

DOCKETED

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Emerald Cities

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Economic Inclusion in Residential Building Electrification



AGENDA

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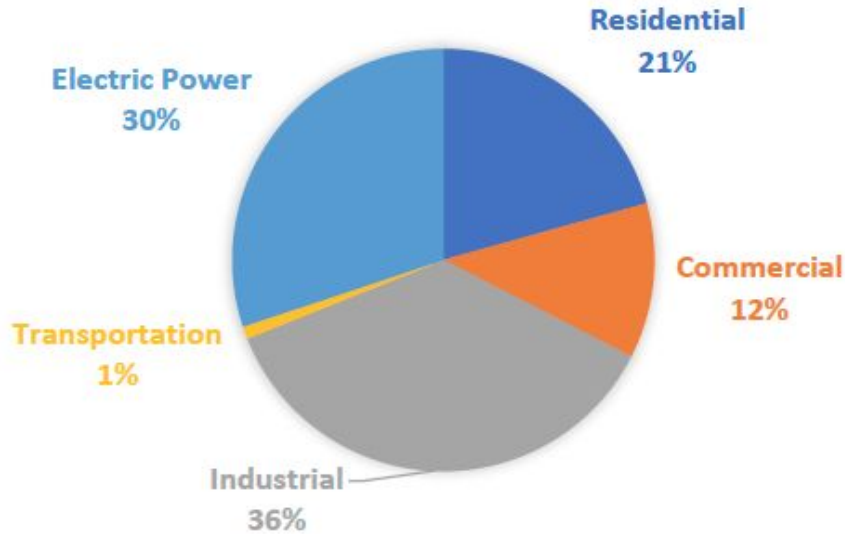
- Address the demand (projects) and supply (workforce) impacts of infrastructure investment and the green economy.
- Expand access to high-wage careers and business opportunities through comprehensive alignment of workforce development resources and contracting and procurement operations to benefit all stakeholders.



Why Residential?

Natural Gas Use by Sector

Figure 3. California Natural Gas Use by Sector, 2018¹⁸



Source: UCLA Luskin Center for Innovation (2019). *California Building Decarbonization Workforce Needs and Recommendations*

Employment Impacts

39-47%
of all
New Jobs

ES Table 1. Potential Employment Impacts – Construction (Excluding Operations and Maintenance)

Type of Work	Sector	Average Annual Change in Employment (2020-2045)***
Existing Building Electrification Construction Activity	Residential Retrofits	26,000–39,300
	Small and Medium Commercial Retrofits	1,700–4,500
	Large Commercial and Municipal, University, School, and Hospital (MUSH) Retrofits **	11,000 –30,900
	District Energy Systems ^{4,**}	3,300–5,900 ⁵
	Subtotal	42,000–80,600
All-Electric New Building Construction Activity	All-Electric New Residential Construction	(3,100)–(3,600) *
Renewable Energy Construction Activity*	Solar Photo Voltaic**	16,400–18,800
	Land-based Wind**	1,000–1,100
	Geothermal**	600–700
	Infrastructure for Grid Connectivity**	2,300–2,600
	Subtotal	20,300–23,200
CONSTRUCTION TOTAL		59,200–100,200

Source: UCLA Luskin Center for Innovation (2019). *California Building Decarbonization Workforce Needs and Recommendations*

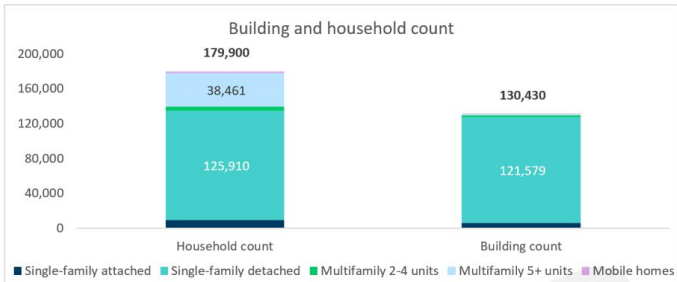
Equity in Electrification

- Low-income & communities of color are the worst hit by the climate crisis and bear unfair utility burdens
- Electrification policies should put equity at the forefront so as to not exacerbate climate impacts and racial inequities

