savings



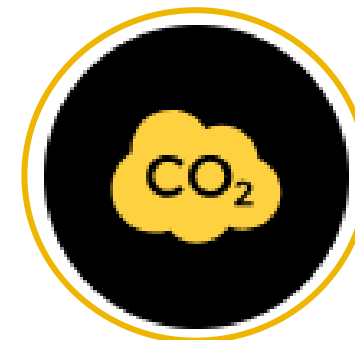
Input your fleet specifications to see monthly and annual fuel savings

## See Incentives



Browse all available incentives in your region.

## Low Carbon Fuel Standard



LCFS credits are available for low carbon vehicles. Estimate your credit value now.

# MDHD Electrification - Low to No-Cost EV Infrastructure Installation

## Charge Ready Transport

Offset the Cost of EV Infrastructure Installation Up to a 10 – Year Fleet Deployment Strategy



### Program Considerations

#### Highlights

- Program Open Until December 31, 2026
- Provides Two Construction Tracks
- Can Apply for Multiple Phases / Sites
- Supports 100% Electric Class 2-8 & Off-Road EVs



### EV & Charger Requirements

#### Supports Phasing in of EVs up to 10 Years

- PO's Are Not Required Up Front
- 2 EVs Must Arrive Within 2 Years of Application
- Supports Level 2 and DCFC Chargers
- Chargers Must be On SCEs Approved Product List



### Financial Offsets

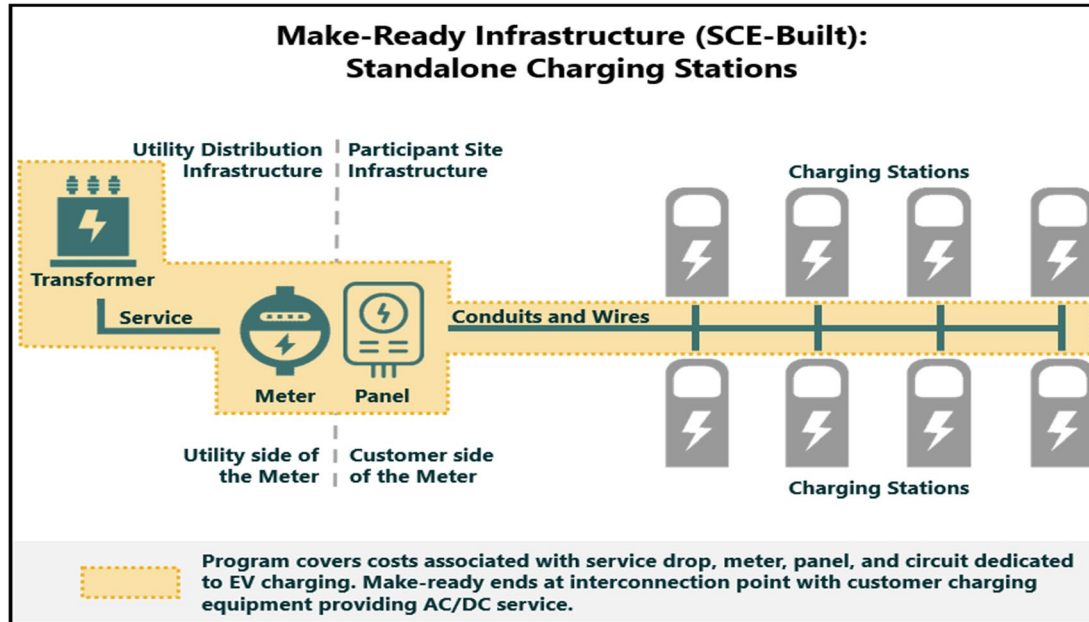
#### Charger Hardware Rebate up to 50%

- School District, Transit Agency or Project Site in a DAC, and Applicant not on Fortune 1000 List
- Rebate Cap \$1,800 to \$39,200 per Charger

#### SCE & Customer Built Infrastructure Installation Options

# CRT: SCE Built & Customer Built Infrastructure

## Two Distinct EV Infrastructure Installation Options:

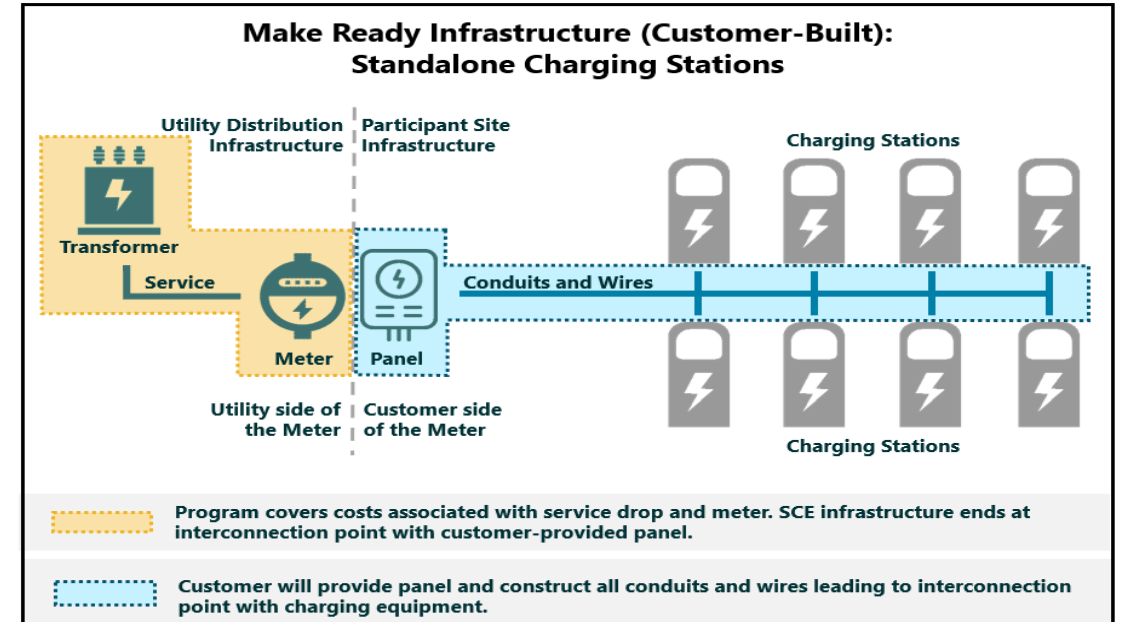


### SCE Built

- Turn-Key Solution
- Distribution to First Point of Interconnection
- No DER Interconnection in Perpetuity
- No Site Alterations or Increase of Charger kW
- More Intrusive Easement

### Commonalities

- No Red-Lines on Easement and Program Participation Agreement
- Chargers Must be On SCEs Approved Product List
- Separate Meter With Commercial TOU Rate Structures
- 1:1 EV to Port Ratio Minimum



### Customer Built Option

- Allows for DER Integration with R21
- Less Intrusive Easement
- More Flexibility on Customer side Infrastructure
- Build Must Be Completed by IBEW Labor
- Up to 80% Project Cost Rebate

# Every EV Charging Infrastructure Project is a **MAJOR** Construction Endeavor

Each project is unique; there are 6 high level factors that influence how long completing an EV Infrastructure project will take:

**Type of Project.** Make Ready or Utility Infrastructure Only? Make-Ready projects take longer, Utility is completing designs, obtaining permits, securing material, & completing construction on both sides of the meter


**Site Characteristics.** Does electric service already exist, or will site require distribution or service line extension? Environmental Remediation, Existing UG Utilities (natural gas, gasoline, etc.)


