



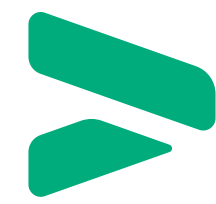
Energy, Construction, & Utilities

Regional Industry Advisory Meeting

Building Electrification & Energy Efficiency Related Occupations



August 11th, 2022



Housekeeping



Enable your video camera (optional)



Please stay on  unless you are called on to ask a question



Submit all questions and commentary using the chat function



This meeting will be recorded and will be provided as part of the post-meeting materials

Welcome & Introduction

Renee John, Valley Vision
Director of Workforce Development



Thank you

to all of our supporters



Agenda

2:00 PM: Welcome and Introduction

2:05 PM: Legislative Drivers & Building
Electrification

2:25 PM: Labor Market & Trend Analysis

2:55 PM: Industry Panel Discussion

3:45 PM: Community College Spotlights

3:55 PM: Conclusion

Welcome & Introduction

Shiinder Gill, PhD
Assistant Director Employer Partnerships
Energy, Construction, and Utilities, North Region
California Community Colleges



Legislative Drivers - Building Electrification

Angelina Olweny, Valley Vision
Project Associate, 21st Century Workforce



➤ Clean and Healthy Buildings

- Governor Gavin Newsom Goal
 - 3 million climate-ready homes
 - 50 percent of investments to low-income and disadvantaged communities
 - 6 million heat pumps by 2030

Reference: <https://www.gov.ca.gov/2022/07/22/governor-newsom-calls-for-bold-actions-to-move-faster-toward-climate-goals/>

➤ California Energy Commission

- California Energy Commission (CEC) key role
- Building Energy Efficiency Standards (Energy Code)
- Energy Code is updated every three years

➤ Energy Code for 2022

- Advocates for efficient electric heat pumps
- Establishes electric-ready requirements for new homes
- Expands solar, photovoltaic, and battery storage standards
- Strengthens ventilation standards to improve air quality

Building Efficiency Standards

Title 24

- Title 24, Part 6 (Energy Code) regulates state building energy efficiency requirements for residential and nonresidential buildings, including newly constructed projects, additions, and alterations.
- Title 24, Part 11 (CALGreen) formally known as California Green Buildings Standards Code – State mandated green building code.
 - This code promotes the design and construction of buildings that have a positive environmental impact and enhances sustainable construction practices.
- Title 24, 2.5 - 5 contains additional regulations related to energy efficiency standards for residential and nonresidential buildings.

California Public Utilities Commission

- California Public Utilities Commission (CPUC) regulates utilities and services including electrical energy and natural gas.
- CPUC staff proposal to phase out energy efficiency natural gas incentives over the next 10 years
- CPUC staff proposal to eliminate gas line extension allowances, 10 year refundable payment options, and 50 percent discount option
- Demand flexibility policies and modify electric rates

Reference: www.cpuc.ca.gov

Legislative Drivers & Building Electrification

Laura Tuller, City of Sacramento
Associate Planner, Community Development Department



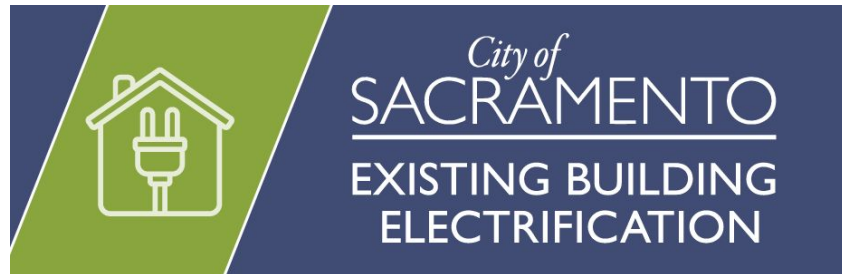
City of Sacramento Existing Building Electrification Strategy



City of
SACRAMENTO
EXISTING BUILDING
ELECTRIFICATION



- ▷ Starting in 2023, **new low-rise construction** must be all electric
- ▷ Starting in 2026, **all new construction** must be all electric



- ▷ Long-term policies to transition **existing buildings** to all electric by 2045
- ▷ **Strategy** draft by end of 2022

Why is Sacramento electrifying our buildings?



Greenhouse gas emission reductions



Community health



Resilience and safety



Energy affordability



Equity

What are the **job impacts**?

