



Item 9: Developing Next Generation, All Electric Heat Pumps Using Low Global Warming Potential Refrigerants

March 12, 2026 Business Meeting

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Building Decarbonization Unit



Solicitation Overview

CEC Funding: \$9,742,220

- **Match Funding: \$2,912,785**

Group 1: \$1.1 M

- \$300,000 Match

Group 2: \$5.3 M

- \$1.6 M Match

Group 3: \$3.1 M

- \$928,500 Match





Solicitation Overview

Group 1

**120V electric water heating
using low GWP < 150
refrigerants**



Group 2

**Combined space & water
heating using ultra low
GWP < 10 refrigerants**



Group 3

**Space conditioning systems
using ultra low GWP < 10
refrigerants**





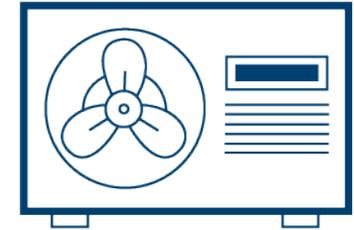
Benefits to Californians



**Promotes GHG
reductions**



**Accelerates
commercialization**



**Funds all-electric heat
pumps using low GWP
refrigerants**



Group 1: Electric Power Research Institute

Funding Amount:

- CEC: \$1,199,004
- Match: \$ 300,000

Project Focus:

- Optimize the design of a 120V propane heat pump water heater with an immersed condenser
- Test and demonstrate in laboratory and field site
- EPRI plans to invite many well-known water heater manufacturers to participate



Source: <https://www.epri.com/>



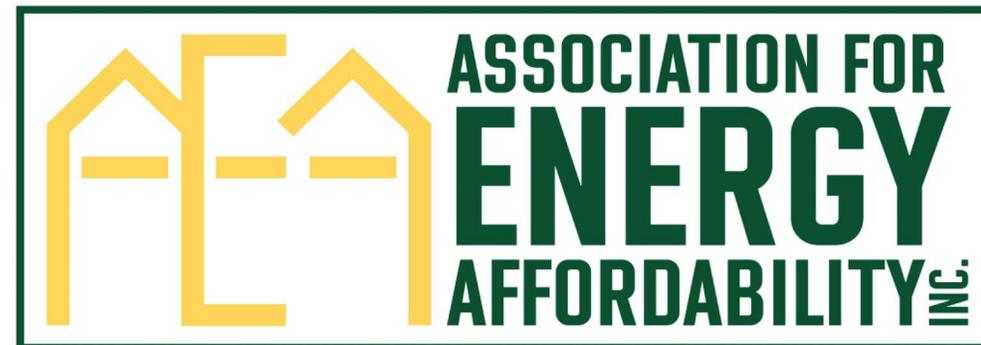
Group 2: Association for Energy Affordability

Funding Amount:

- CEC: \$1,499,630
- Match: \$ 450,000

Project Focus:

- Develop and design a multi-function prototype using propane
- Field evaluate a multiplex system that integrates an array of heat pumps in a multi family building
- Manufacturer Partnership: Aris Hydronics



Source: <https://aea.us.org/>



Group 2: Prospect Silicon Valley

Funding Amount:

- CEC: \$1,849,978
- Match: \$ 600,000

Project Focus:

- Develop and test a modular CO₂ refrigerant prototype
- Field demonstrate the heat pump at a multifamily residential site
- Manufacturer Partnership: FLOW



Source <https://www.prospectsv.org/>



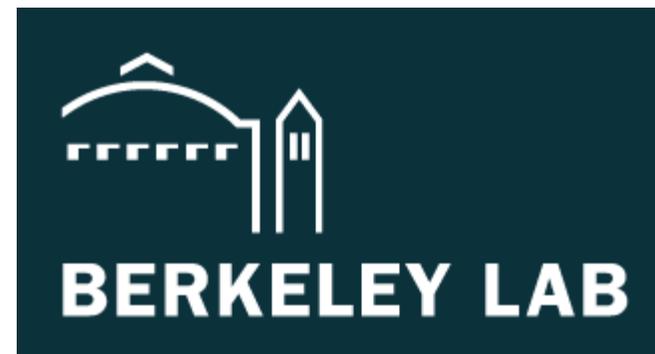
Group 2: UC Berkeley

Funding Amount:

- CEC: \$2,000,000
- Match: \$ 634,285

Project Focus:

- Develop and test a propane heat pump
- Validate the system with a whole building energy simulation
- Field demonstration in a residence
- Manufacturer Partnership: Harvest Thermal, Inc.



Source: <https://creative.lbl.gov/visual-identity/>



Group 3: UC Davis

Funding Amount:

- CEC: \$1,301,773
- Match: \$ 450,000

Project Focus:

- Develop two prototype solutions using two different refrigerants
- Compare both technological pathways
- Manufacturer Partnership: Trane Technologies



UCDAVIS

Western Cooling Efficiency Center

Part of the Energy and Efficiency Institute

Source: <https://wcec.ucdavis.edu/>



Group 3: IceBox Heat pumps

Funding Amount:

- CEC: \$1,891,835
- Match: \$ 478,500

Project Focus:

- Develop and test a group of CO₂-based integrated heat pump
- Demonstrate systems in multi-family housing
- Will establish contact for partnerships with manufacturers



Source: www.iceboxenergy.com



Staff Recommendation

- Adopt staff's recommendation that projects are exempt from CEQA
- Approve 6 grant agreements