**Capacity.** Does it currently exist, or will added capacity be needed to serve a project? Projects may require a lot of capacity. See us as a partner! We may need to upgrade substation or reallocate circuit load

**Permits & Clearances.** Utilities have to be given permission to complete the construction work required for EV charging from the AHJ (Cities, Counties, State or Federal Entity). *Permit approval times are taking longer*

**Materials & Equipment.** Industry has seen a shortage of key materials and equipment needed to complete EV Charging Infrastructure projects to include *Switchgear, some Transformers & smaller materials*

**Customer Engagement.** Lead times in receiving customer applications, submitting designs, providing clearances, signing agreements, approving preliminary and final designs, etc. *Customer requested changes*



- 



## Approximately....

-

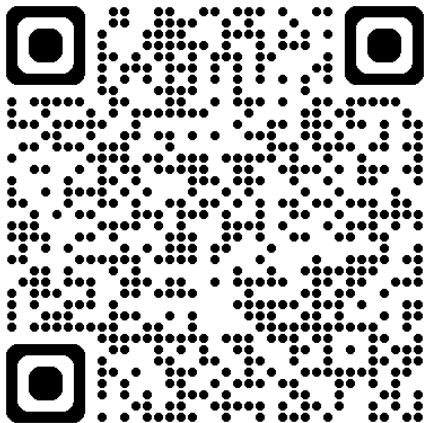
# Transportation Electrification (TE) Advisory Services

## TE Advisory Services is Available to Support Customers Early in the Electrification Planning Phase

# EV Readiness Studies *(No Cost Project Site Study)*

- Helps multifamily property owners, tribal communities businesses and medium- and heavy-duty fleet owners determine the feasibility of their specific electrification project. **Customers will receive the following:**

- **Consultation call with a TE Advisor**
- **High-level study of their site**



**Request Your Study**

**[www.sce.com/teas](http://www.sce.com/teas)**



**SOUTHERN CALIFORNIA EDISON**  
Energy for What's Ahead™

## Transportation Electrification Advisory Services

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### Vehicle Availability

- One of the first steps is determining which EVs are the best fit for your business. You will want to consider how much energy each vehicle will need to operate on an average day and how much time it will take for that vehicle to charge.
- You will also need to determine how many vehicles you will need to operate on an average day and how long they will need to be charged.

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**SOUTHERN CALIFORNIA EDISON**  
Energy for What's Ahead™

## Transportation Electrification Advisory Services

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### Customer Information

**Company Name:**  
ROYAL PAPER BOX

**Site Address:**  
1033 S MAPLE AVE  
MONTEBELLO, CA 90640

**Contact:**  
John Smith, 123-456-7980

### Fleet Information

**Number of Vehicles Planned for EV (used for analysis):**  
42

**Vehicle Information:**  
Class 3: Truck - lifetime of 15 year(s)

**Vehicle Operations:**  
5 workdays/week, 200 avg. daily miles/vehicle

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### Fleet

**Over 10 years, you could save approximately \$\_\_\_\_\_ in fuel costs by going electric.**



Metric	Value
LIFETIME FUEL SAVINGS	\$169,844
LIFETIME LYS CREDITS	\$82,588
RATE PLAN	TOU-EV-8
ANNUAL DIESEL CONSUMPTION RATED	49 tons
WEIGHT	56

This site analysis is based on applicable Southern California Edison (SCE) Electric Vehicle Rates and is provided to facilitate a high-level comparison between conventional fuel costs and may not include all applicable rate options or available savings. This analysis is based on information you provided and certain assumptions for charging patterns, usage, and applicable rate factors. SCE can neither predict nor guarantee any actual cost savings or increases due to the changes for usage variables or applicable rate factors such as: charging equipment, operating factors, equipment, EV charging, weather patterns, service voltage, firm service levels, taxes, and add-on facilities charges. These rates are based on secondary voltage (< 2 KV) and bundled service.

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### Auditor Notes

asfasad fsaf af awf ewa fewar was nwa rwaef wae fawef waefwaeaf waeaf waeaf waeaf ewa afawef ertawr wer uwaoer upwaoerupwae waeah fkywaeafh kwae fowefwae waeofwehawoh ewhf weahr ewhr; waeahwa rhwaekf hewahf waeakrfewkrfewjewealr waeaf pwaeqf ewe fowaf ewpf awfs-br/>-br>paeff .alef.eiof .afj .waeaf .waeaf .aofaesjfluehf owanfnsz hgz.eshj frntfzuezn.ef ue true

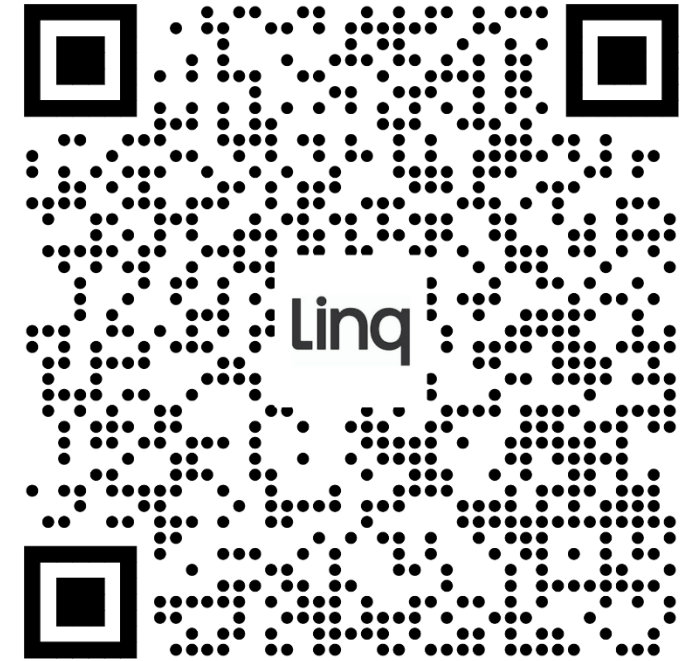
# SCE Supports Every Stage of Your Electrification Journey

For More Information:

**Ramiro Lepe**

(626) 842-7129

[Ramiro.Lepe@SCE.com](mailto:Ramiro.Lepe@SCE.com)





# ORANGE UNIFIED SCHOOL DISTRICT

Presented By: Omar Dena, Transportation Manager





# Why Electric Vehicles??

- Zero Emissions & Cleaner Environment
- Reduce Fuel & Maintenance Costs
- Change in Emissions Regulations
- Incentives
  - Grant Funding
  - LCFS & V2G Credits



# OUSD Fleet Electrification Overview



## PHASE 1 - COMPLETED

- 15 Blue Bird T3REs
- 15 Nuvve 19.2kW
- Charge Ready Transport – SCE Built



## PHASE 2 – IN PROGRESS (Final Stage)

- 8 Blue Bird T3REs & 8 Micro Bird G5
- 13 Nuvve 19.2kW
- 3 Nuvve 60kW V2G
- Charge Ready Transport – SCE Built



## PHASE 3 – IN PROGRESS (Program Agreement)

- 10 Micro Bird G5 (VAP – 7 more buses)
- 5 60kW V2G
- 5 160kW V2G
- Charge Ready Transport – SCE Built