Existing Building Electrification Strategy

Policies and programs to transition to all-electric existing buildings by 2045



Demand for residential and commercial retrofits

Appliance replacements

Wiring and panel upgrades

Energy efficiency improvements

Solar installation

Energy audits

Other retrofits



Demand for workers to retrofit buildings

Electricians

HVAC technicians

General construction laborers

Retrofitting **existing homes**

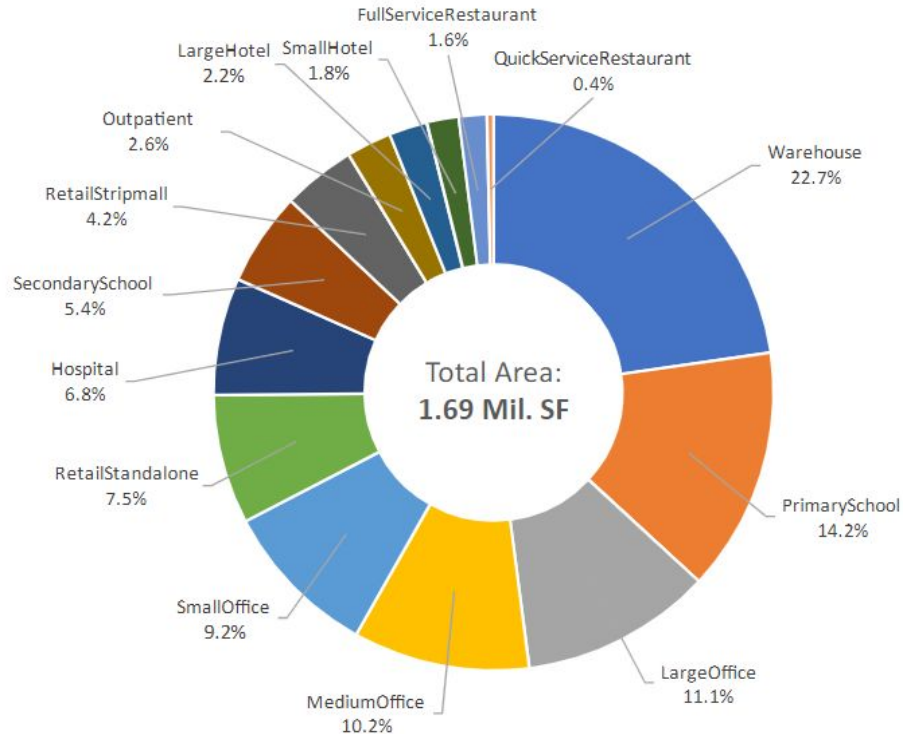
City of Sacramento Housing Units, 2020

Housing Type	Units
Single-unit	132,089
Small multi-family (2-4 units)	18,869
Large multi-family (5+ units)	44,819
Mobile home/other	3,194
Total	198,971

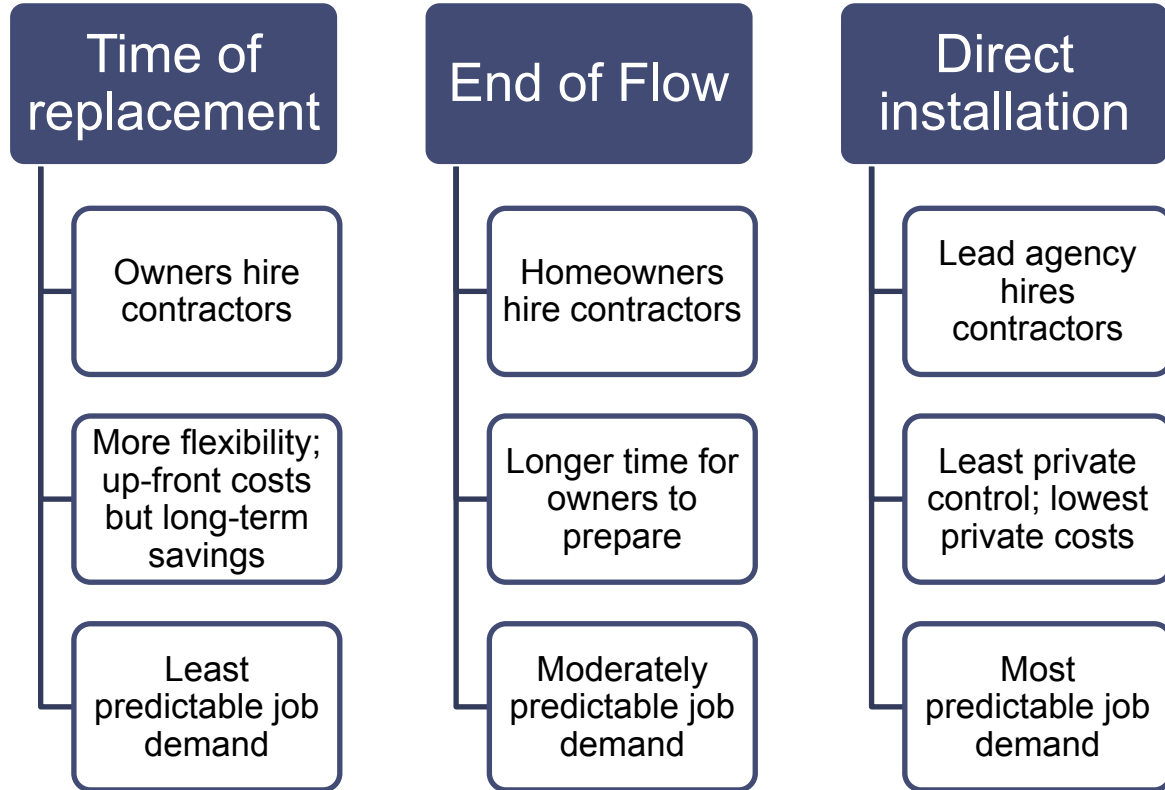
Retrofitting **non-residential buildings**

- Almost 5,000 commercial buildings
- 4,000+ industrial and other buildings

Total Commercial Buildings Area Breakdown - Sacramento, CA



Retrofitting existing buildings: example policies



Questions?

