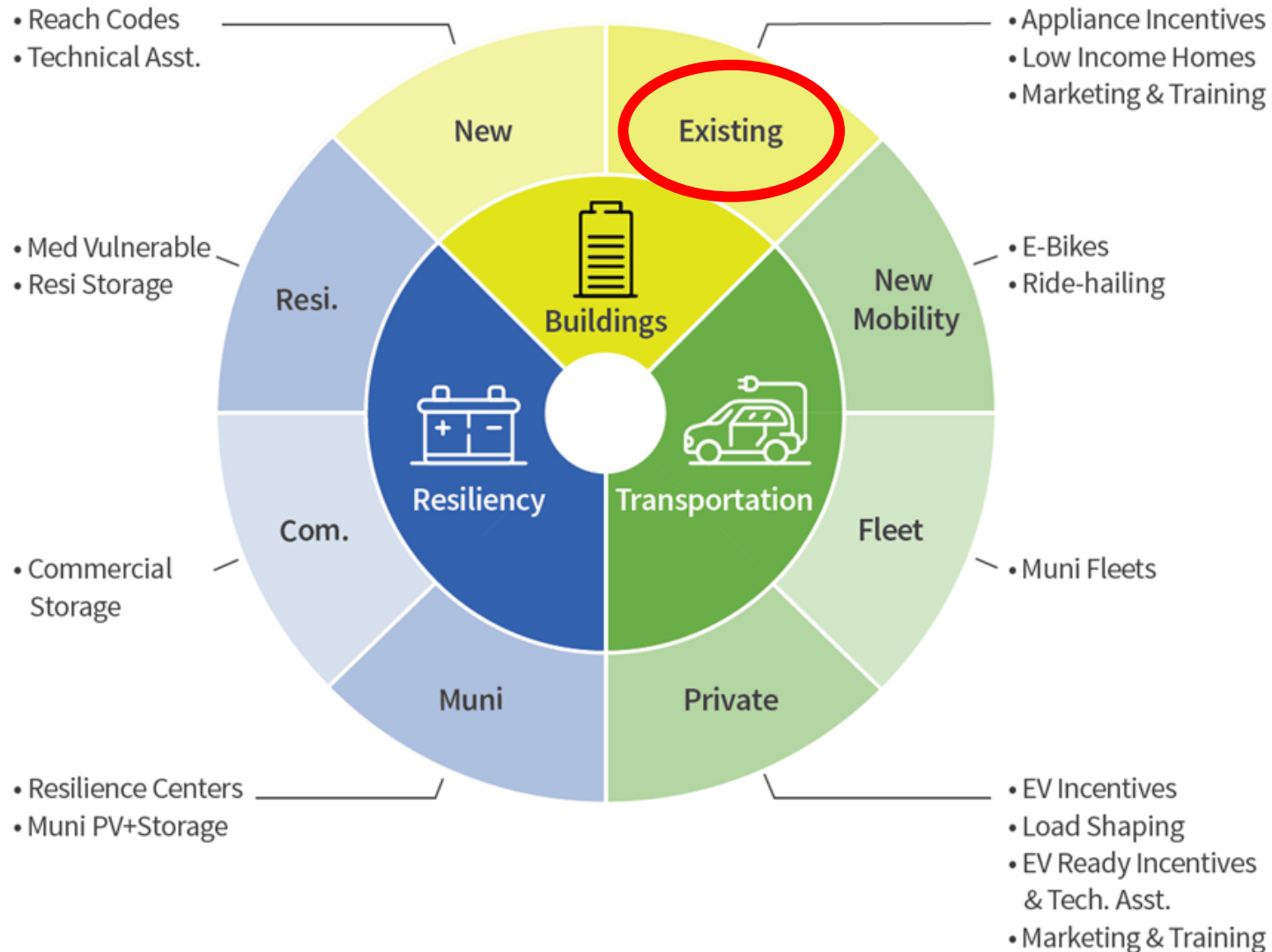




Harvest Thermal Contract

Executive Committee, November 9, 2020

Programs Portfolio



Existing Buildings Electrification Plan Summary

In May 2020, the Board approved a four-year \$6.1 million Existing Building Electrification plan. Initial programs outlined were:

1. Heat Pump Water Heater (HPWH) Program

- HPWH incentives. Combine with BayREN incentives.

2. Low Income Healthy Home & Electrification Program

- Turnkey no-cost home upgrades, energy efficiency, and electrification for low-income residents.

3. Harvest Thermal Technology Pilot

- Pilot combined space and water heating system with load shifting thermal storage and potentially lower cost than separate retrofits.