Total Vehicles in Fleet: **120**  
How many EVs in operation today? **17**



# The Feasibility of Transitioning to Electric



Operational  
Considerations &  
Regulatory Factors



Charging  
Infrastructure & Site  
Planning



Funding & Incentives



Utility Engagement &  
Managed Charging



Environmental Impact  
& Stakeholder  
Engagement



Training, Maintenance  
& Operational  
Readiness





# Key Steps for a Successful ZEV Transition

## **Comprehensive Fleet Assessment**

Define Goals & Objectives

## **Roadmap for Implementation & Infrastructure**

Outline a Phased Approach

## **Stakeholder Engagement & Partnerships**

Internal & External

## **Training & Support Program**

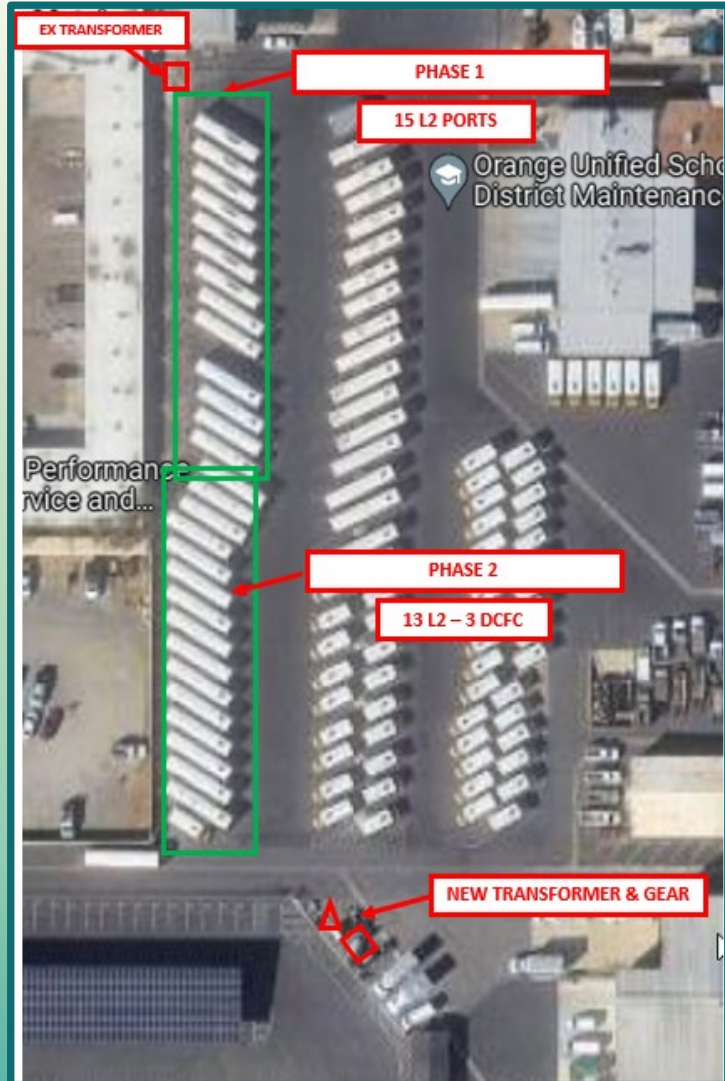
Shop & Driver Training



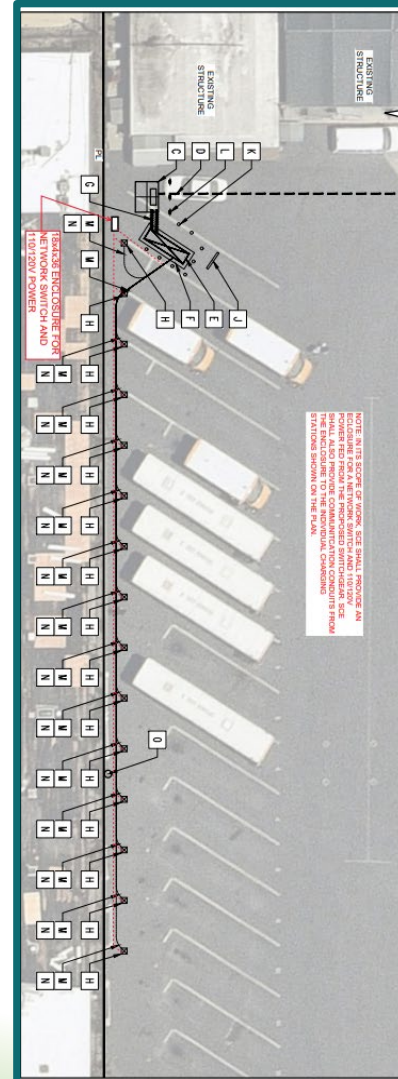
# EV Infrastructure Installation Support & Layout

*SCE's Charge Ready Transport Program*

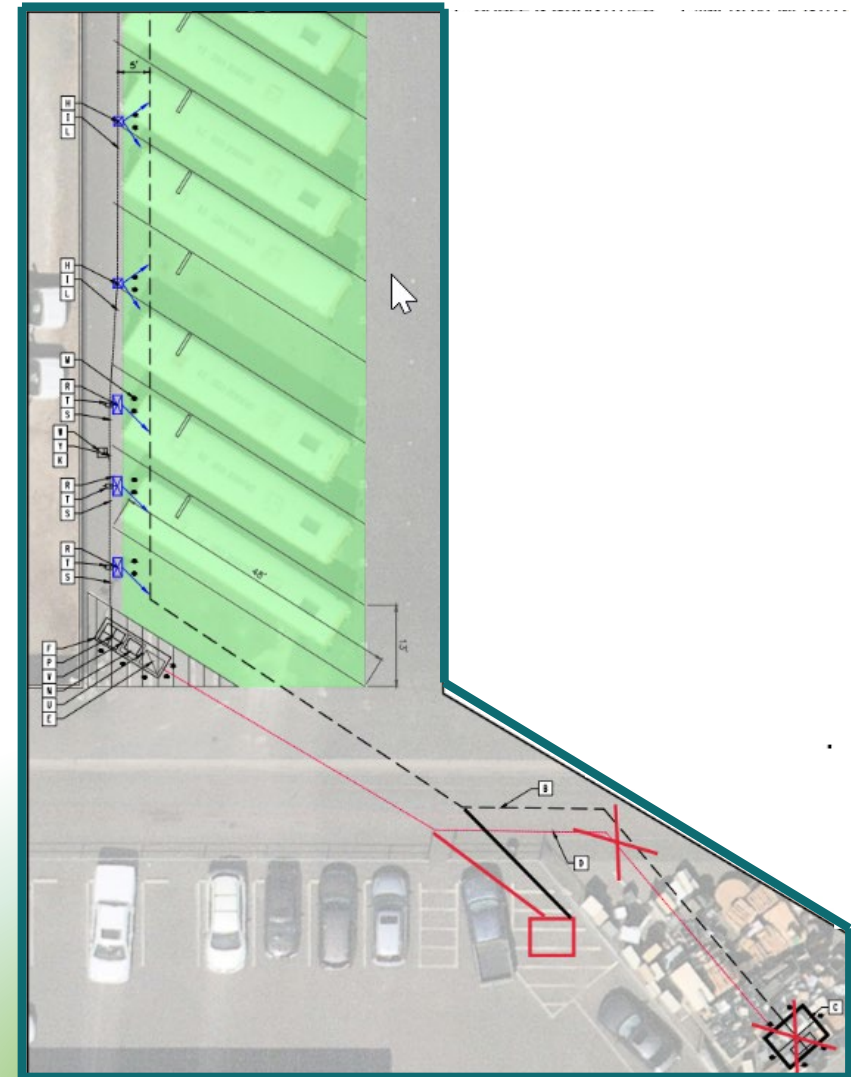
## SITE LAYOUT



## PHASE 1



## PHASE 2



# EV Infrastructure Installation Support & Layout

*SCE's Charge Ready Transport Program*

## PHASE 3 – OPTION #1 CONFIRMED BY SCE



### Charger Selection

(5) 60kW V2G

(5) 160kW V2G

### EV Types Supported

Blue Bird T3REs

Micro Bird G5



# Grants and Incentives

<b>EVs Procured</b>	<b>7</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>17</b>
<b>Dates Arrived</b>	2021	2022	2023	2024	Pending
<b>Funding Program</b>	VW Mitigation Trust Fund	SCAQMD & HVIP	HVIP	HVIP	EPA, HVIP, HTST Plan
<b>Funding Amount</b>	\$2.8M	\$800,000	\$1.26M	\$396,000	\$5.57M
<b>District Out of Pocket Cost</b>	\$220,000 (sales tax)	\$30,612 (sales tax)	\$1.23M	\$542,000	\$1.53M
<b>Challenges</b>	None	None	None	None	Temporary Funding Pause
<b>Funding Timeline</b>	1 year	1.5 years	6 months	6 months	Approved 1.5 years