▷ Contact Us:

- Laura Tuller, ltuller@cityofsacramento.org

▷ Learn More:

- www.cityofsacramento.org/SacExistingBuildingElectrification
- <http://www.cityofsacramento.org/SacElectrificationOrdinance>

Labor Market & Trend Analysis

Ebony J. Benzing, MPA
Research Manager
North/Far North Center of Excellence
Los Rios Community College District





Greater Sacramento Building Electrification Workforce

Thursday, August 11, 2022

Thursday, April 28, 2022

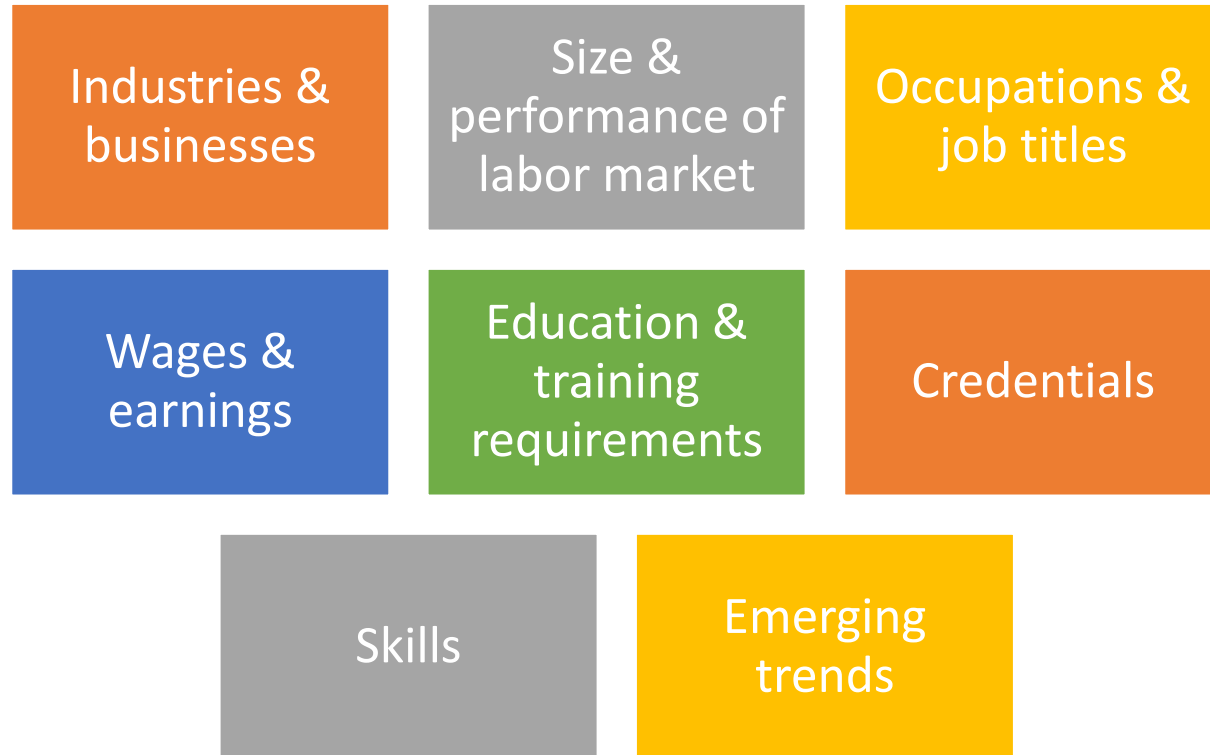


Who is the Center of Excellence?



Region	Director
North/ Far North	Aaron Wilcher (North)
	Sara Phillips (Far North)
Bay Area	John Carrese
Central	Nora Seronello
South Central	Adele Hermann
Los Angeles	Luke Meyer
Orange County	Jesse Crete
Inland Empire/Desert	Michael Goss
San Diego/Imperial	Tina Ngo Bartel
Statewide	Laura Coleman

Typical COE Research Questions



- What is the employment **outlook** for students?
- What **skills** and **credentials** are needed?
- What **programs** look ripe for investment?

