

DOCKETED

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Low-income Single Family Electrification

Scott Blunk
July 12, 2021

Powering forward.
Together.





Flexible pathway to zero carbon by 2030

Natural gas generation repurposing

Goal to retire 2 power plants in 2024-2025 and re-tool fleet

to drastically reduce operations and emissions.



Proven clean tech

90% reduction of greenhouse gas emissions*

>3,000 MW of new renewable energy & storage –equivalent to energy needs of more than 600,000 homes.

Growing rooftop solar and batteries.



New tech & business models

Pilot & scale new projects & programs

Research game changing technologies and alternative fuels.



Financial impact & options

Rate impacts limited to rate of inflation

Expand partnerships and grants to offset costs & generate operational efficiencies.



100%

Zero carbon by 2030

Work with all our communities to reduce greenhouse gas emissions together.

Partner and collaborate with community organizations, attract business, innovation and jobs to Sacramento.

Alignment with SMUD's Sustainable Communities Initiative.

* ~ 1.8 million metric tons per year



Electrification at SMUD

CHEAPER | SAFER | HEALTHIER | BETTER



Goal → 100% Electrification of Low Income by 2040, all by 2045

2018 - Current

Launched Program Offerings
in All Sectors

Carbon-based metric for
efficiency portfolio created

2,500+ Equivalent electric
home conversions

18% All-electric buildings
starting in 2018

2021 - 2030

New construction codes

Full-service / turnkey
offerings

Financing options +
infrastructure for customers

34% All-electric buildings by
2030

2030 - 2040

All new appliance and
vehicle sales electric by
~2030

100% of low-income
customers converted to
electric by 2040

80% All-electric buildings by
2040

\$1 Billion SMUD Commitment + seeking \$300M in additional external funding

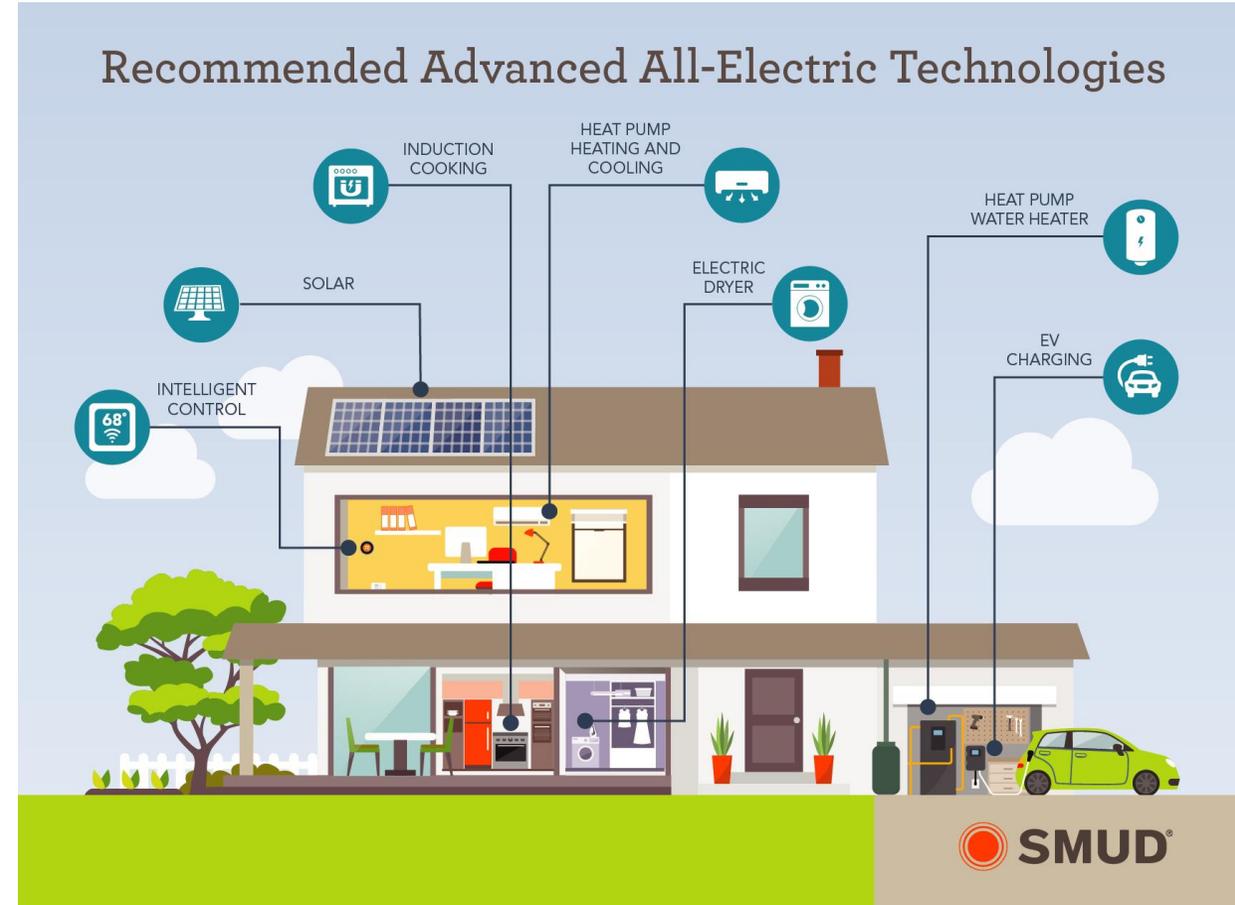
Low Income Electrification, Direct Install

