



Electric Service Optimization for Single-Family Building Decarbonization September 7, 2022

Resources Cited:

Developing a Single Family Home Electrification Plan - including panel optimization and electrical load calculations

[Guide to All-Electric Single-Family Retrofits](#)

[Watt Diet Calculator](#)

[Zero Carbon Home Calculator](#) (in development)

Cost of and Timing of Electric Service Upgrades in Retrofits

[Service Upgrades for Electrification Retrofits Study for PG&E](#)

Codes and Rules

[California Electrical Code](#)

[San Francisco Electrical Code](#)

[PG&E Electric and Gas Service Requirements \(PG&E Greenbook\)](#)

Incentives and Technical Support from BayREN Home+

[Rebates for Homeowners](#) for efficient electrification and comfort

[Contractors: Access BayREN Rebates for your customers](#)

[Free Consult with a Home Energy Advisor](#)

Also: [The Switch is On](#) provides statewide info

Homeowner Tax Credits for Single Family (from US Inflation Reduction Act)

Efficiency: The Inflation Reduction Act substantially increased tax credits for residential efficiency and electrification upgrades. Qualifying improvements purchased and installed in 2023 or later are eligible for 30% tax credit, up to \$3,200 per year. Eligible retrofits include heat pumps, heat pump water heaters, weatherization/insulation improvement, and more. *The Inflation Reduction Act set significant efficiency specifications; at the time of writing (Sept 7, 2022) guidance about specific qualifying equipment is not yet available from the IRS.*

Solar and Electric Vehicles: The IRA also restored the Solar Investment Tax Credit to 30% for photovoltaic systems installed before 2034, and added new tax credits for purchase of new and used electric vehicles, as well as residential chargers.

[PG&E Energy Classes](#) on Single Family Electrification

Live	27-Sep	All-Electric Home Solutions: Applied Hydronic Systems
	29-Sep	Overcoming the Roadblocks to Residential Electrification
	11-Oct	Implementing Heat Pump Water Heaters in Replacement Scenarios: Why They Make Sense
	13-Oct	Overcoming Installation Challenges for Heat Pump Water Heater Retrofits
	18-Oct	Selling Heat Pumps for HVAC Retrofits: System Efficiencies, Costs, and Why They're Ideal for California
	20-Oct	Overcoming Installation Challenges for Heat Pumps in HVAC Retrofits
	27-Oct	ACCA Manual H, Residential Heat Pump, Design and Installation
	27-Oct	Electric Heat Pumps for Water Heating
	1 - Nov	Electric Heat Pumps for Space Heating and Cooling
On-Demand	<ul style="list-style-type: none"> • Heat Pump Technologies for Space Conditioning and Water Heating • Induction Cooking and Holding - Energy Efficiency and Performance for Residential Kitchens • Case Studies for Residential Electrification Retrofits • Residential Heat Pump Installation and Commissioning for Installers, Raters and Commissioning Agents • Home Electrification Retrofits Without Upsizing the Electric Panel • Electrification for Small Houses: ADU's, Tiny Homes, and Manufactured Homes 	

All classes are accessible online. Classes for multifamily, commercial, and municipal/institutional contexts are available via the same [PG&E Energy Classes](#) site.