Definition Electrification
Occupations

Estimated Avg. Annual Job Change in California

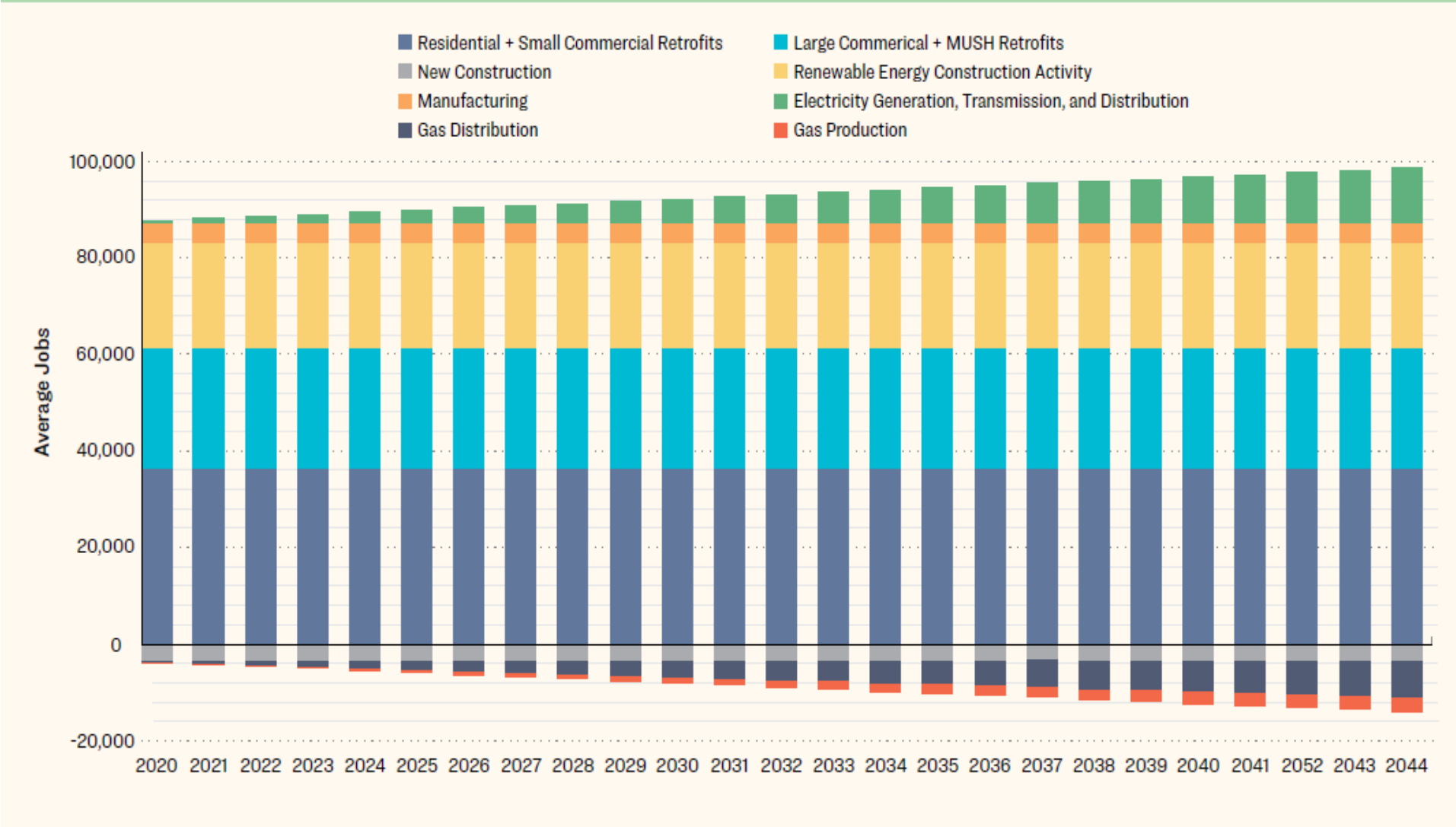
Greatest Increases:

- Building Retrofits (+42-81K jobs)
- Renewable Energy Construction (+20-23K jobs)

Greatest Decreases:

- Gas Production and Distribution (down 7-14K jobs)
- New construction (down 3.1-3.6K jobs; due to labor savings assoc. with new all electric construction)

ES Figure 3. Average Annual FTE Jobs Due To Building Electrification



Source: UCLA Luskin Center, "California Building Decarbonization Workforce Needs and Recommendations," Nov. 2019

Electrification Workforce in Greater Sacramento

Existing Building Retrofits

- Electricians
- Plumbers & Pipefitters
- HVAC/R Installers and Mechanics

New Building Construction

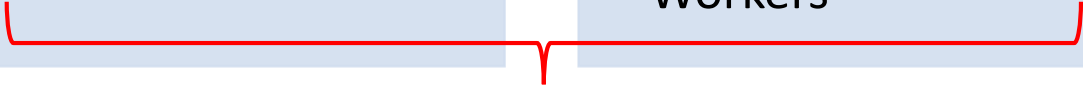
- Carpenters
- Construction Laborers
- Construction and Building Inspectors
- Construction Management
- Supervisors of Construction Workers

Greening and Weatherization

- Solar PV Installers
- Glaziers (Glass)
- Architects & Engineers
- Other management and implementation jobs

Gas and Electric Infrastructure and Utilities

- Power-Line Installers and Repairers
- Gas and Power Plant Operators
- Electrical Repairers, Powerhouse, Substation, and Relay



Today's Focus

Traditional Labor Market Information

- Source: Lightcast (formerly EMSI Burning Glass)
- Projections 2020 - 2025
- 7-county North (Greater Sacramento) subregion

Greater Sacramento's Building Electrification Retrofit and Construction Workforce

51,876

Jobs in 2020

57,742

Jobs in 2025

11%

2020 – 2025 Projected
Change

(9% Avg. Change in Sac)