Goal: 100% electrified by 2040 (all buildings by 2045)

- 85k low-income customers
 - 40k single family homes
 - 8k all-electric in 2018

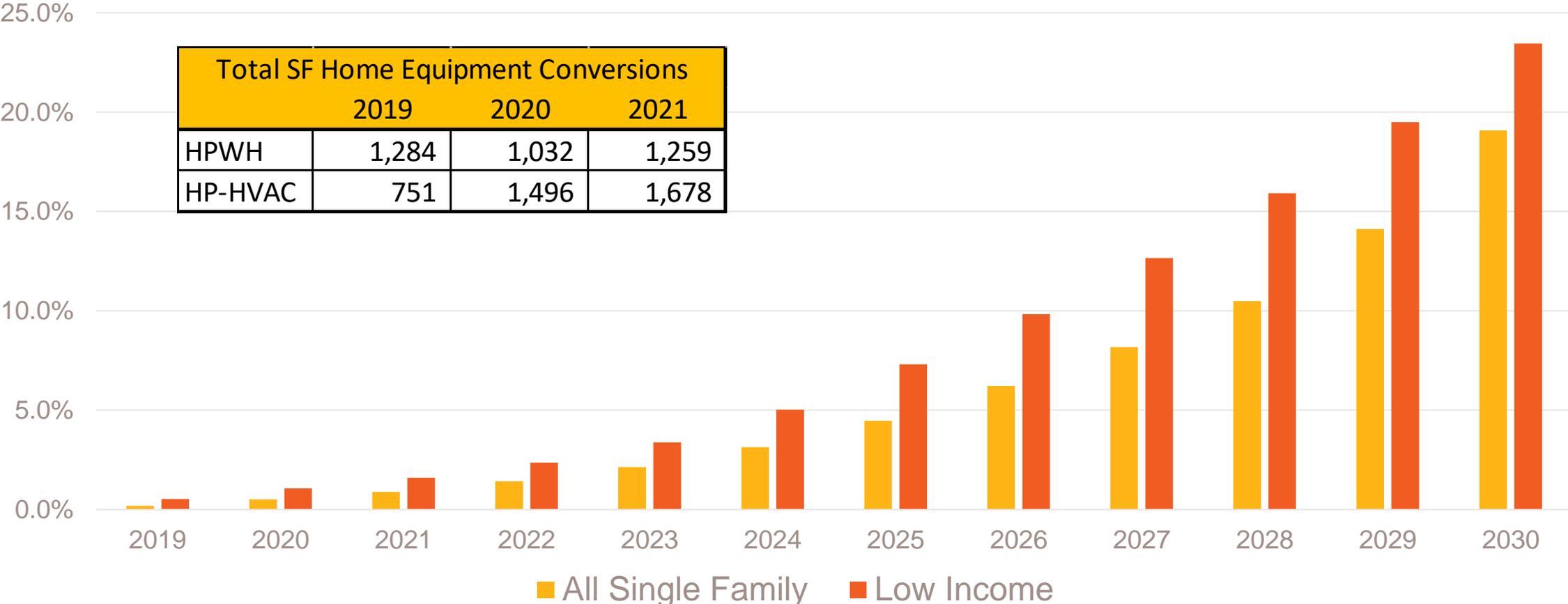
Program History

- Low-income program electrification started in 2019
- ~1,000 gas appliances have been eliminated
- **Electrify every end use** is the goal at each customer touch point regardless of age or condition of the existing gas equipment



