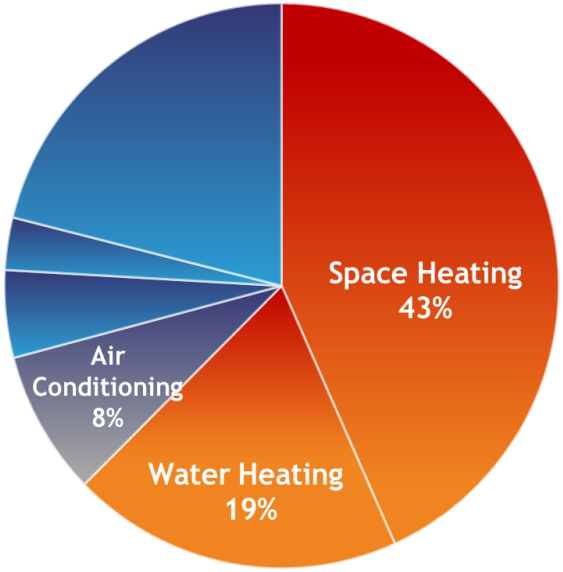
harvest thermal

Smart Home Heating and Hot Water
Lower Bills, Lower Emissions

Pierre Delforge, Head of Product and Operations
Aug. 8, 2023

Our Mission

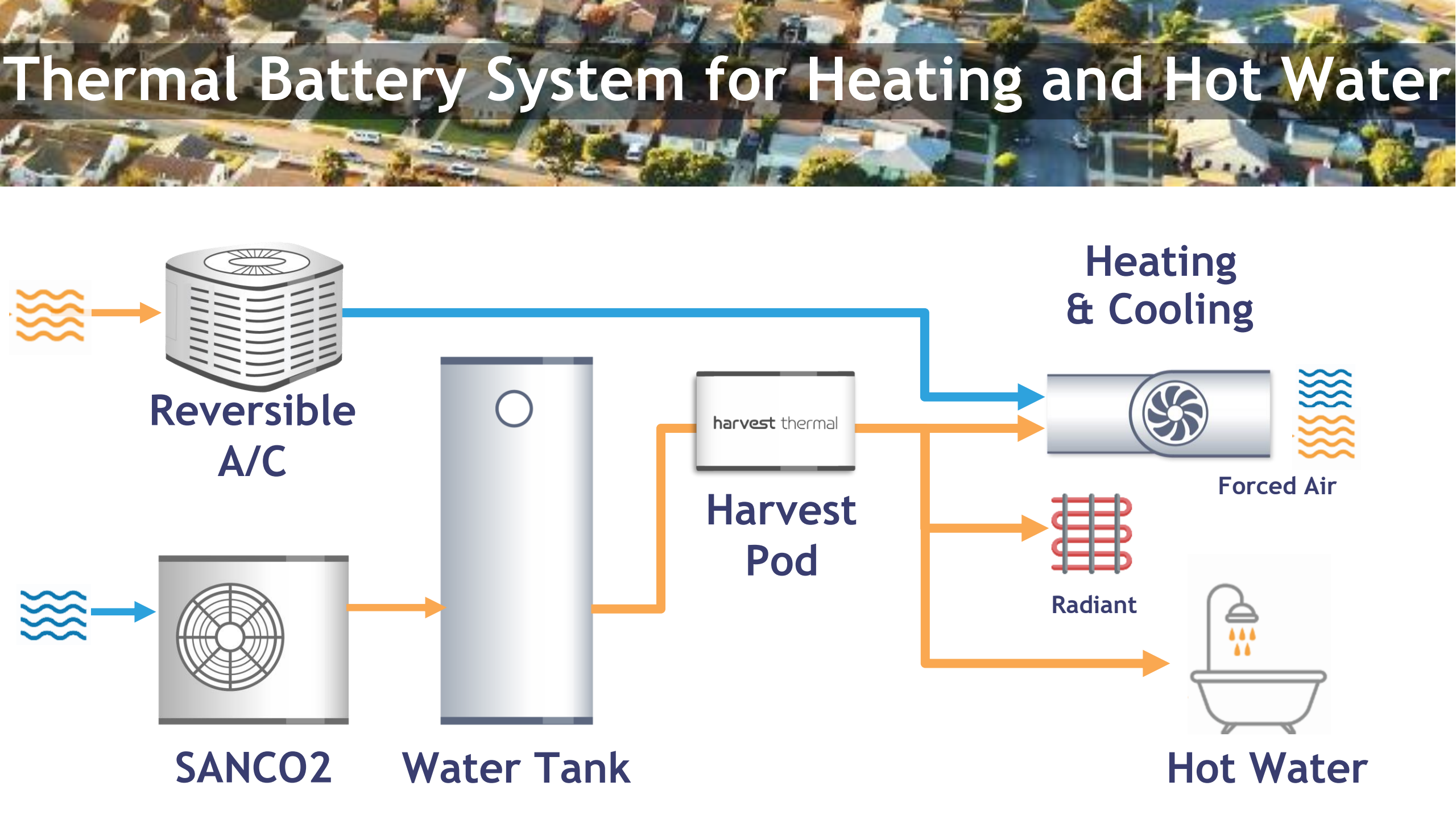


2/3 of home energy use: heating and hot water

Scale Home Decarbonization Through Lower Energy Costs And Grid Flexibility

harvest thermal

Thermal Battery System for Heating and Hot Water



Streamlined Design - Optimized Costs & Performance