# Navigating Range Anxiety

## **Route Optimization & Planning**

Route Design / Data Analysis

## **Battery Management & Range Assessment**

Maintenance / Energy Management

## **Flexibility & Adaptability**

Monitoring / Feedback

## **EV Bus Spec's**

Battery Size





## Driver & Mechanic Training

### **Comprehensive Training Program**

Driver / Maintenance Staff Training

### **Familiarize Staff with Infrastructure**

Charger Operation Training

### **Feedback & Support**

Regular Updates



# Data & Managed Charging



Orange USD (E) #06  
Nuvve 19.2 kW



Plugged N/A  
Session time: 1d 1h 28m

Orange USD (E) #07  
Nuvve 19.2 kW



Plugged N/A  
Session time: 6h 24m

Orange USD (E) #08  
Nuvve 19.2 kW



Charging N/A  
Real time power: 4.0 kW  
Session time: 5h 14m

Orange USD (E) #09  
Nuvve 19.2 kW



Available

Orange USD (E) #10  
Nuvve 19.2 kW



Plugged N/A  
Session time: 4h 31m

Monitor and manage your electric vehicles and chargers in real-time

Gain effective oversight on your assets

View detailed information about your assets



# Electrification Summary



## Achievements

Reduced Emissions  
Operational Cost Savings  
Improved Rider Experience



## Challenges

Range Limitations  
Charging Time  
Space Constraints  
Driver Monitoring & Data  
Utilization



## Lessons Learned

Address Infrastructure Needs  
Early On  
Scalability Considerations



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# Funding and Resources for School Electrification

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# Funding Approaches

# Summary of Funding Opportunities



## Traditional Sources for Capital Projects

- State and/or district level funding (non-competitive)
- Voter approved bonds or levies



## Federal & State Disbursements or Allocations

- Federal: non-competitive, based on funding formulas
- State Lottery(s)
- Other State



## Grants, Rebates, and Incentives

- Federal (competitive)
- State (competitive)
- Local (competitive)
- Utility rebates & incentives



## Other Procurement & Financing Options

- Energy Service Company / Energy Performance Contracting
- Energy Efficiency as a Service
- Utility Energy Service Contracts
- Private Loans

# Funding Stacking

- Local bonds (or levies)
- State matching funds
- Utility incentives
- Low interest loans
- Grants
- Power Purchase Agreements (PPAs)
- Energy Savings Performance Contracts (ESPC's)
- ... **\*Creativity\***



Kellogg Middle School | Portland, OR

Credit: OhPD

# Funding Stacking Example

## Medium district, Climate zone 4C, rural

- This district refers to it's community as tax averse and has not been able to pass a bond in quite some time.
- Immediate needs in the district to address poor thermal comfort, need for air conditioning in schools, poor IAQ, poor lighting, and filtration to handle wildfire smoke.
- The district utilized a set of funding mechanisms aside from bonds including:
  - \$4M in ESSER (ESSER II and III) funds
  - \$130k in SB 1149 allocation from the State Dept. of Energy
  - \$15.5M in private (low interest) FFC loans

Utility PPC  
Funded  
allocation from  
State Dept. of Ed  
**\$130k**

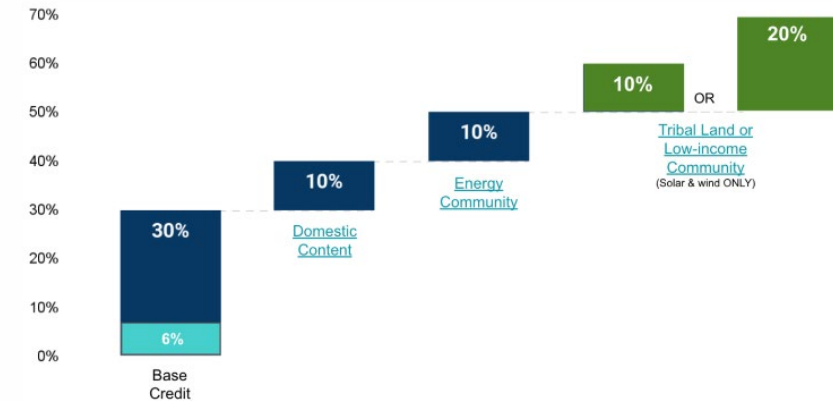
**Federal:  
ESSER II & III  
\$4M**

**Other  
Procurement /  
Financing Options  
(Low interest loan)  
\$15.5M**

# National Funding Opportunities

- Investment Tax Credit (ITC):
  - **Sec. 48 (Ground source HP):** good to go!
  - **Sec. 48E (Solar and storage):** new rules, recommend commence construction by Dec 2025
  - **Sec. 30C (EV charging):** placed into service by June 30, 2026
  - **Sec. 45W (EV Buses and other clean vehicles):** Acquired by Sept 30, 2025 and placed into service before or after 9/30/2025
  - **179D:** Commence construction by June 30, 2026

## Investment Tax Credit Base and Bonus Credits



Credit: Undaunted K-12

Way more detailed info here: [Undaunted K-12 Update on Clean Energy Tax Credits for Schools](#)

## Energy Tax Credits for Schools Hub

*Unlock federal funds for your school's facilities*


Through Elective Pay, school districts can access federal energy tax credits to defray the cost of highly-efficient, modern energy technologies. These upgrades can help districts reduce operating costs and create safer, healthier, and more resilient facilities.


UndauntedK12's **Energy Tax Credits for Schools Hub** provides up-to-date information and resources to help district leaders and their partners learn about these tax credits, understand recent changes, and make the most of this opportunity.