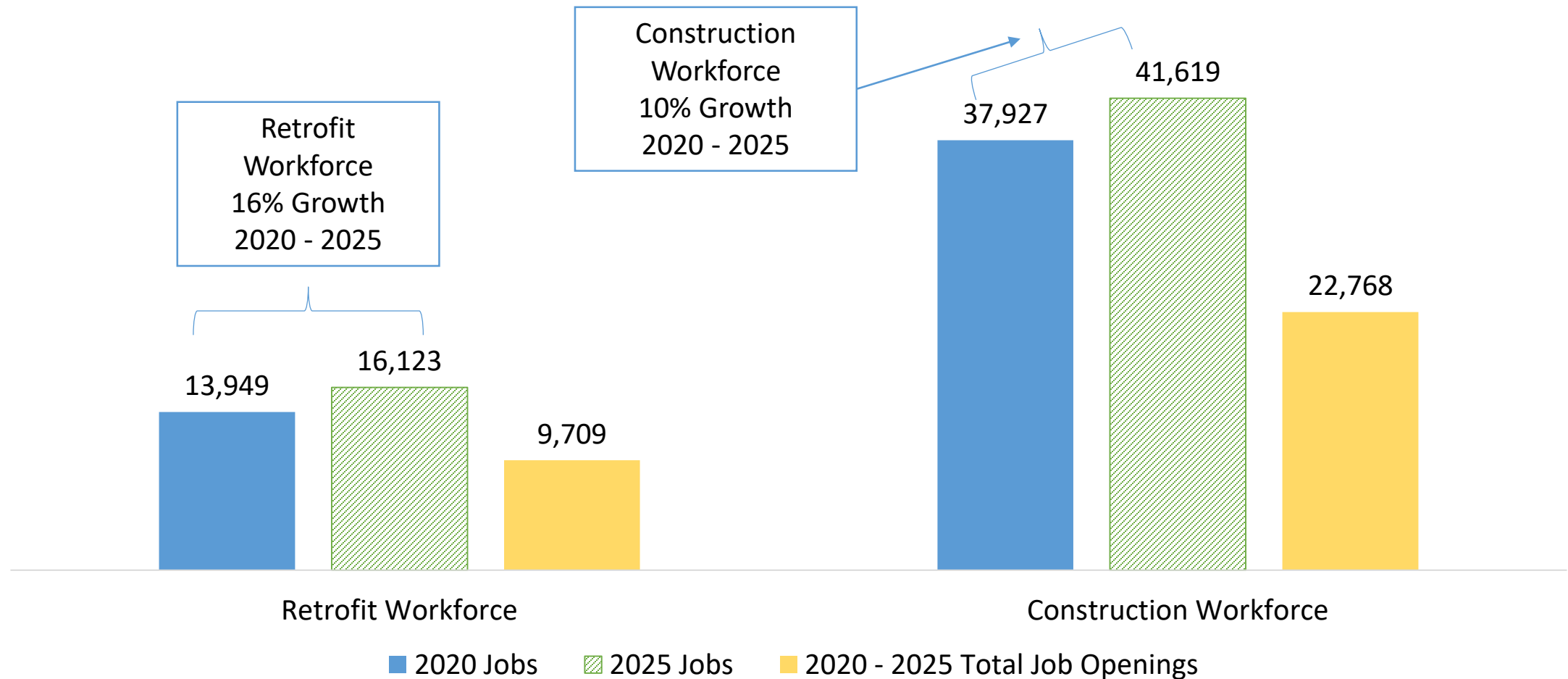
5,866

New Jobs by 2025

6,495

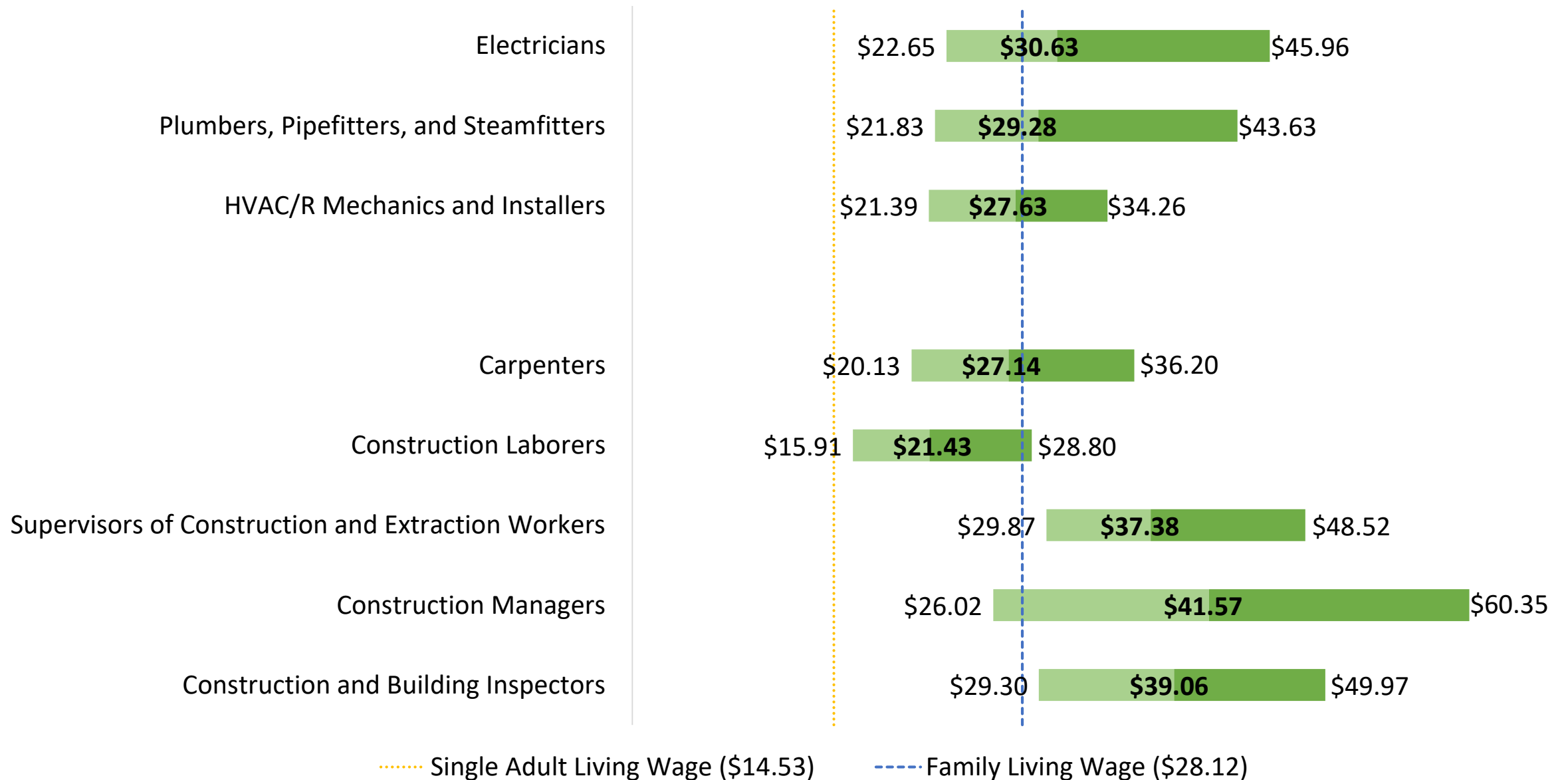
2020 – 2025 Annual Job
Openings

Greater Sacramento's Building Electrification Workforce Projected Job Growth and Demand



Occupation	2020 Jobs	2025 Jobs	2020 - 2025 Projected Change	2020 - 2025 Projected % Change	2020 – 2025 Annual Job Openings
Electricians	6,589	8,087	1,498	23%	1,039
Plumbers, Pipefitters, and Steamfitters	3,999	4,351	353	9%	501
HVAC/R Mechanics and Installers	3,361	3,684	323	10%	402
Retrofit Workforce	13,949	16,123	2,174	16%	1,942
Carpenters	14,674	14,792	118	1%	1,501
Construction Laborers	12,011	13,262	1,251	10%	1,482
First-Line Supervisors of Construction Trades and Extraction Workers	5,757	7,161	1,404	24%	915
Construction Managers	4,561	5,348	787	17%	511
Construction and Building Inspectors	923	1,057	133	14%	145
Construction Workforce	37,927	41,619	3,693	10%	4,554
Greater Sacramento Electrification Workforce	51,876	57,742	5,866	11%	6,495

Hourly Earnings vs. Living Wages in Greater Sacramento



Job Postings

- Source: Lightcast (formerly EMSI Burning Glass)
- Projections 2020 - 2025
- 7-county North (Greater Sacramento) subregion

417,636

Job Postings in Greater Sacramento Region
July 2021 – June 2022

7,088

Job Postings
Jul 2021 – Jun 2022

1,890

Retrofit Job Posts

5,198

Construction Job Posts