Harvest Pod

IoT controller combining electronics and flow controls

Partner Devices

High-performance third-party appliances for flexible and optimized performance

Data Collection

- Rich data environment to enable controls
- Minute-level flow, temperature, power data

Flow

- Heat pump
- DHW
- Heating

Temperature

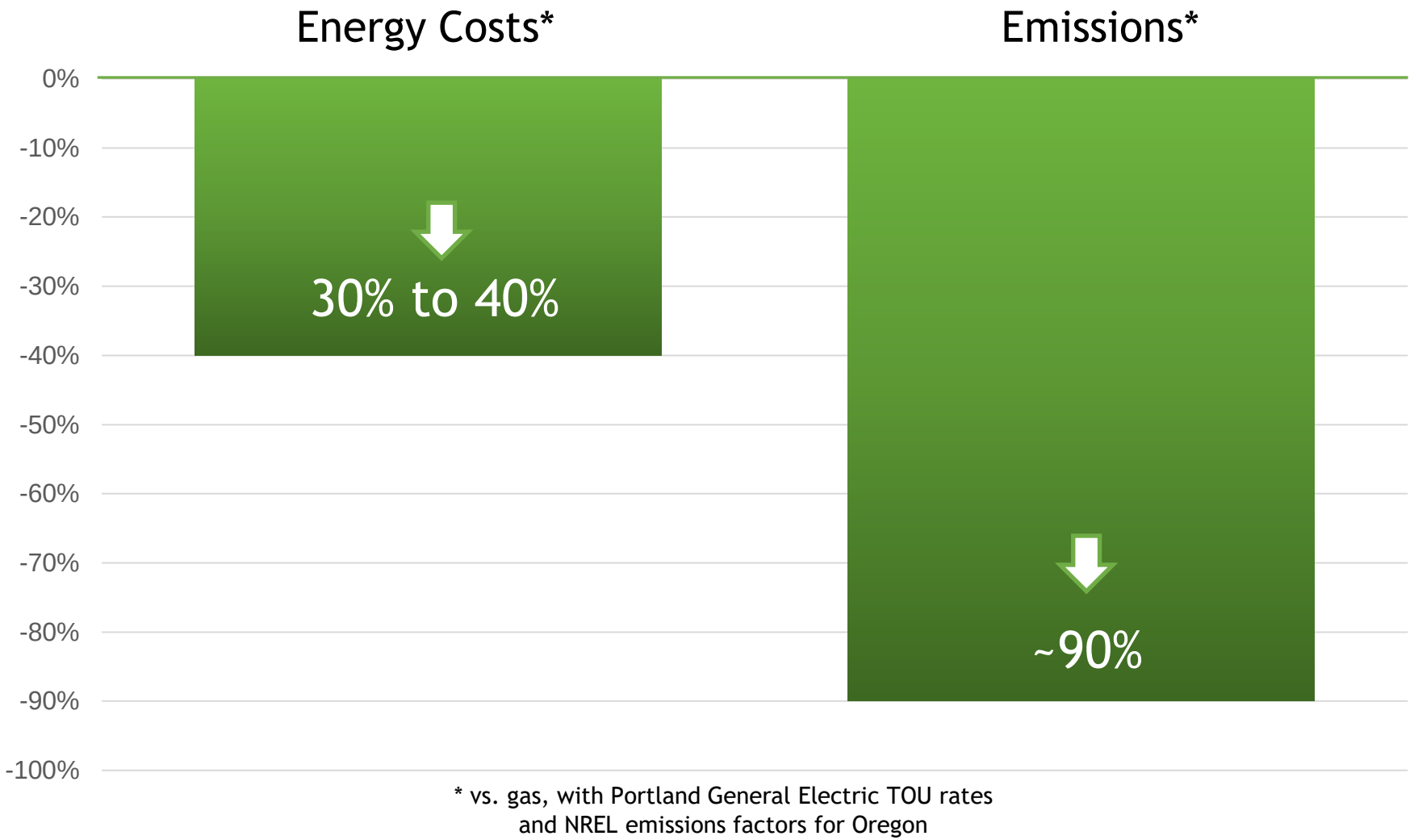
- SANCO2 inlet / outlet
- Tank top/ mid/bottom
- Heating return temp
- Utility water

