

Heat Pump Market Transformation

Affordable, Scaled, Informed

October 13th, 2022





Erin Kempster
Decarbonization Strategy Fellow



TECH in Context

What is TECH Clean California?

- \$265 million heat pump market transformation initiative
- Funded from Investor-Owned Utility gas cap and trade
- Launched in 2021
- Intended to put California on a path to carbon-free homes by 2045
- ~\$70 million in incentives, remaining funds for market transformation activities; 6 pilots and 11 quick start grants to-date
- Incentives delivered at point-of-sale

	Current	Interim Goals
 Heat Pump Water Heating	< 2% installed base	6 million heat pumps installed by 2030 Climate ready / friendly homes: <ul style="list-style-type: none"> • 3 million by 2030 • 7 million by 2035
 Heat Pump HVAC	< 5% installed base	50% of funding delivered to low-income households or disadvantaged communities

Installed base estimates based on RASS 2019 data: https://webtools.dnv.com/CA_RASS/

TECH Team:



RECURVE





Tre'Laine

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High-Efficiency Electric Home Rebate Act (HEEHRA)

- California: \$321m
- Massachusetts: \$82m
- Minnesota: \$82m
- Oregon: \$60m

Funding dwarfs previous amounts and is 100% focused on low- and moderate-income households

Estimates indicate about 11.5m heat pump installs could result from IRA

*Fantastic!
But that's around 10% of remaining households.*

We can't transform the market through incentives alone.

TECH Team:

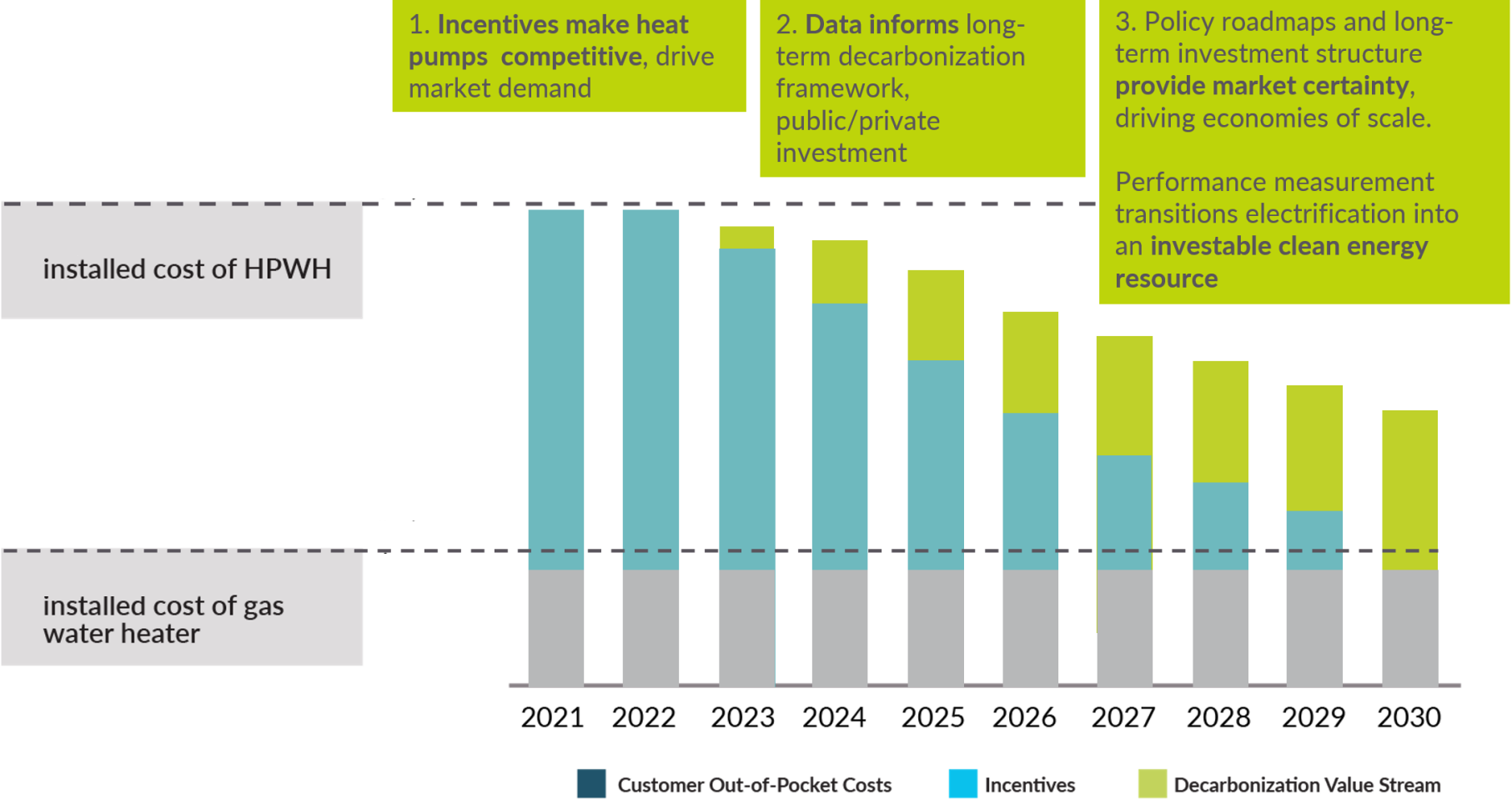


RECURVE

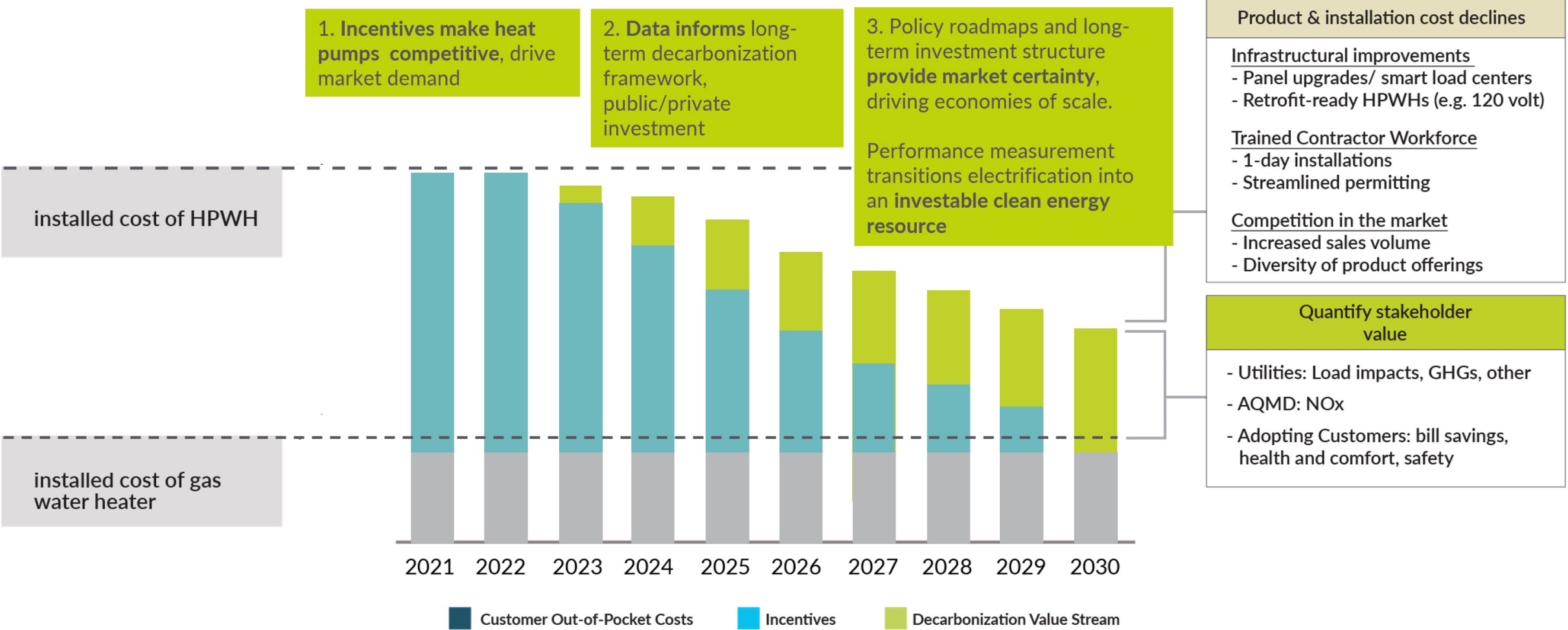


Tre'Laine

Theory of Change – Bending the Cost Curve



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Lessons Learned (so far)