Occupation	No. of Job Postings	Share of Job Postings
HVAC/R Mechanics and Installers	955	51%
Electricians	536	28%
Plumbers, Pipefitters, and Steamfitters	399	21%
Retrofit Job Postings	1,890	100%
Construction Managers	2,170	42%
Construction Laborers	1,536	30%
1 st Line Supervisors of Construction and Extraction Workers	569	11%
Carpenters	487	9%
Construction and Building Inspectors	436	8%
Construction Job Postings	5,198	100%
Greater Sacramento Totals	7,088	100%

Retrofit Employers with the Most Job Postings

Employer	# Job Postings	% Job Postings	Type of Employer
GPAC	52	3%	Staffing
Blue Mountain Air, Inc.	52	3%	HVAC & General Construction Contractor
Johnson Controls	26	1%	Bldg. Automation
ARS - Beutler Air Conditioning & Plumbing	26	1%	HVAC (residential)
Tradesmen International	25	1%	Staffing
Sears	24	1%	Retail Home Services (Refrigeration & appliance repair)
Pacific Gas & Electric	20	1%	Utility
Mark III Construction	19	1%	MEP & Utilities Construction (commercial)
Huft Heating and Air Conditioning	17	1%	HVAC & Plumbing installation and service (residential)
ARS – Rescue Rooter	16	1%	Plumbing (residential)

Source: Lightcast (frmly. EMSI Burning Glass), 2022.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. The Greater Sacramento subregion includes El Dorado, Placer, Nevada, Sacramento, Sutter, Yolo, and Yuba counties.