Resources Available on the Hub

Updates to Energy Tax Credits

Elective Pay In Action

  
Electric Transportation:  
Take Advantage Now

  
Ground-Source Heat Pumps:  
Full Speed Ahead

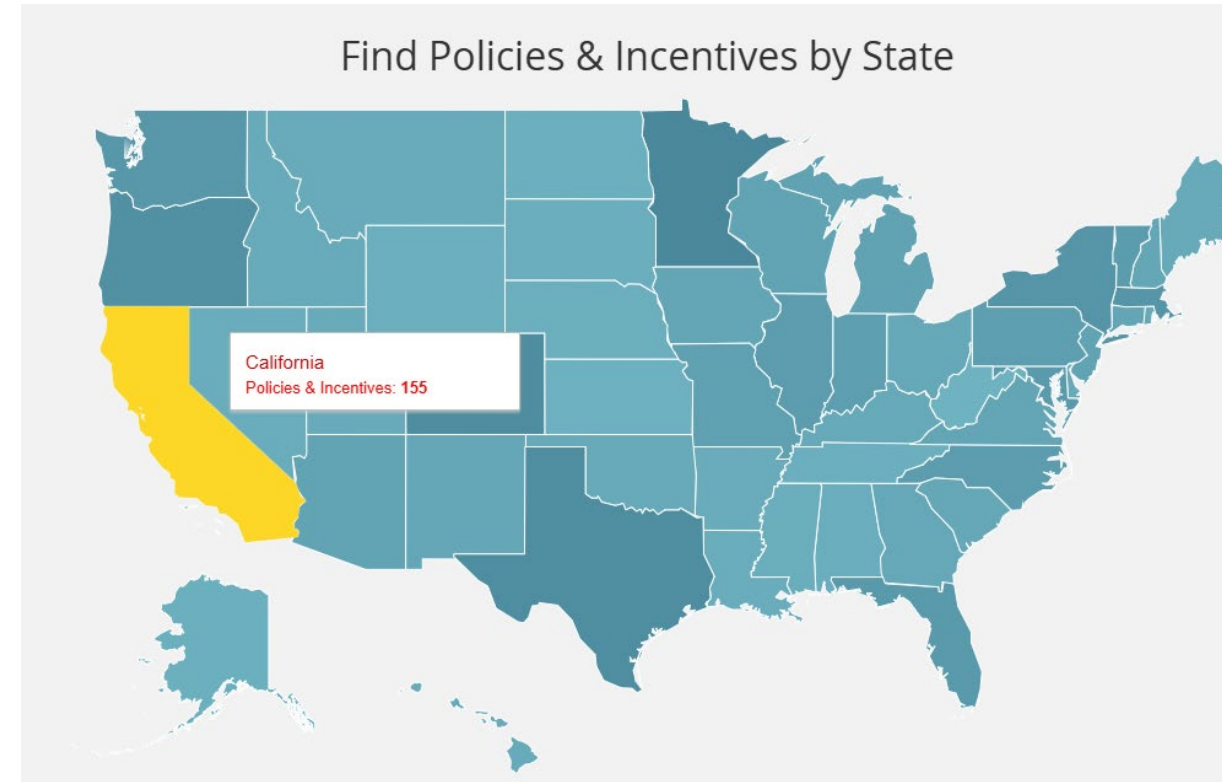
  
Solar & Storage:  
A New and Challenging Landscape



Visit [www.undauntedk12.org](https://www.undauntedk12.org) to learn more.  
Questions? Contact [info@undauntedk12.org](mailto:info@undauntedk12.org)

# State and Local Funding

- DSIRE (Database of State Incentives for Renewables & Efficiency:  
<https://www.dsireusa.org/>  
<https://www.dsireusa.org/>
- Utility (get to know your utility!)
- Match funding from State Programs



# School Funding and Opportunities Tracker!

Found here:  
<https://newbuildings.org/resource/electrification-tools-for-schools/>

Have an opportunity to add or looking for something specific?  
Email:  
[schools@newbuildings.org](mailto:schools@newbuildings.org)