Harvest Thermal Contract: Request

Program: Harvest Thermal Technology Pilot

Request: Recommend Board approval of contract with Harvest Thermal to execute technology pilot

Amount: Up to \$250,000

Technology and Company Overview

Technology

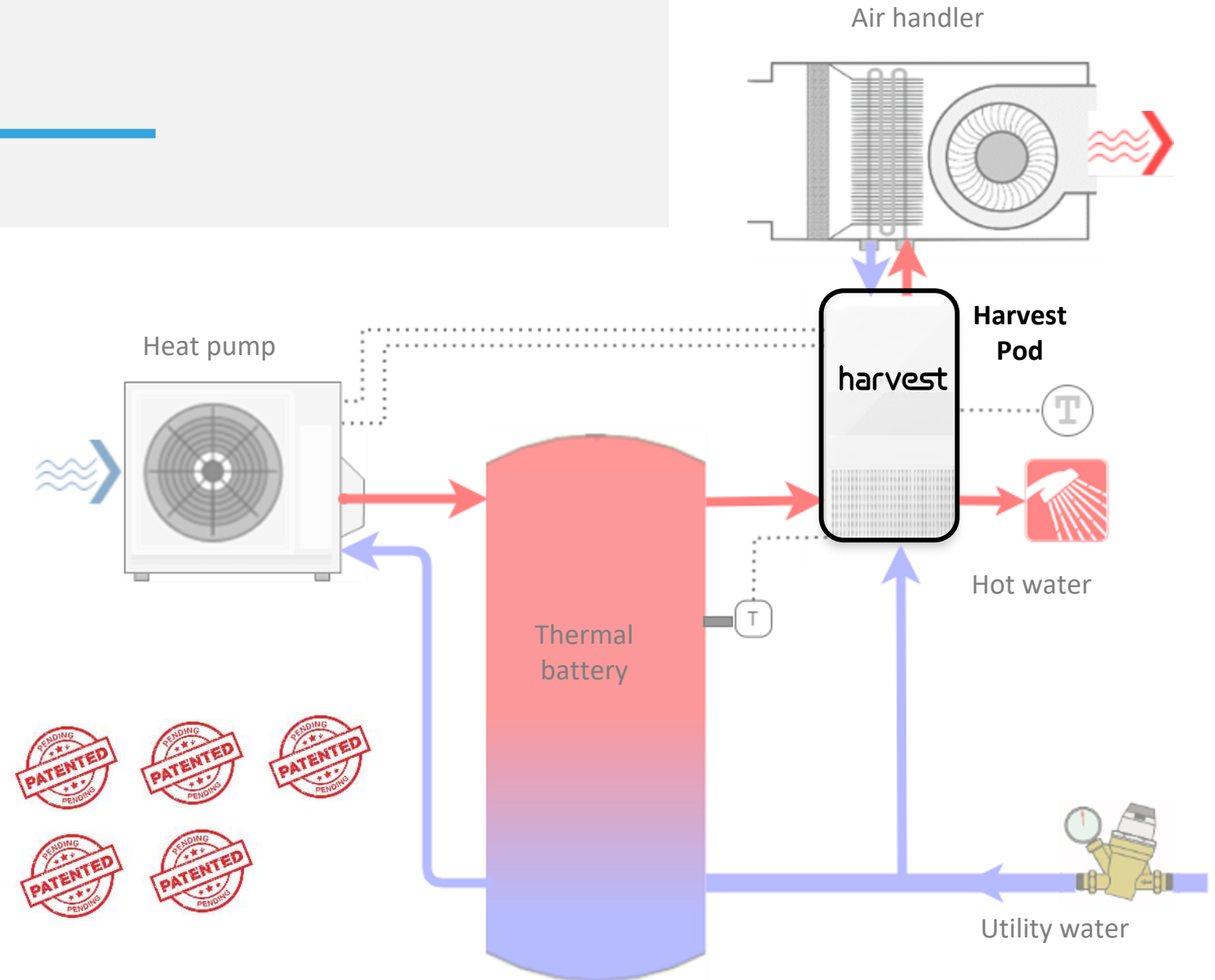
- Technology provides water and space heating through one heat pump and storage
- Lowers cost to install than separate installations and allows load shift of water and space heating
- Pilot new Harvest Thermal technology in homes to prove viability

Company Profile

- Bay Area-based startup, has deployed functioning prototypes in several homes in the area
- Experienced senior leadership team
- Secured early-stage funding
- Recently won both National Science Foundation and California Energy Commission grants

THE HARVEST SYSTEM

- ✓ Combined space conditioning and hot water
- ✓ Single high-efficiency heat pump
- ✓ Inexpensive energy storage using hot water tank
- ✓ Uses standard HVAC delivery systems
- ✓ Patented methods to know energy state of tank using sensors in Harvest pod
- ✓ Plan to include air conditioning



Example shown for forced air system – can also be implemented for radiant floors and radiators

Pilot Implementation Detail

Approach

- Support further development of the technology
- Install technology in up to 5 single family homes at no cost to homeowner
- Independent third-party assessment of technology (install costs, energy, bill savings, customer satisfaction)
- Preferred pricing for PCE if technology is scaled for larger market penetration

Implementation Detail

- Harvest Contract: up to \$250,000 over 2.5 years
 - Develop pilot site recruitment criteria and outreach to prospective homes
 - Manage installation process, provide homeowner support
 - Monitor system performance and provide data to independent measurement & verification party
- Independent measurement & verification: up to \$50,000 (separate contract by PCE)

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