Construction Employers with the Most Job Postings

Employer	# Job Postings	% Job Postings	Type of Employer
Meritage Homes	123	2%	Single Family Home Construction
GPAC	95	2%	Staffing Company
MasTec	46	1%	Infrastructure Construction
KDC Construction	45	1%	Commercial Construction
Clark Pacific	38	1%	Prefab building systems (Construction + Manufacturing)
People Ready	37	1%	Staffing Company
MDC Holdings (Richard American Homes)	33	1%	Single Family Home Construction
CDM Smith	33	1%	Engineering & Construction Firm
Vanir Construction Management	31	1%	Construction Management Firm
TRC Companies	30	1%	Engineering & Construction Management Firm

Source: Lightcast (frmly. EMSI Burning Glass), 2022.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. The Greater Sacramento subregion includes El Dorado, Placer, Nevada, Sacramento, Sutter, Yolo, and Yuba counties.

Educational Program Supply

- Source: CCCC DataMart, IPEDS, and EMSI Burning Glass
- 7-county North (Greater Sacramento) subregion

Community College Training Programs

American River

- Carpentry apprenticeships
- Electrical apprenticeships (incls. HVAC)
- Plumbing and Pipefitting apprenticeships

Cosumnes River

- Building Inspection Technology (C/D)
- Construction Management Technology (C/D)
- Construction (C/D)
- Construction Pre-Apprenticeship (C)

Sacramento City

- Mechanical Systems Technology (HVAC)(C)
- Mechanical-Electrical Technology (C/D)

Sierra

- Construction Management (T)
- Construction Fundamentals (NC)

Other Postsecondary Training Programs

- Electrical and Electrician training programs
 - National Career Education (NCE), Citrus Heights
 - Independent Training & Apprenticeship (iTAP), La Riviera/Rancho Cordova
 - InterCoast College, Rancho Cordova
- Heating, AC, Ventilation and Refrigeration training Programs
 - Nation Career Education (NCE), Citrus Heights
 - UEI College, Sacramento
 - InterCoast College, Rancho Cordova

North State Building Industry Association Training List

Construction Related Post-Secondary Programs

Find this with live links at <https://www.biaworkforce.com/careers.html>

Career Technical Education At Regional Community Colleges

What is Career Technical Education?

Career Technical Education (CTE) is a term for educational programs that specialize in the skilled trades, applied arts and sciences, modern technologies, and career preparation. A key element of these programs is how coursework integrates academic knowledge with technical and career readiness skills, preparing students with the skills they need to launch into a career.

CTE Programs help students apply the abstract concepts and theories from academic coursework to real world situations, providing them with practical, and relevant skills that will make them more employable upon graduation. CTE programs often provide students with opportunities to gain work experience through internships, work-based learning, and industry-certification opportunities. CTE offers a wide range of learning experiences spanning many different career tracks, including skilled trades such as, automotive technology, construction, welding, and solar technology.

Butte College
[Construction Laborer](#)
[Cabinetmaker](#)
[Electrician](#)
[Construction Supervisor](#)
[Heavy Equipment Operation](#)
[Building Inspection Technology](#)
[Civil Engineering Technology](#)
[Drafting and CAD Technology](#)
[Welding Technology](#)

Folsom Lake College
[Waste/Wastewater Management](#)

For more information, visit:
BIAWorkforce.com or contact us at:
workforce@northstatebia.org

American River College
[Design/Engineering Technology](#)
[Horticulture & Landscape Design](#)
[Solar Energy Systems Design, Estimation, and Sales Certificate](#)
[Welding Technology](#)

Cosumnes River College
[Architectural Design Technology](#)
[Architecture](#)
[Architectural Technology Certificate](#)
[Automotive Mechanics Technology](#)
[Automotive Construction and Design](#)
[Building Inspection Technology A.S. Degree](#)
[Building Inspection Technology Certificate](#)
[Construction A.S. Degree](#)
[Construction Certificate](#)
[Construction Pre-apprenticeship Certificate](#)
[Construction Management A.S. Degree](#)
[Construction Management Certificate](#)
[Green Buildings Certificate](#)
[Horticulture](#)
[Horticulture: Sustainable Irrigation and Water Management Certificate](#)
[Horticulture: Sustainable Landscape A.S. Degree](#)
[Horticulture: Sustainable Landscape Design Certificate](#)
[Interior Building Architecture A.S. Degree](#)
[Interior Building Architecture Certificate](#)
[Solar Installer Certificate](#)
[Technology](#)
[Engineering](#)
[Welding Technology A.S. Degree](#)
[Welding Technology Certificate](#)

