

DOCKETED

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Behind the ...Thermostat?

Lead Commissioner Workshop to Launch Distributed Energy Resources
in California's Energy Future Proceeding

California Energy Commission

June 1, 2022

Panama Bartholomy

Building Decarbonization Coalition



Greenbank Associates



CalCCA
California Community
Choice Association

Sonoma
Clean Power



TerraVerde
ENERGY



CAL SMACNA
BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT



Local
Government
Commission
Leaders for Livable Communities

AVE
ANN V EDMISTER
DESIGN
AVENUES LLC

SIERRA
BUSINESS COUNCIL



SIERRA
CLUB



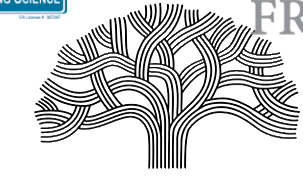
FRONTIER
energy Western HVAC



CUSHMAN &
WAKEFIELD

MENLO
SPARK
STEFFES
CUSTOMER FOCUSED. SOLUTION DRIVEN. FIELD PROVEN.

INVESTOR
CONFIDENCE
PROJECT



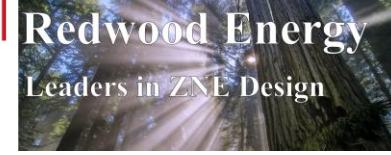
CLEAResult

Turner
Smith
Innovation has a name.



EPRI
ELECTRIC POWER
RESEARCH INSTITUTE

SIEGEL & STRAIN Architects



WRNSSTUDIO GLUMAC
A TETRA TECH COMPANY

R H T R
RURAL HARD TO REACH
LOCAL GOVERNMENT PARTNERSHIPS'
WORKING GROUP

MITSUBISHI
ELECTRIC
AIR CONDITIONING SYSTEMS



STOPWASTE
at home • at work • at school

SEA
stone energy associates

SMUD

TRC
Results you can rely on

Guttman &
Blaevoet
CONSULTING ENGINEERS



Gensler

the Energy
Coalition

SPAN.10

Powering forward.
Together.

JouleSmart



Guttman &
Blaevoet
CONSULTING ENGINEERS



Sensgreen

LA
DWP
Los Angeles
Department of
Water & Power



SILICON VALLEY
CLEAN ENERGY

CITY OF
Fremont



INTEGRAL
GROUP



COLMAC
WATERHEAT
A division of Colmac Industries.