NBI School Funding Tracker										
File Edit View Insert Format Data Tools Extensions Help										
Q Menus 50% View only										
A1 School District EnergyEfficiency and Electrification Funding Opportunities										
1	2	3	4	5	6	7	8	9	10	11
School District EnergyEfficiency and Electrification Funding Opportunities										
Last Date Re	Jurisdiction	Name of Program	Administering Organizat	Description	Funding Amount Available	Type of Program	Timeline	Type of Projects Applicable	Restrictions or Requirements	Link to Program
5/30/2025	CA	Anaheim Public Utilities - Public Access EV Charger Rebate	Anaheim Public Utilities	Public Access EV Charger rebates	\$7,500 (\$40,000 max)	Rebate Program	Rolling	Publicly accessible Level 2 EV chargers	schools and multi-family	<a href="#">Anaheim Public Utilities - Public Access EV Charger Rebate</a>
5/30/2025	US	Credits and deductions under the Inflation Reduction Act of 2022	IRS	Landing page for various credits and deductions associated with the Inflation Reduction Act of 2022	Varies	Federal Tax Credit	Tied tax year equipment put in service, equipment purchased, or project completion			<a href="https://www.irs.gov/credits-and-deductions-under-the-inflation-reduction-act-of-2022">https://www.irs.gov/credits-and-deductions-under-the-inflation-reduction-act-of-2022</a>
5/30/2025	CA	Business Energy Efficiency Rebates	Silicon Valley Power	Various equipment-specific rebates for commercial customers	Varies	Rebate Program	Rolling	HVAC, controls, food service equipment, lighting, heat pumps, solar	Must be Silicon Valley Power commercial rate customer	<a href="https://www.siliconvalleypower.com/businessrebates">https://www.siliconvalleypower.com/businessrebates</a>
5/30/2025	CA	Self-Generation Incentive Program	SoCal Edison, PG&E, SoCalGas, Center for Sust Energy	Financial incentives for installing clean, efficient, on-site distributed generation	Varies	Rebate Program	Rolling	Renewable Energy generation	Review 2025 handbook	<a href="https://www.socalgenica.com/">https://www.socalgenica.com/</a>
5/30/2025	CA	Commercial Rebate Program	Alameda Municipal Power	Utility rebate programs	Varies	Rebate Program	Rolling	HVAC, controls, food service equipment, lighting, heat pumps, solar		<a href="https://www.alamedamp.com/217/businesses">https://www.alamedamp.com/217/businesses</a>
5/30/2025	CA	Wattsman Energy Efficiency Upgrades	Pacific Power	Utility rebate programs	Varies	Rebate Program	Rolling	HVAC, controls, food service equipment, lighting, heat pumps, solar		<a href="https://www.pacificpower.net/business-energy-choice/business-efficiency-efficiency-programs/schools-alm">https://www.pacificpower.net/business-energy-choice/business-efficiency-efficiency-programs/schools-alm</a>
5/30/2025	CA	Commercial Energy Efficiency Rebate Program	City of Lompoc - Utilities	Utility rebate programs	Varies	Rebate Program	Rolling	HVAC, controls, food service equipment, lighting, heat pumps, solar		<a href="https://www.directefficiency.com/lompoc-rebates/">https://www.directefficiency.com/lompoc-rebates/</a>
5/30/2025	US	Qualified Commercial Clean Vehicle Tax Credit	IRS	Clean commercial vehicle tax credits	Varies based on GVWR, up to \$40,000/vehicle	Federal Tax Credit	Tied tax year equipment put in service	Plug-in electric and fuel-cell vehicles	Many...read the link in column L	<a href="https://programs.ds-reusa.org/system/program/detail/2247/qualified-commercial-clean-vehicle-tax-credit">https://programs.ds-reusa.org/system/program/detail/2247/qualified-commercial-clean-vehicle-tax-credit</a>
5/30/2025	US	Alternative Fuel Vehicle Refueling Property Tax Credit (Corporate)	IRS	Alternative fuel vehicle refueling property tax credits	6-30% of equipment cost, up to \$100,000/equipment max	Federal Tax Credit	Tied tax year equipment put in service	EV charging for fleet, public/commuter vehicle, and 2- and 3-wheeled vehicles	Many...read the link in column L	<a href="https://programs.ds-reusa.org/system/program/detail/2247/alternative-fuel-vehicle-refueling-property-tax-credit-corporate">https://programs.ds-reusa.org/system/program/detail/2247/alternative-fuel-vehicle-refueling-property-tax-credit-corporate</a>
5/30/2025 (program oversubscribed CA and applications put on waitlist)		Energy Efficiency Financing for Public Sector Projects	California Energy Commission	The California Energy Commission's Energy Conservation Assistance Act (ECAA) offers zero-interest rate loans to public schools and 1 percent rate loans to public entities and California Native American Tribes. Loans finance energy efficiency and energy generation projects, energy storage systems, and electric vehicle charging infrastructure.	Varies	Loan Program	Currently on waitlist	Energy efficiency, renewable energy, energy storage, and electric vehicle charging infrastructure		<a href="https://www.energy.ca.gov/programs-and-topics/programs/energy-conservation-assistance-act">https://www.energy.ca.gov/programs-and-topics/programs/energy-conservation-assistance-act</a>
5/30/2025	CA	Non-Residential Energy Efficiency Incentive Program	Los Angeles Dept of Water & Power	Utility rebate programs	Varies	Rebate Program	Rolling	HVAC, controls, food service equipment, lighting, heat pumps, solar		<a href="https://www.ladwp.com/commercial-services/programs-and-rebates-commercial">https://www.ladwp.com/commercial-services/programs-and-rebates-commercial</a>
5/30/2025	CA	SoCalGas Zero Percent On-Bill Financing	SoCalGas	Get Interest-Free Financing on Energy Efficiency Upgrades	Varies	On-bill Financing	Rolling	Various energy efficiency upgrades		<a href="https://www.socalgas.com/business/energy-savings-on-bill-and-load/energy-efficiency-program/zero-percent-on-bill-finance">https://www.socalgas.com/business/energy-savings-on-bill-and-load/energy-efficiency-program/zero-percent-on-bill-finance</a>
5/30/2025	CA	PG&E - Non-Residential Energy Efficiency Financing Program	Pacific Gas & Electric (PG&E)	Get Interest-Free Financing on Energy Efficiency Upgrades	Varies	On-bill Financing	Rolling	Various energy efficiency upgrades		<a href="https://www.pge.com/en/energy-efficiency-and-energy-savings/programs/energy-efficiency-financing.html">https://www.pge.com/en/energy-efficiency-and-energy-savings/programs/energy-efficiency-financing.html</a>
5/30/2025	CA	Financial Hardship Assistance for School Construction	California Department of General Services Office of Public School Construction	Financial hardship assistance is available for those school districts that cannot provide all or part of their funding share of a School Facility Program (SFP) or a Full-Day Kindergarten Facilities Grant Program (FDKFGP) project. Grant funds are available for pre and post emergency or disaster related projects. These funds support critical recovery initiatives, innovative research and many other programs. Funding types include Preparedness Grants, National Dam Safety Program State Assistance Grant, Emergency Food and Shelter Program, National Earthquake Hazards Reduction Program, Earthquake State Assistance Grant Program, Hazard Mitigation Assistance Grants, Next Generation Warning System Grant.	Varies by project	Funding assistance	Open	New construction, modernization	In order to receive financial hardship assistance, a school district must have made all reasonable efforts to raise local funding and must also demonstrate that it is unable to contribute all or a portion of the matching share requirement.	<a href="https://www.dgs.ca.gov/OPSC-services/Pages/Contact-Office-of-Public-School-Construction-Services-161-Policy/Access-Financial-Hardship-Assistance-for-School-Construction">https://www.dgs.ca.gov/OPSC-services/Pages/Contact-Office-of-Public-School-Construction-Services-161-Policy/Access-Financial-Hardship-Assistance-for-School-Construction</a>
5/30/2025	Fed	FEMA Grants	Federal Emergency Management Agency (FEMA)	This program will provide grants and cooperative agreements to States, federally recognized Tribes, public pre-schools, local educational agencies, and non-profit organizations for the assessment, prevention, control, or abatement of wildfire smoke hazards in community buildings and related activities. This opportunity is looking to fund community-scale and large-scale demonstrations of clean energy projects that reduce energy burden and improve resiliency. Although mostly focused on energy producing systems, community-scale whole-home retrofit projects would fit under the program scope for energy efficiency and reducing grid impacts. Generate tax savings for business owners that support school districts. Incentive not to schools but to AEC doing work on schools California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) plays a crucial role in the deployment of zero-emission and near-zero-emission technologies. HVIP accelerates commercialization by providing point-of-sale vouchers to make advanced	The total estimated funding available for awards is \$10,670,000. EPA anticipates awarding approximately 13-18 grants, ranging from \$100,000 to \$2,000,000.	Grant	Varies by grant	These funds support critical recovery initiatives, innovative research and many other programs.	Grants are the principal funding mechanism FEMA uses to commit and award federal funding to eligible state, local, tribal, territorial, certain private non-profits, individuals and institutions of higher learning.	<a href="https://www.fema.gov/grants">https://www.fema.gov/grants</a>
05/30/2025	Fed	Wildfire Smoke Preparedness in Community Buildings Grant Program	US Environmental Protection Agency (EPA)	This program will provide grants and cooperative agreements to States, federally recognized Tribes, public pre-schools, local educational agencies, and non-profit organizations for the assessment, prevention, control, or abatement of wildfire smoke hazards in community buildings and related activities. This opportunity is looking to fund community-scale and large-scale demonstrations of clean energy projects that reduce energy burden and improve resiliency. Although mostly focused on energy producing systems, community-scale whole-home retrofit projects would fit under the program scope for energy efficiency and reducing grid impacts. Generate tax savings for business owners that support school districts. Incentive not to schools but to AEC doing work on schools California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) plays a crucial role in the deployment of zero-emission and near-zero-emission technologies. HVIP accelerates commercialization by providing point-of-sale vouchers to make advanced	The total estimated funding available for awards is \$10,670,000. EPA anticipates awarding approximately 13-18 grants, ranging from \$100,000 to \$2,000,000.	Grant	Applications due May 9th, 2023 at 11:59 pm EST	Projects that improve public health protection against smoke from wildfires in public buildings or buildings that serve the public. Projects can support this effort through activities such as smoke readiness planning, outreach and training for smoke readiness, indoor and outdoor air quality monitoring, etc.	Applications must target public buildings or buildings that serve the public. Eligible entities are States, Tribes, public pre-schools, local education agencies, and non-profit organizations.	<a href="https://www.epa.gov/emergency-response/wildfire-smoke-preparedness-community-buildings-grant-program">https://www.epa.gov/emergency-response/wildfire-smoke-preparedness-community-buildings-grant-program</a>
5/30/2025 (on temporary restraining order)	Fed	Energy Improvements in Rural or Remote Areas (ERKA) Program	US Department of Energy (DOE)	This program will provide grants and cooperative agreements to States, federally recognized Tribes, public pre-schools, local educational agencies, and non-profit organizations for the assessment, prevention, control, or abatement of wildfire smoke hazards in community buildings and related activities. This opportunity is looking to fund community-scale and large-scale demonstrations of clean energy projects that reduce energy burden and improve resiliency. Although mostly focused on energy producing systems, community-scale whole-home retrofit projects would fit under the program scope for energy efficiency and reducing grid impacts. Generate tax savings for business owners that support school districts. Incentive not to schools but to AEC doing work on schools California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) plays a crucial role in the deployment of zero-emission and near-zero-emission technologies. HVIP accelerates commercialization by providing point-of-sale vouchers to make advanced	\$300,000 FOA		Concept Paper Submission Deadline: 4/14/2023 5:00 PM ET Full Application Submission Deadline: 6/28/2023 5:00 PM ET View Full Application Reviewer Comments Period: 7/28/2023 5:00 PM ET - 8/1/2023 5:00 PM ET	Clean energy projects with commercially viable or near-commercially viable technologies in rural or remote communities	Applicants are required to identify at least one applicable region for the project, along with any regional climate risks the project is proposing to help mitigate.	<a href="https://eere.energy.gov/DOEFull-Open-Peak/2023/3-30-23-7-4-23-to-15-08-23/000000">https://eere.energy.gov/DOEFull-Open-Peak/2023/3-30-23-7-4-23-to-15-08-23/000000</a>
5/30/25	Fed	1790 Commercial Buildings Energy-Efficiency Tax Deduction	U.S. DOE - EERE	California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) plays a crucial role in the deployment of zero-emission and near-zero-emission technologies. HVIP accelerates commercialization by providing point-of-sale vouchers to make advanced	Tax deduction up to \$1.88/SF	Federal Tax Deduction	Ongoing	Envelope, HVAC and HW, Lighting		<a href="https://www.energy.gov/eere/buildings/1790-energy-eff-tax-deduction-at-buildings-ca-deduction">https://www.energy.gov/eere/buildings/1790-energy-eff-tax-deduction-at-buildings-ca-deduction</a>
5/30/25	CA	California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)	California Air Resources Board	California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) plays a crucial role in the deployment of zero-emission and near-zero-emission technologies. HVIP accelerates commercialization by providing point-of-sale vouchers to make advanced	Varies; discount pricing at point-of-sale	Discount Pricing Program (POC Rebate)	Ongoing	Clean-air vehicles	Varies	<a href="https://caathashipw.org/funding/">https://caathashipw.org/funding/</a>

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# California Highlights

- K-12 Energy Efficiency Program (KTEP):  
<https://www.energy.ca.gov/solicitations/2025-04/pon-24-002-k-12-energy-efficiency-program-ktep>
  - Zero-interest loans
  - up to \$3 million per application
  - repayment over 15 years
- [Proposition 2](#): Per-pupil grants (slide scale state/local share)
- Prop 2 NEW: \$330M for Small School Districts (new construction) & \$400M (modernization)

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# Resources

# ELECTRIFICATION TOOLS FOR SCHOOLS

Online Tool / July 7, 2025 / Getting to Zero



**NEW!**

This resource page provides K-12 stakeholders with building electrification tools specifically designed for schools.