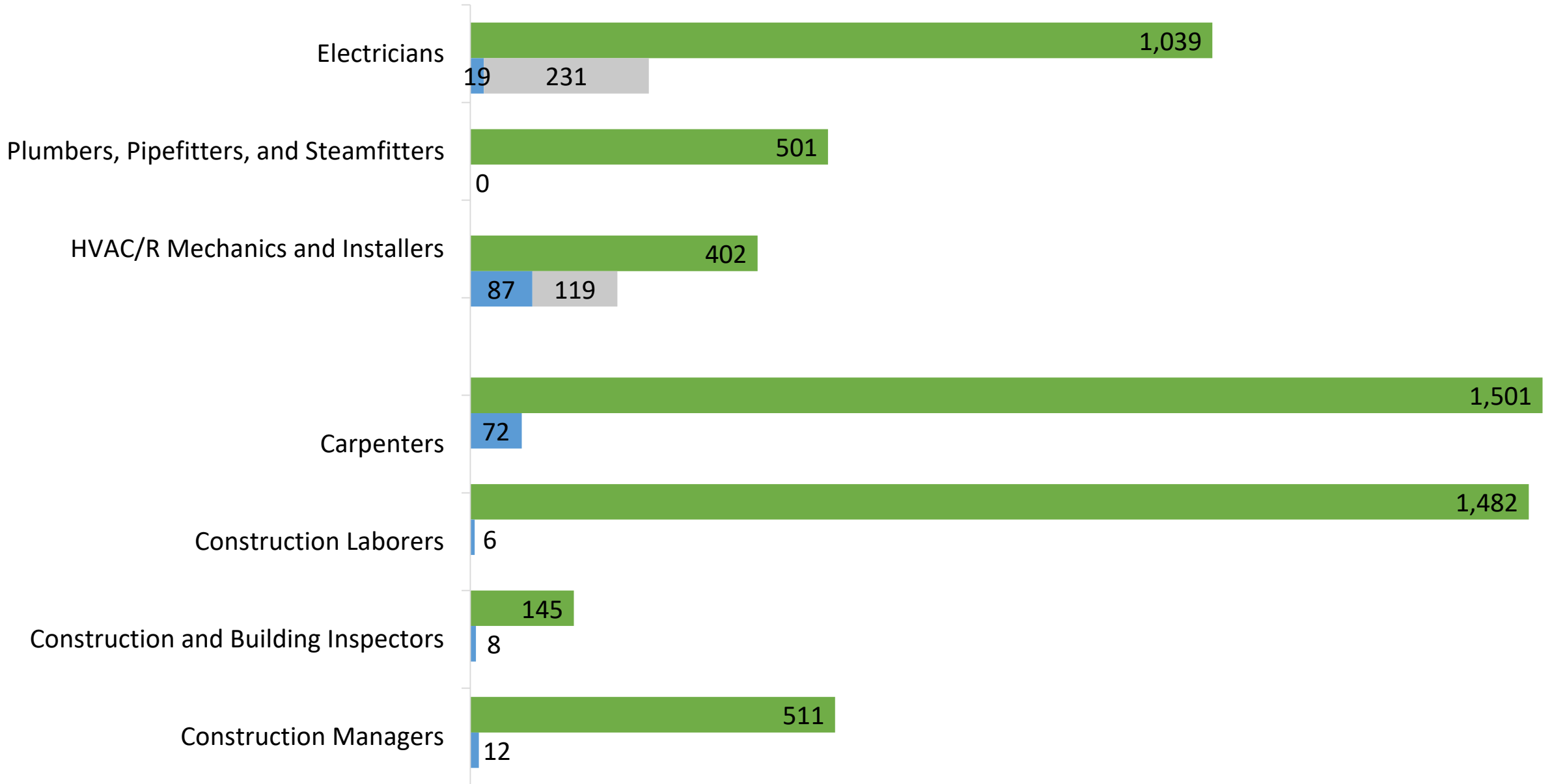
Sacramento City College
[Energy Auditing](#)
[Engineering Design Technology](#)
[Civil Engineering Commercial Building & Energy Auditing Specialist](#)
[Engineering Design Technology](#)
[HVAC Systems Design](#)
[Mechanical/Electrical Technology](#)
[Mechanical Systems Technology](#)



Updated 04.20.21

Job Demand v. Educational Supply

■ Annual Job Openings (2020 - 2025) ■ Community College Avg Annual Supply (18/19 - 20/21) ■ Other Postsecondary Avg Annual Supply (17/18 - 19/20)



Thank You!

- High level of demand for workers in retrofit and construction occupations in Greater Sacramento area
- Gap between demand and educational supply is opportunity to strengthen pipeline for skilled workers in these occupations

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» Industry Panel Discussion



Scott Blunk
SMUD
Electrification Strategist



Rick Larkey
North State Building
Industry Foundation
Technical Director



Hilary Tellesen
GRID Alternatives
Workforce Program
Manager



Rick Wylie
Villara Building Systems
President

➤ Community College Spotlights

American River College:

- LEA for Apprenticeships
- Design & Engineering Technology
- Solar Energy Technology
- Welding Technology
- Electrician Trainee Program

Cosumnes River College:

- Architecture
- Building Inspection Technology
- Solar Energy Technology
- Construction
- Construction Management Technology
- Welding Technology

Sacramento City College:

- Engineering Design Technology
- Mechanical-Electrical Technology

Sierra College:

- Construction Management
- Construction Courses
- Welding Technology

Yuba College:

- Welding Technology
- Drafting Technology

➤ Thank you for joining!

For more information, please contact:

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