Gas Single Family Home Conversions

Percentage Gas Homes Converted



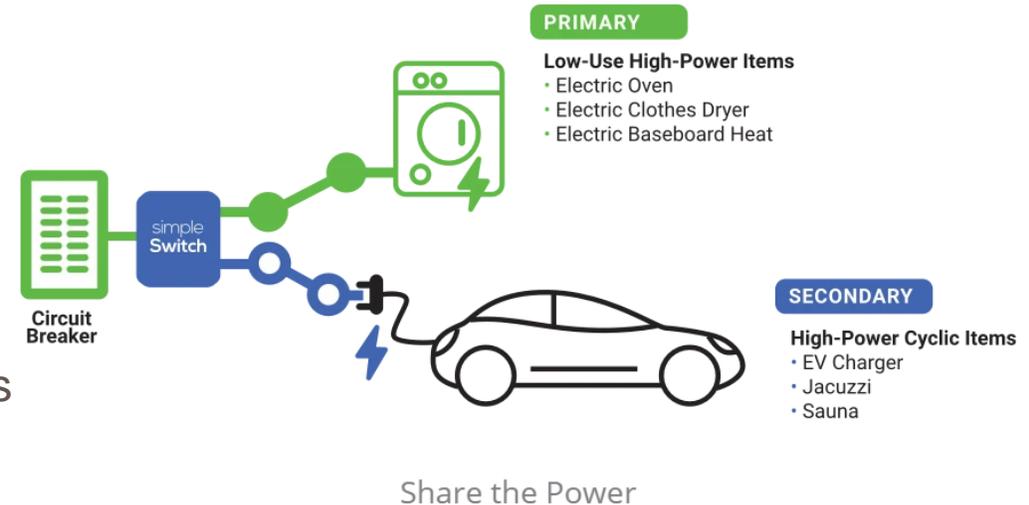
Low Income Electrification, Findings

Electrifying every end use is challenging

- Panel upgrades:
 - \$4,725 average panel upgrade cost but can be as high as \$9,000+
 - Vegetation and current clearance requirements can be challenging
 - Timing: panels often require coordination with multiple departments inside and outside of SMUD
- Simple Switch
 - Cost ~\$250, have installed ~25, and can save thousands on panel replacements / upgrades
- Induction: location → wiring, availability, costs
 - Portable units are given when cooking is not replaced

<https://simpleswitch.io/>

HOW IT WORKS

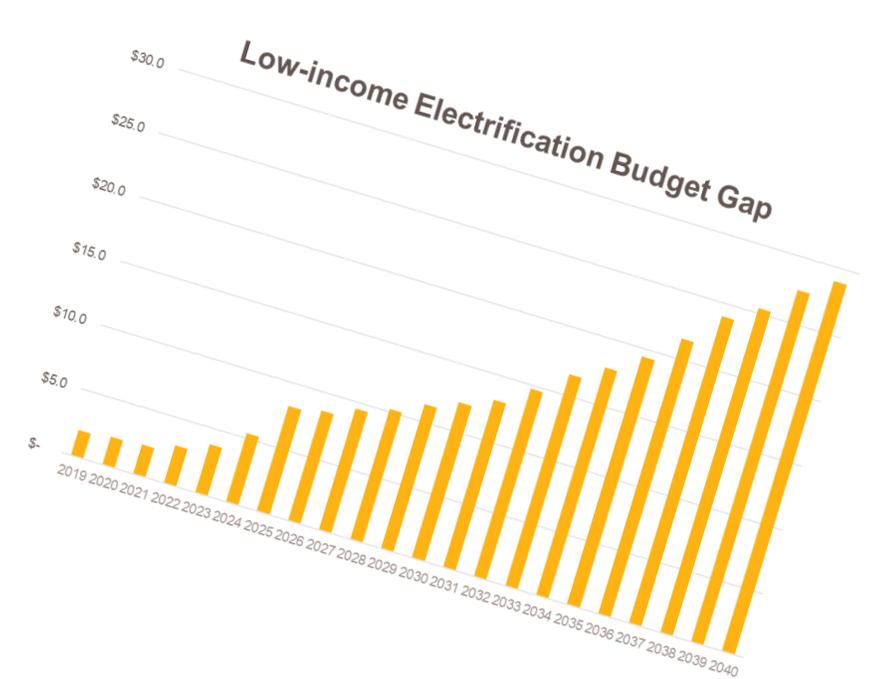


Incentives and Savings

		SMUD Incentive	Lifetime Carbon (tonnes)	\$/tonne	Super RIM 2021	Super RIM 2018-2045
Market Rate	HPWH	\$ 2,500	11.6	\$ 216	\$ 251	\$ (26)
	HP-HVAC	\$ 3,000	27.1	\$ 111	\$ 115	\$ (52)
	Induction	\$ 750	0.8	\$ 938	\$ 1,189	\$ (190)
Electrical Efficiency	Air Cond	\$ 500	2.6	\$ 192	\$ 1,114	n/a
	T-Stat	\$ 50	0.2	\$ 250	\$ 433	\$ 573
	Freezer	\$ 50	0.06	\$ 833	\$ 1,050	\$ 1,943
Low Income	HPWH	\$ 2,200	11.6	\$ 190	\$ 251	\$ 220
	HP-HVAC	\$ 9,500	22.2	\$ 428	\$ 122	\$ 81
	Induction	\$ 1,700	0.8	\$ 2,125	\$ 682	\$ 434

Outlook and Challenges

- Move the existing building market
 - Emphasize electrification of existing buildings in code
 - *Improve code enforcement*
 - Create awareness through engaging consumers and contractors
- Moderate income program
 - Nonqualified “low income” – financing?
- Balance grid decarbonization with rates
- Budget gap in low-income ~\$300M



Thank you

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