As districts in Southern California and across the country strive to create healthier, more sustainable learning environments, electrifying school buildings is a crucial step toward reducing costs, carbon emissions, and enhancing energy efficiency. Here, you'll find practical resources, templates, funding information, and technical support to help your school navigate the path to electrification and decarbonization.

## Funding Tools for School Electrification

### [School Funding Tracker](#)

This funding tracker is iteratively updated with funding and policy updates for school districts in California. The tracker includes available state and local funding opportunities, policies impacting schools, and federal funding opportunities. This tracker is updated frequently, but if a key resource is missing, please reach out to [schools@newbuildings.org](mailto:schools@newbuildings.org) to help maintain a robust dataset.

### [Checklist and Tips for Grant Writing for Schools](#)

This document includes tips and common data needs for grant applications. The actionable tips in this document come from districts that have successfully won grants and from reviewers of federal grant programs. These can apply to state, federal, and private grants. This list is not exhaustive, but it is a great starting point to be ready when grants become available.

## Templates for School Electrification

### [School Electrification Project Requirements Template for California](#)

The School Electrification Resolution Template serves as a starting point for establishing formal district documentation regarding electrified facilities. It includes instructions on how to successfully adopt the resolution to declare the districts commitments to healthy, electrified, and resilient facilities. A resolution is a formal statement of a decision by the district and may include specific and measurable technical goals.

**[newbuildings.org/resource/electrification-tools-for-schools/](https://newbuildings.org/resource/electrification-tools-for-schools/)**

# Webpage Tools

- Guides and Roadmaps
- Interactive Cost Dashboard
- Electrification Factsheet
- Funding Tracker
- Checklist and Tips for Grant Writing
- Templates

Also found on:

[www.sce.com/partners/resources/reach-codes](http://www.sce.com/partners/resources/reach-codes)

nbi new buildings  
institute

## Powering Up Our Schools

A Bright Future with Electrification

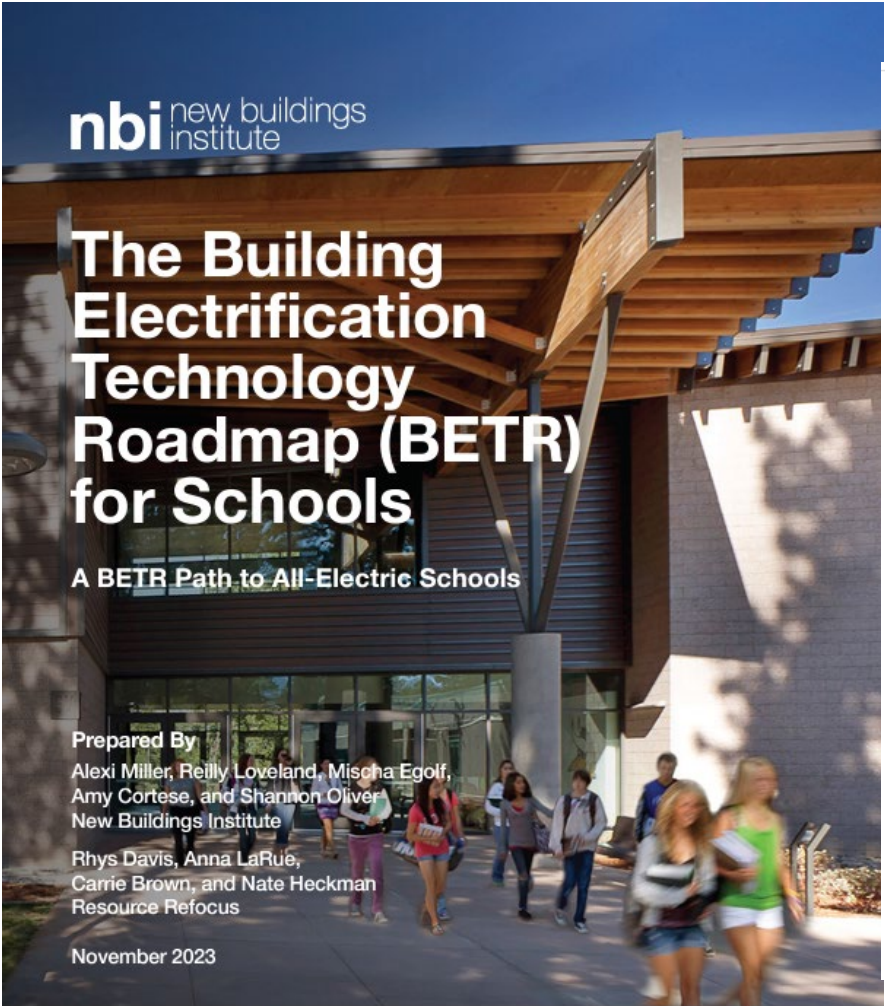
### Why Electrification Matters

School electrification means replacing fossil fuel powered systems with clean, electric alternatives. Swapping out old gas-fired systems for clean electric ones means students breathe easier, classrooms stay comfortable year-round, and our buildings run more efficiently so schools save money in the long run. By electrifying our schools, we're cutting pollution, lowering energy costs, and creating safer spaces for students and staff. It's a win for kids, communities, and the climate.



An all-electric school. Artwork by Nicole Kelner.

# BETR Report and Interactive Tool



Intro

Cost Estimator

Overall Summary

Upfront Costs per ft<sup>2</sup>

Upfront Total Costs

### Upfront Cost Estimation Tool

Input your school building size and select the prompts from the dropdown menus below to calculate upfront cost estimates by equipment type and end use. See intro tab for more details on the inputs.

Input Your Building Size in ft<sup>2</sup>  
15,000

Note: For most equipment, this tool uses average \$/sq ft values to estimate upfront project costs. If your square footage is greater than 25,000 square feet, select "Large" as your building type.