Power

- SANCO2
- Air handler
- Reversible A/C

harvest thermal

Reducing Energy Costs and Emissions



* vs. gas, with Portland General Electric TOU rates and NREL emissions factors for Oregon

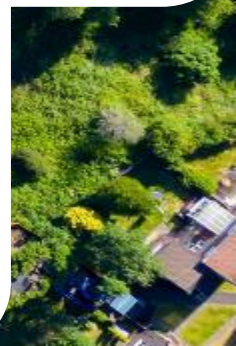
harvest thermal

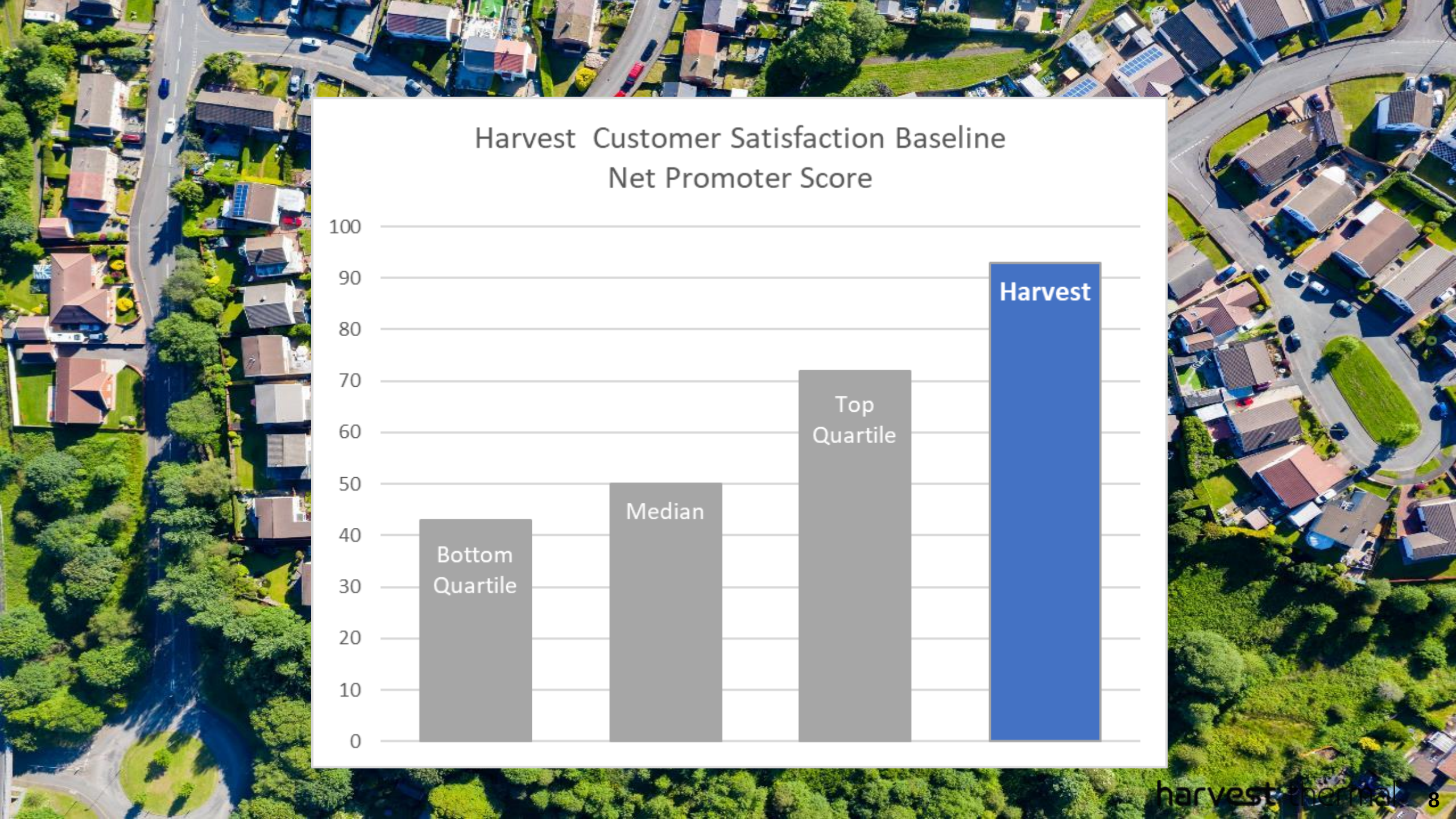
“The new system is quiet, and the temperature is stable - we now have a much more comfortable home.”