Stantec

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

EDF
ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work



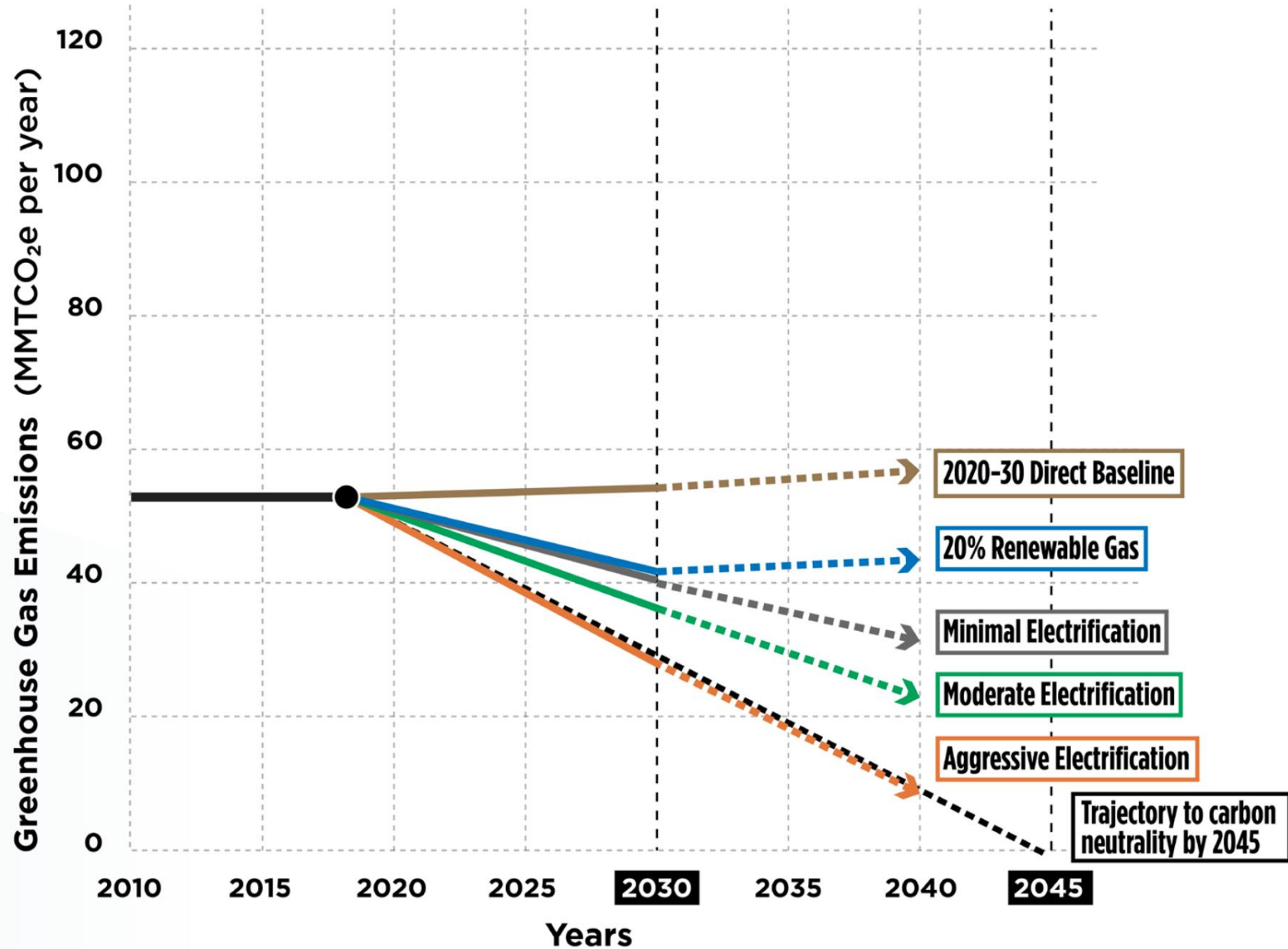
BRADFORD WHITE
WATER HEATERS

ReplaceNow



Figure ES-7: Direct Straight-Line Building Emission Trajectories of Scenarios Compared to 2045 Carbon Neutrality

**Straight Line
Carbon Trajectories**
(Direct Emissions)



Market Goals

Goal 1: Build customer, builder, contractor and policy-maker awareness and interest in decarbonization.

Goal 2: Ensure that customers receive a good value from adopting building decarbonization measures.

Goal 3: Ensure that building decarbonization provides a better value to builders and contractors than fossil-fuel heating.

Goal 4: Prepare supply-chains and delivery agents to meet rising demand for emission-free building technologies with a quality product.

Goal 5: Align Policy to meet other goals.



TECH CLEAN CALIFORNIA





CA needs to aggressively scale heat pumps to meet Climate Goals

SB 32:
40% GHG reduction below 1990 levels by 2030

CEC 2021 IEPR Target:
6 million heat pumps installed by 2030

SB 100:
100% clean electricity by 2045

Executive Order B-55-18:
Economy-wide carbon neutrality by 2045
(In July 2021, Governor Newsom directed CARB to review feasibility of carbon neutrality by 2035)