Select your project type  
Emergency Replacement

Select your building type  
Small

What type of equipment are you planning to upgrade?  
(All)

Select the specific equipment to estimate  
(All)

#### Range of Total Upfront Electrified Equipment Investment Costs

End Use	Electric Equipment	Total Cost Estimate Low	Total Cost Estimate High
Cooking	Countertop Kitchen Equipment	\$500	\$5,800
Domestic Hot Water	120 Volt HPWH	\$2,100	\$3,400
	Tankless Water Heater	\$4,100	\$26,900
Laundry	Heat Pump Dryer	\$400	\$2,200
Space Conditioning	Multi-Zone Rooftop Heat Pump	\$121,500	\$272,200
	Single-Zone Rooftop Heat Pump	\$148,500	\$515,700
<b>Grand Total</b>		<b>\$277,200</b>	<b>\$826,200</b>

# School Decarbonization Toolkit

- Roadmap Guide
- Templates for:
  - Goals
  - Owners Project Requirements
  - Sustainability Checklist
  - Workplans




# Sample Templates

## Energy and Carbon Project Requirements

Template Project Requirements for Healthy, Energy Efficient, Carbon Neutral Schools |

California Edition

Updated April 2025



School District logo – click to place

School District Name

Date Written or Updated

**ENVELOPE COMMISSIONING:** Envelope commissioning will be prioritized in modernization projects, as with all capital projects. This process begins with a blower door assessment and thermal imaging of the current building shell (where it will be retained) to identify leakage areas of concern. Existing envelope improvements should be prioritized based on the building testing results to ensure updates are maximizing performance improvement. Design teams should refer to the technical specifications of the [Advanced Energy Design Guide for K-12 School Buildings](#) for further details on building and building envelope commissioning.


The chart below summarizes which elements will be incorporated into each modernization and retrofit project and which will only be included on a case-by-case basis. Design teams will consider the synergies with planned scope of work, available funding, and site-specific design parameters.

Add in any additional scope items that you would like attended to in capital modernization projects. Make sure to note if these are mandatory or case-by-case. Also be sure to check the mandatory and case-by-case distinctions here are accurate for your district.

SCOPE See further details below	MODERNIZATION	
	Mandatory	Case-by-case
Envelope air sealing and insulating walls and openings	✓	
Roofs insulation, rainwater collection		✓
Glazing & Shading heat minimization, high performance windows		✓
Lighting LED lighting & controls	✓	
Electrical energy monitoring	✓	
Metering submetering		✓
Kitchen electrification & ENERGY STAR energy-efficient equipment	✓	
Heating electrification & maintainability		✓
Ventilation heat recovery & filtration		✓
Controls set points & operating hours	✓	
Domestic Hot Water recirculation pumps & pipe insulation	✓	
Plug Loads are measured & controlled	✓	
Water backflow device & high-efficiency fixtures	✓	
Schoolyard green schoolyards, stormwater mgmt. & rainwater collection		✓
Materials CalGreen, CA Section 01360 & CA Buy Clean	✓	
Renewables Onsite solar PV, storage		✓
Zero Energy Ready roof solar readiness	✓	

## Carbon Neutral Schools Resolution Template

Carbon Neutral Schools Resolution Template



School District logo – click to place

School District Name

Resolution Number #

RESOLUTION TO ESTABLISH GOALS FOR ENERGY EFFICIENCY, CLEAN ENERGY AND CARBON NEUTRALITY

Instructions: Fill in any of the sections underlined in green. You may add any other local information or aligned initiatives into this release. Be sure to include your logo, photos, and secure quotes from involved board members, your Superintendent, or anyone else in support of your work. There are several examples of language for quotes and other sections you can use in the blue boxes below certain sections. Feel free to use this language or develop your own. This sample language is noted and in *italics* and can be easily deleted by clicking on the blue box and deleting.

WHEREAS, the School District name community is experiencing the detrimental effects of climate change through increased temperatures, extreme weather events, changes in the forms and timing of precipitation and runoff, any regionally specific effects, and other environmental disruptions; and

(Example for text above):  
...increased wildfires and associated poor air quality, more frequent and intense storms, major flooding events

WHEREAS, any local or jurisdictional adopted and aligned resolutions; and

(Example for text above):  
WHEREAS, City Council formally adopted a resolution to achieve 100% renewable energy by 2032; and

WHEREAS, the School District Board is committed to making positive, tangible changes to mitigate climate change, and to ensure that every effort is made to conserve energy and natural resources while exercising sound financial management; and

WHEREAS, School District students and staff are entitled to safe and healthy working and learning environments that reflect recommendations of reliable scientific studies indicating that student achievement and attendance and teacher and staff retention are improved when their

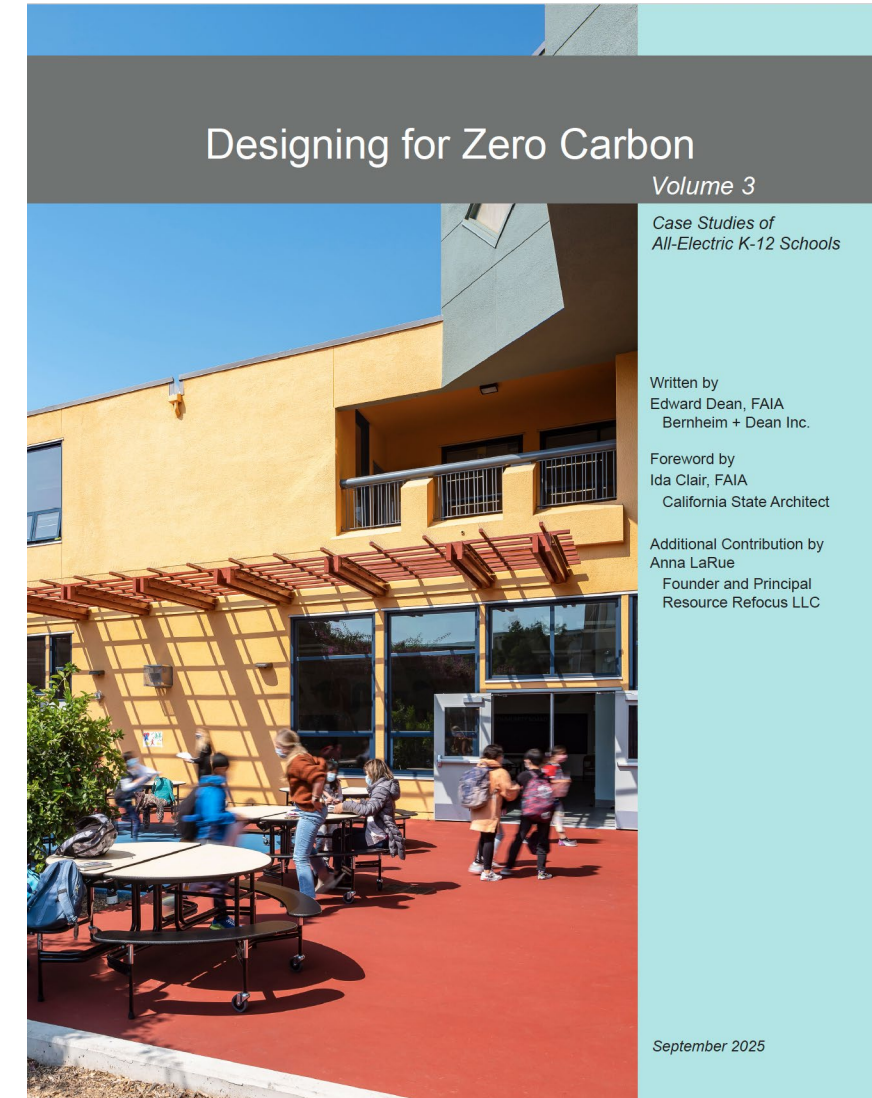
© New Buildings Institute 2025

# All-Electric School Case Studies

## *Designing for Zero Carbon: Volume 3, Case Studies of All-Electric K-12 Schools*

PDF: <https://calbem.ibpsa.us/resources/case-study-books/>

Flipbook:  
<https://online.flipbuilder.com/bernheimdean/qost/>



# NBI Schools Help Desk!

- Do you need 1:1 coaching or support?  
Email [schools@newbuildings.org](mailto:schools@newbuildings.org) to receive support!
- Topics include but not limited to:
  - Funding and grant support
  - Stakeholder engagement
  - Energy management
  - Goal setting and planning
  - Indoor air quality (IAQ)
  - Technologies and systems
  - Solar and renewables
  - Resilience



Thank You!

**Questions?**