“We are saving money and avoiding dangerous CO2 emissions.”

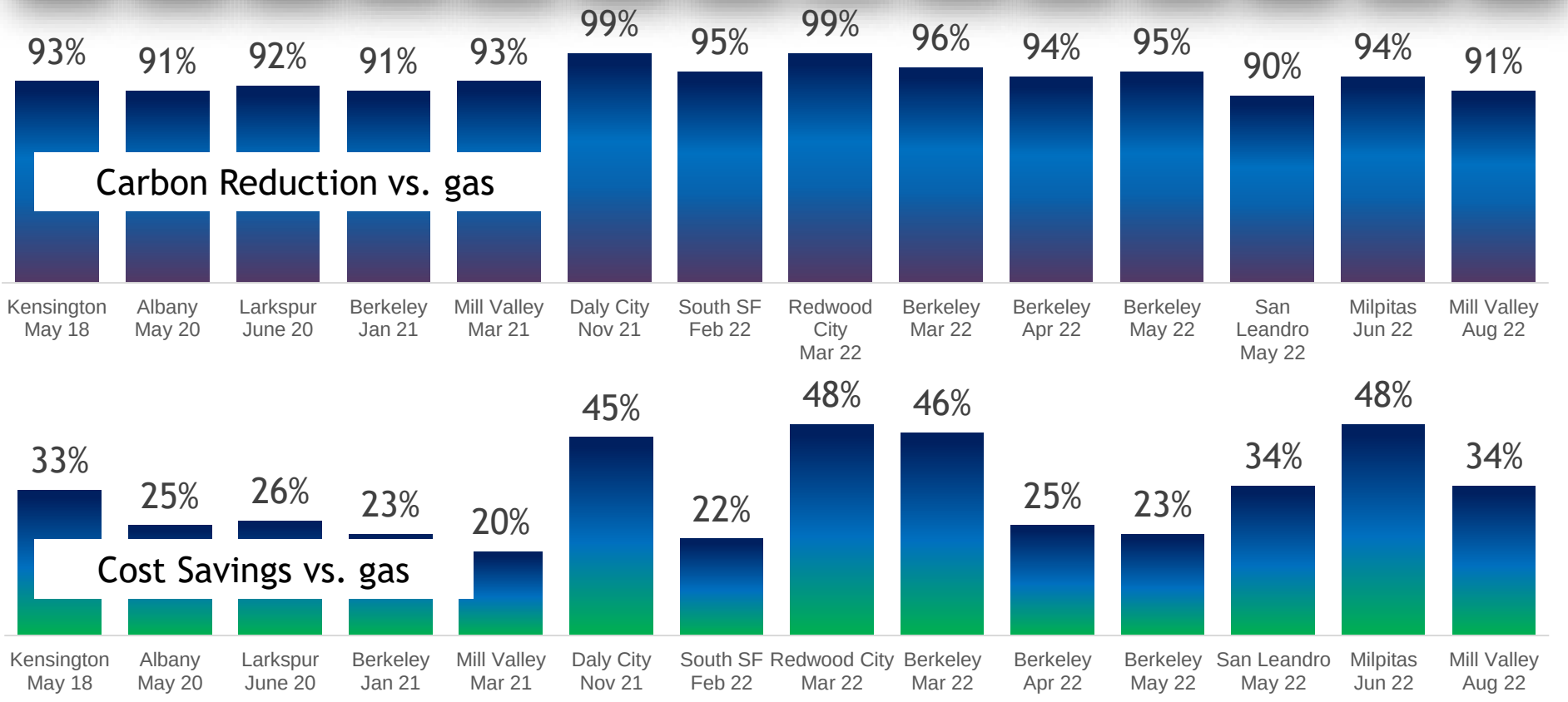
“Honestly, we feel kinda spoiled now. Don't know how we can go back to the old system!”