Plan for scale and keep it simple:

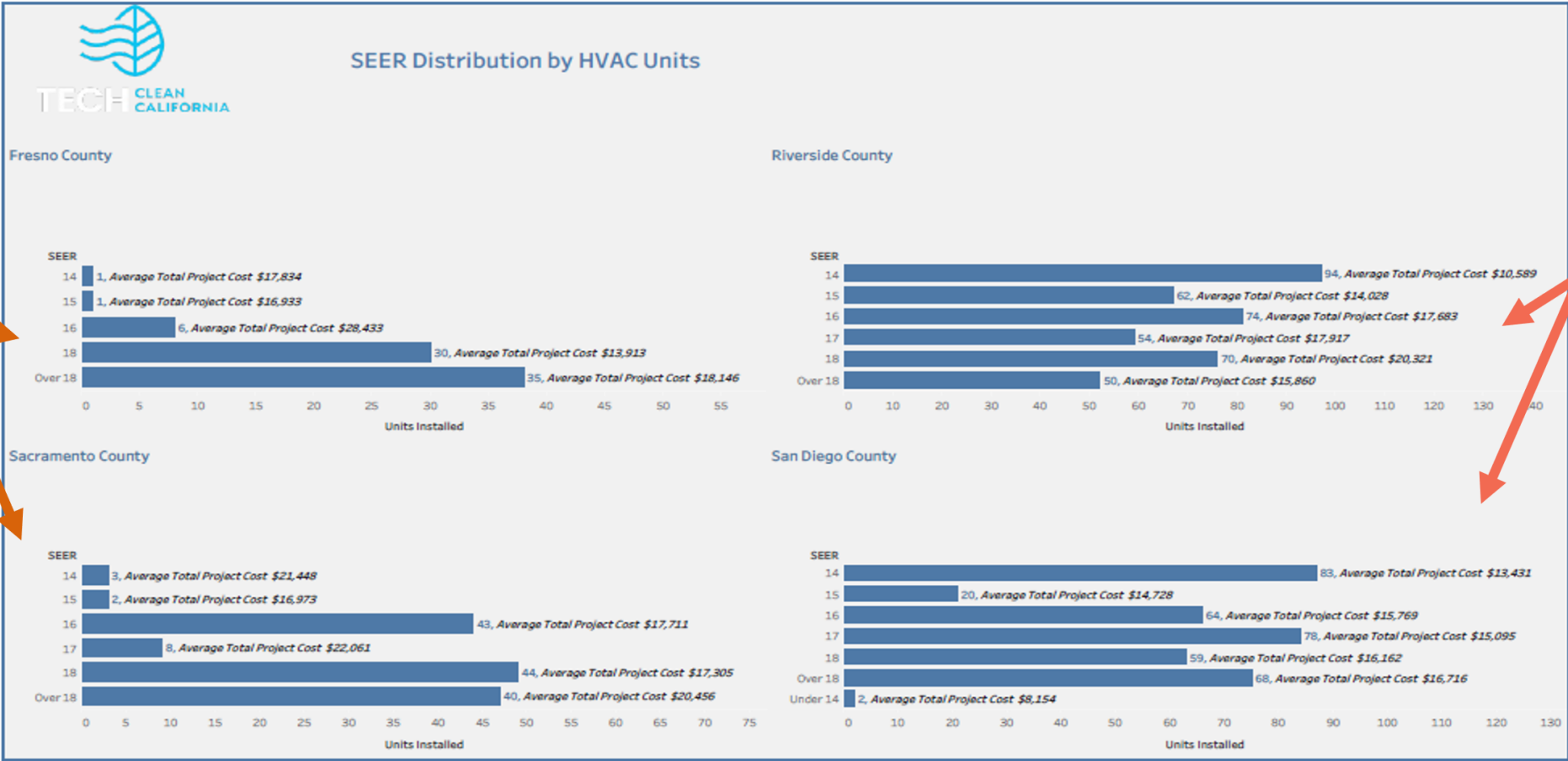
- Working with key supply chain actors unlocks participation
- May install rate of ~7,000 is dwarfed by **6-10x increase** needed to hit California's 2030 target of 6 million heat pumps
- Layering is important to scale investment, but it can't compromise the simplicity of the message
- Vast majority of contractors state that they decommissioned equipment. *Results may vary in colder climates*
- Panel upgrades were less common than anticipated

Furnace Setting After Install	% of Total
Decommissioned	87%
Setup as blower only	<1%
Emergency backup only	12%

Installation Component	% of Total
Ducts sealed/replaced	15%
Manual-J completed	9%
Full system performance test	3%
Smart thermostat included	42%
Panel Upgrade Required	8%

Layering Amplifies Impacts

TECH incentives drove heat pump adoption. Layering partner program incentives drove more efficient products.