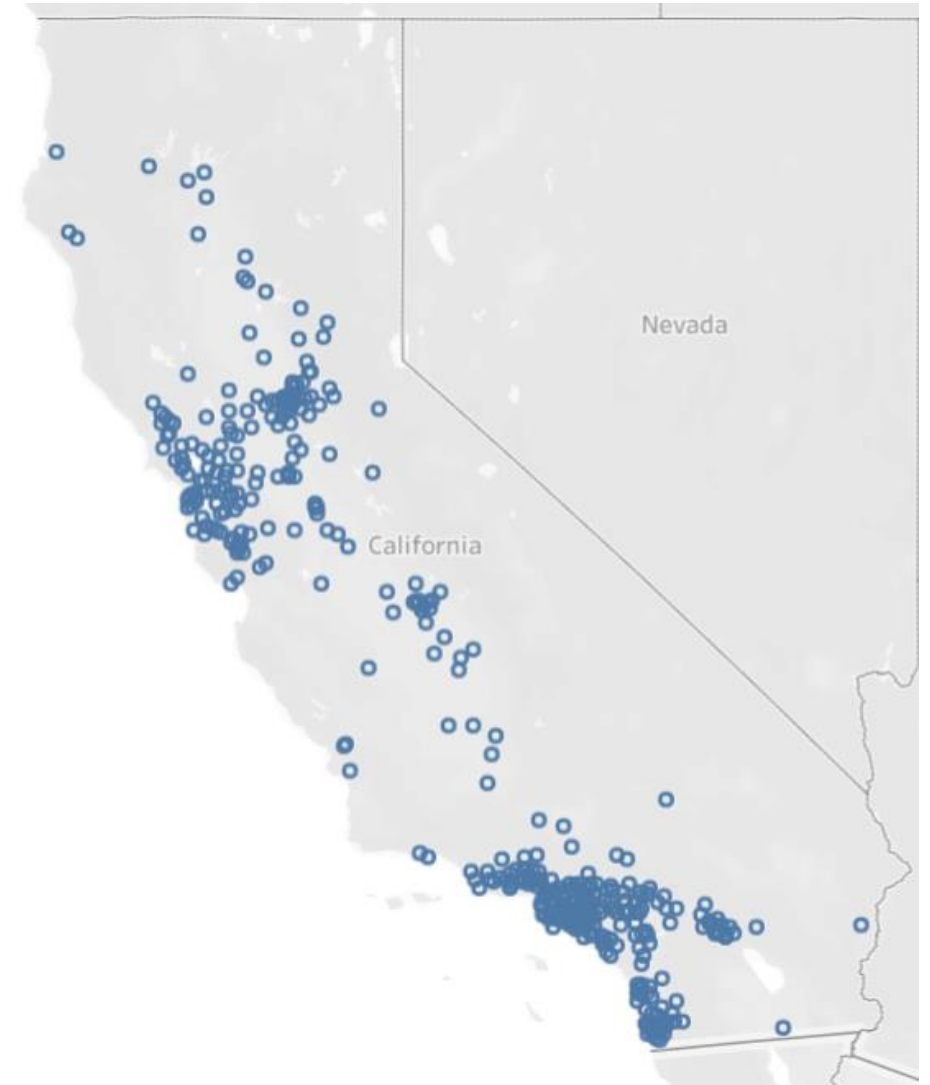
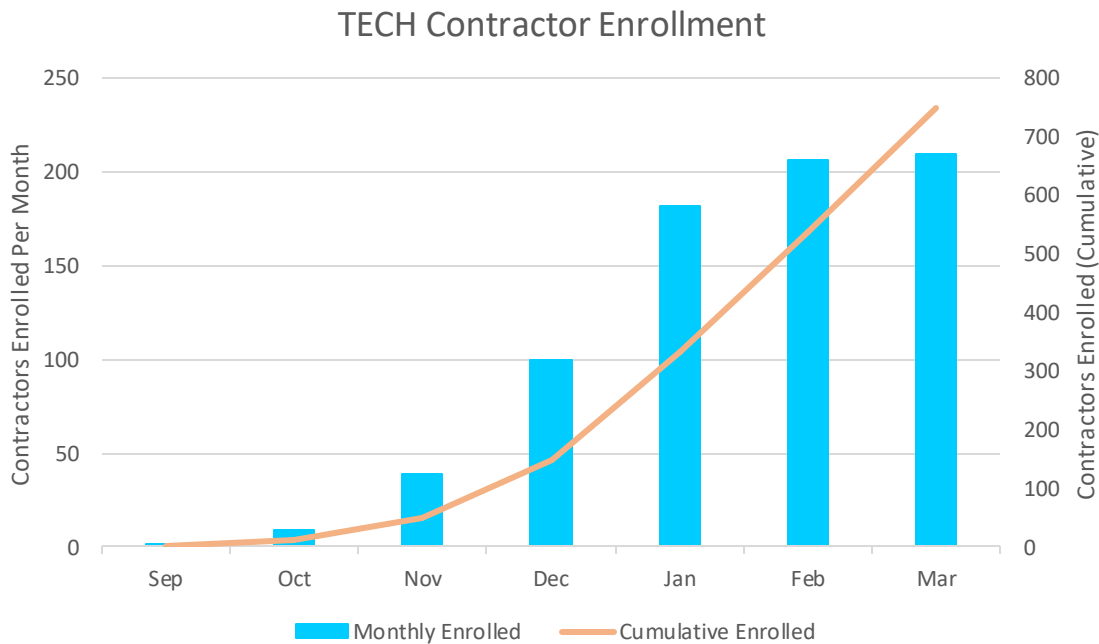
| | Current | Needed by 2030 |
|--|--------------------|--------------------|
|  Heat Pump Water Heating | < 2% market share | > 30% market share |
|  Heat Pump HVAC | < 10% market share | > 30% market share |