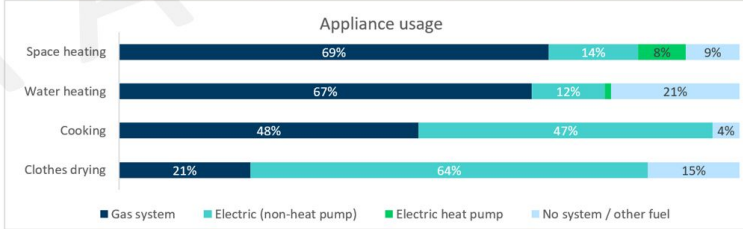
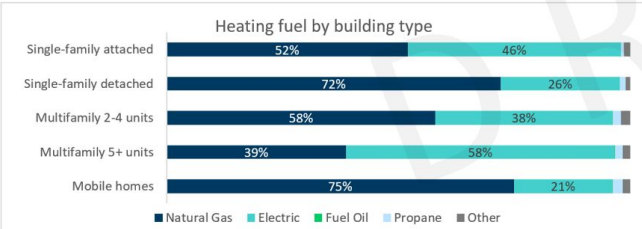


Equity in Electrification

Dashboard: Sacramento Sample Building Inventory



Key Statistics	Single-family	Multi-family	Total
Number of buildings	127,269 (98%)	3,161 (2%)	130,430
Number of households	135,041 (75%)	42,579 (24%)	179,900
% of houses built before 1978	54%	84%	54%
% of units renter occupied	33%	97%	52%
% of households with A/C (including RAC ¹)	90%	85%	89%
% of population in disadvantaged community	-	-	24%
% of total roofs viable for solar	-	-	89%
% of households in 0-100% AMI ²	49%	70%	55%
% of households in 0-30% AMI	13%	29%	18%
Avg. energy burden ³ of households in 0-30% AMI	13%	8%	11%



1. Room Air Conditioning
2. Area Median Income
3. Percentage of household income spent on energy costs

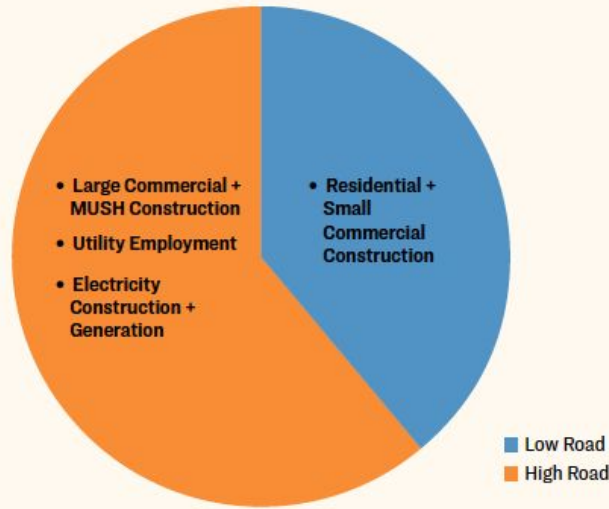
Source: RMI (July 2021)



The Challenge

Not all Jobs are Created Equal

ES Figure 4. Distribution of High-Road and Low-Road Jobs



Source: UCLA Luskin Center for Innovation (2019). *California Building Decarbonization Workforce Needs and Recommendations*

“Contractors who work in the residential sector have historically worked under a low-bid contractor model, where the lowest bidder is typically awarded the contract.”

Source: CEC (2011). *Achieving Energy Savings in California Buildings*

Residential construction workers earn 33% less per year than non-residential construction workers

Non-residential contractors’ contributions to fringe benefits are triple those of residential contractors.

Source: Littlehale, S. (2019). *Rebuilding California: The Golden State’s Housing Workforce Reckoning*

Need to ensure that jobs created by
residential building electrification
do not go low road





Recommendations

Embed diversity, labor standards, contractor and worker training,
and funding for the above, into building electrification policies.



Collaboration

Engage communities, workers and contractors early in the process for input and collaboration

Contractor Capacity Building and Workforce Training

Train SMWDBE contractors on new technologies, on contract opportunities

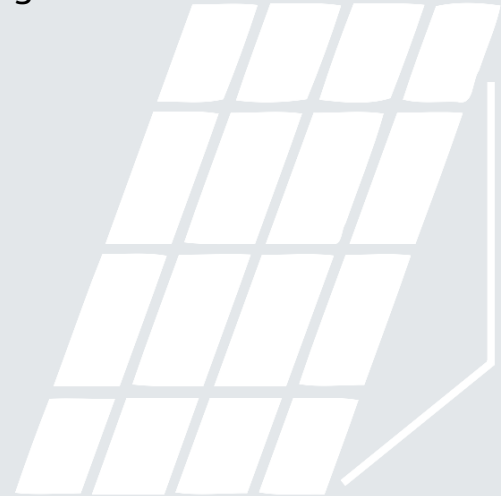
Build training pipelines tailored to the residential construction sector

Creative Thinking

Aggregate projects?

Contractor databases?

Wage standards?



THANK YOU!

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