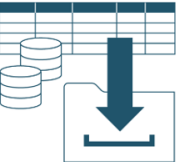


Local Incentives for high efficiency: < 5% below SEER 16

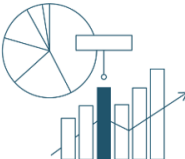
No local incentives for high efficiency: 25%+ below SEER 16

Data Enables Program Refinement and Informs Policy

This is available to you via: techcleanca.com/



Download Data



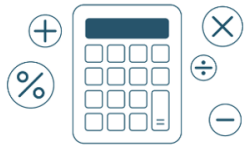
Maps and Graphs



Contractor Data



Evaluation Studies



Budget Report

The Opportunities Ahead

Making the most of this moment will necessitate:

- Ensuring that funding streams are seamlessly integrated for a frictionless customer and market actor experience
- Making sure market transformation scales through barrier mitigation and data/trend collection and analysis

Thank You



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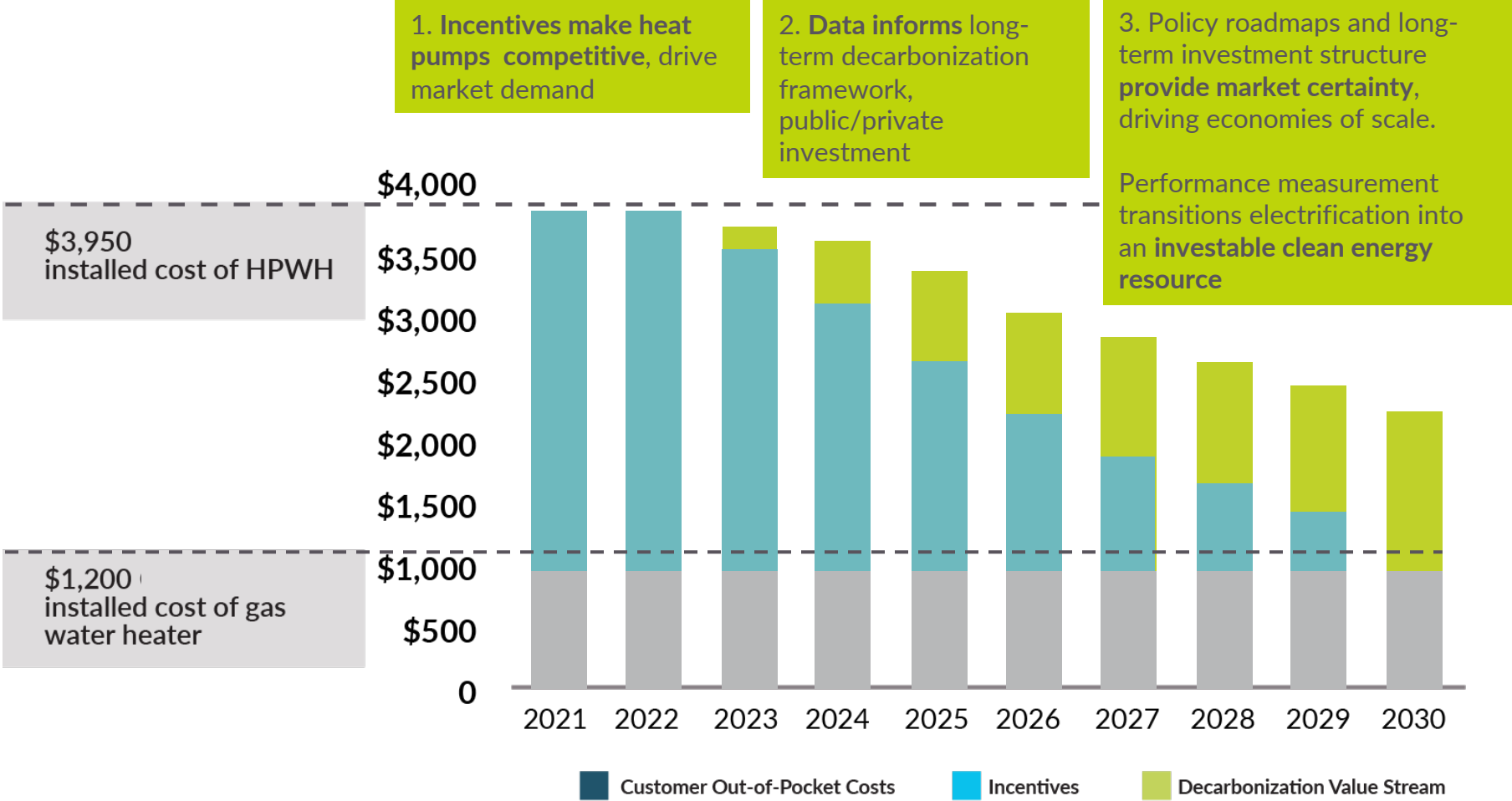
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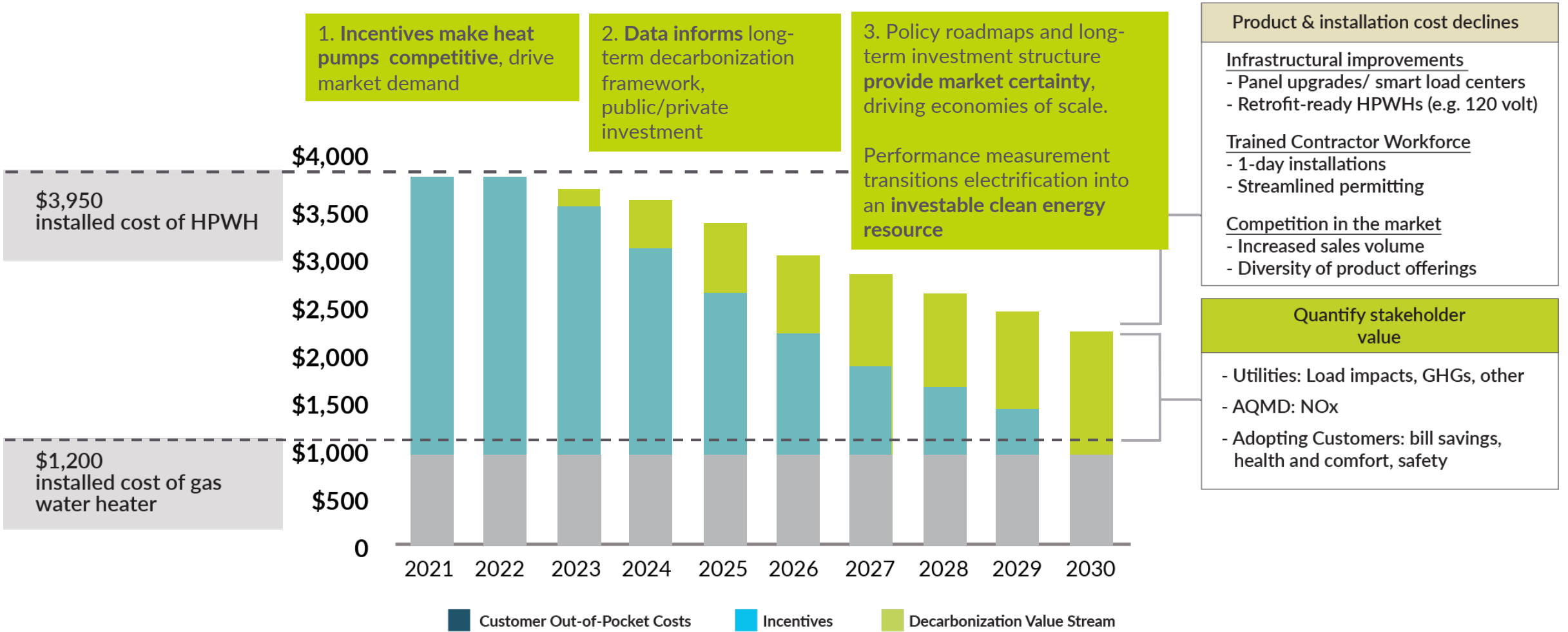


Theory of Change – Bending the Cost Curve



2021 HPWH cost estimates for market-rate gas-to-electric retrofits, based on published SMUD program data. These do not include additional costs for panel upgrades.