Estimates based on RASS 2019 data: https://webtools.dnv.com/CA_RASS/

Market Engagement

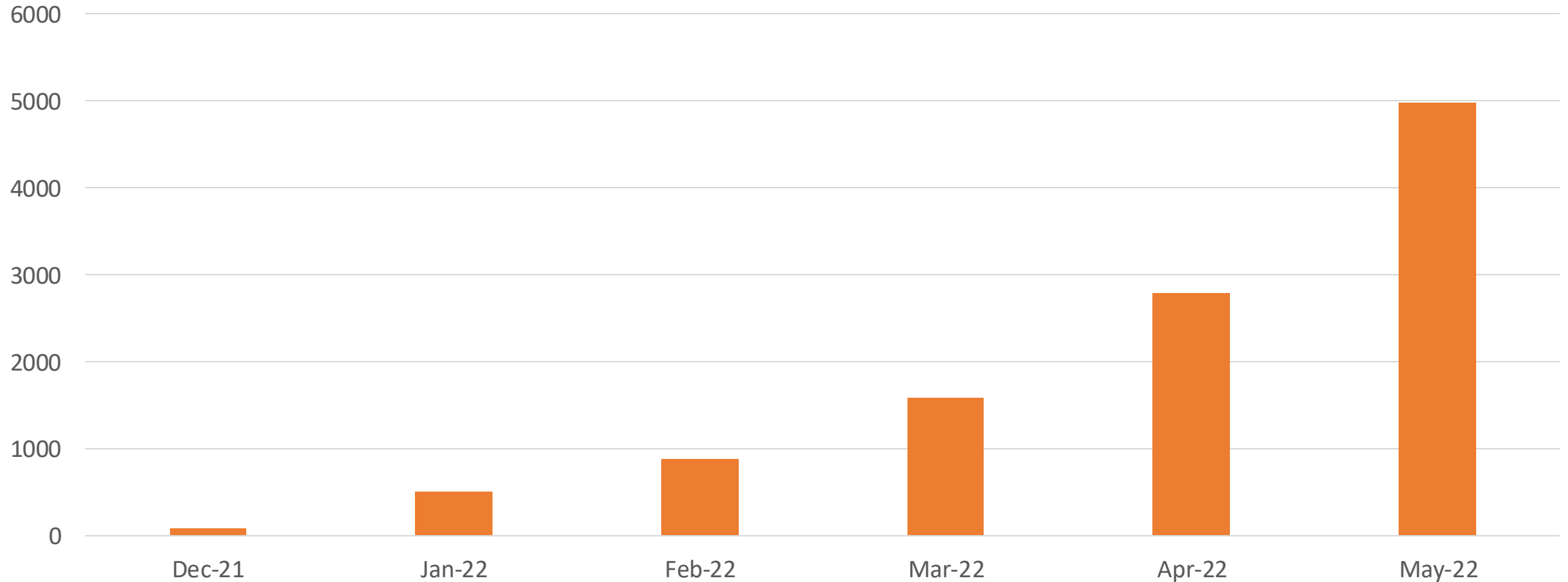
Progress to date:

- Enrolled over **750** contractors, **412** active participants
- Engaged major manufacturers and distributors on enrollment, marketing and training

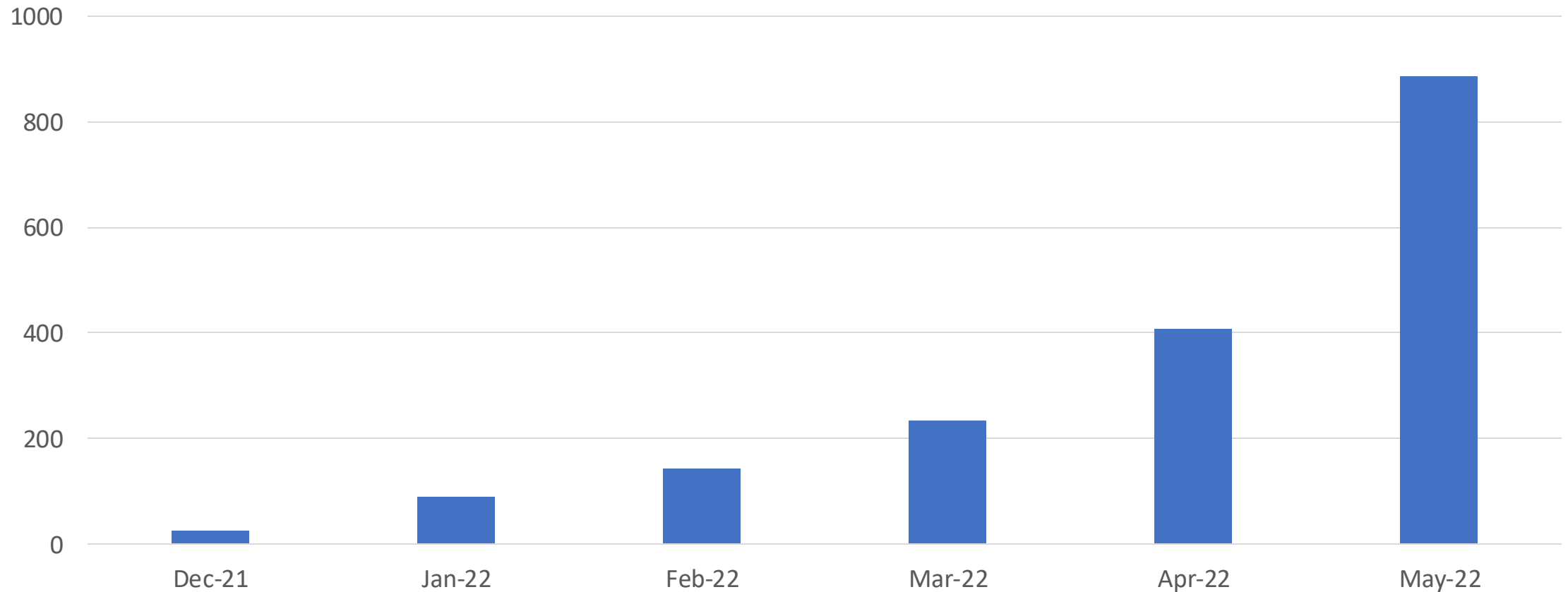


Results as of 4/4/2022

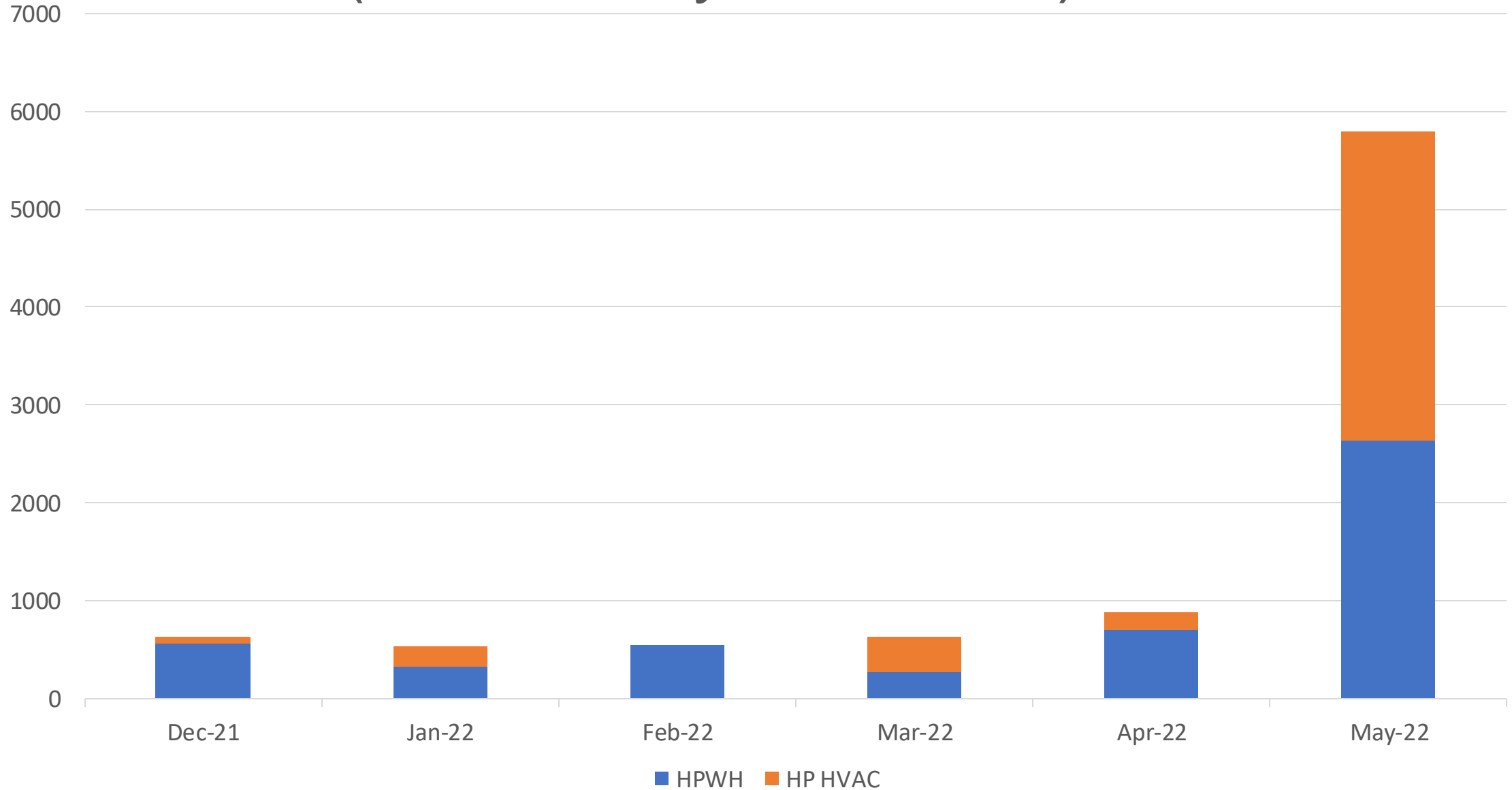
TECH HP HVAC applications by month (single family)



TECH HPWH applications by month (single family)



TECH Heat Pump application by month (multi-family, # of units)



Market Goals

Goal 1: Build customer, builder, contractor and policy-maker awareness and interest in decarbonization.

- Fund a large scale consumer education campaign

Market Goals

Goal 2: Ensure that customers receive a good value from adopting building decarbonization measures.

- Electricity rate reform
- Tariffed on bill financing
- Well designed incentive program

Market Goals

Goal 3: Ensure that building decarbonization provides a better value to builders and contractors than fossil-fuel heating.

- Well designed mid-stream incentives (e.g. TECH)

Market Goals

Goal 4: Prepare supply-chains and delivery agents to meet rising demand for emission-free building technologies with a quality product.

- Policy certainty
- Electrical panel upgrade program

Market Goals

Goal 5: Align Policy to meet other goals.

- Demand forecasts in alignment with our electrification goals
- Stop public subsidies of gas appliances and infrastructure
- All-electric new construction code
- Pragmatic gas appliance phase out dates

FUND TECH!!



Thank you

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