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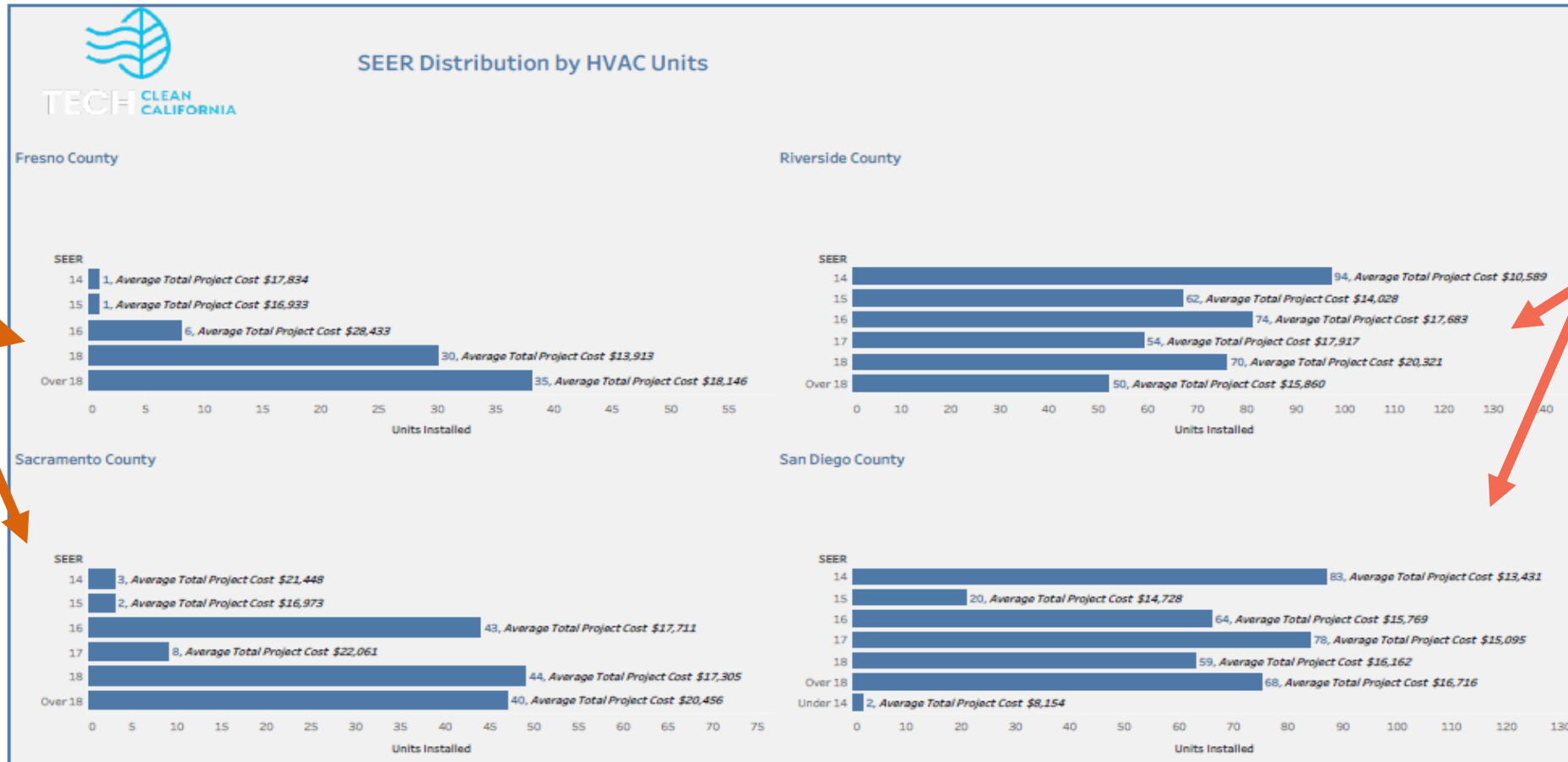
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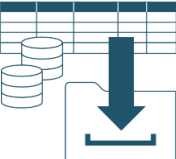


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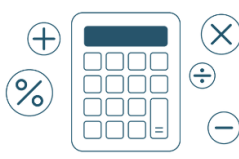
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