“I like what my Harvest system says about me, that I value green energy, but I also like that it saves me money.”




Harvest Customer Satisfaction Baseline
Net Promoter Score
100
90
80
70
60
50
40
30
20
10
0
Bottom Quartile
Median
Top Quartile
Harvest

Slashing Emissions & Bills Consistently and Comfortably



System #1 2018

Commercial launch 2022

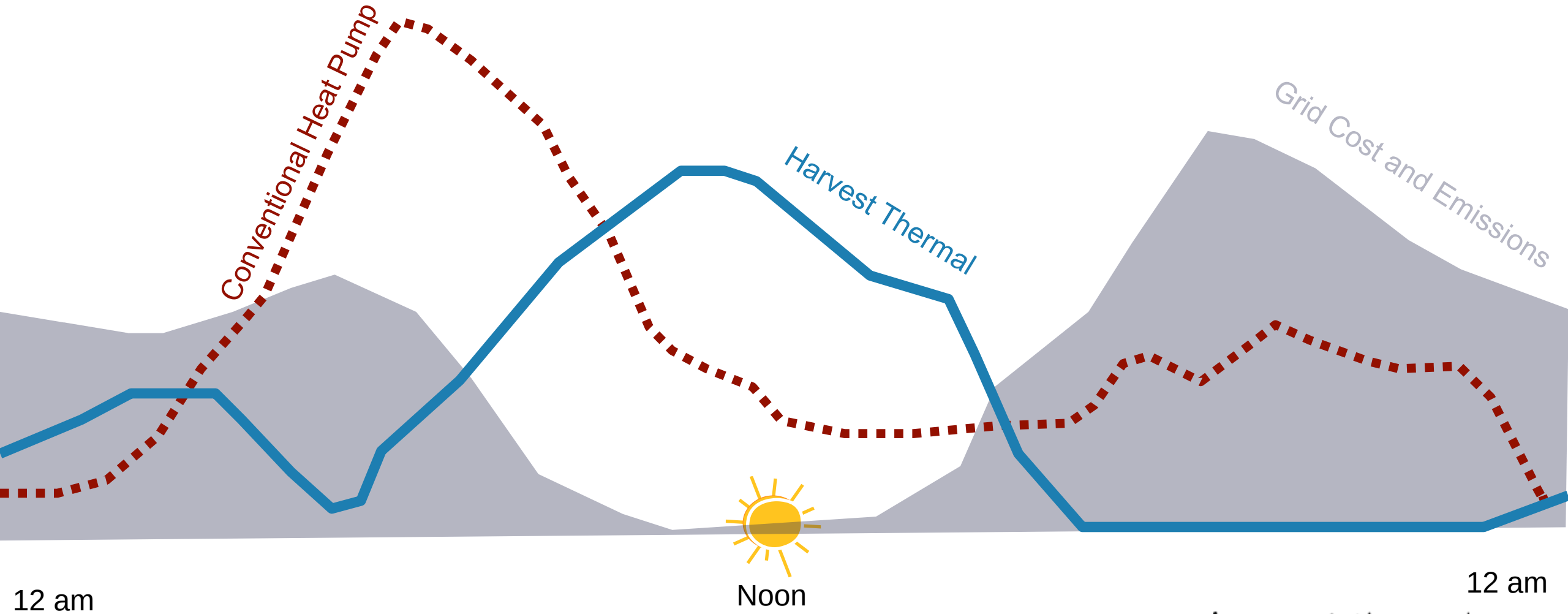
100+ systems sold

FAST COMPANY
WE MADE THE LIST!
MOST INNOVATIVE COMPANIES 2023

EDISON AWARDS
INNOVATIONS & INNOVATORS

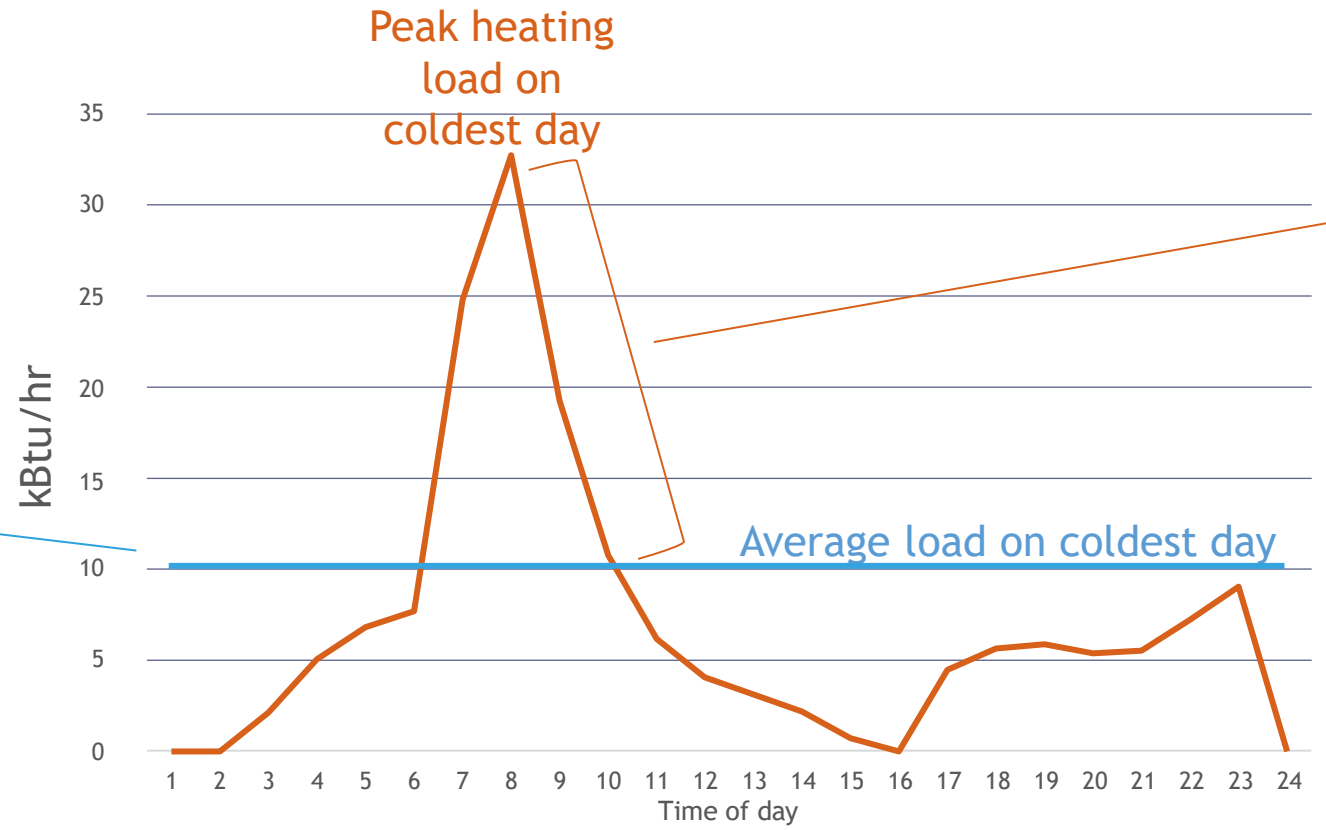
NREL
Transforming ENERGY

A Cost Effective, Resilient Electric Grid



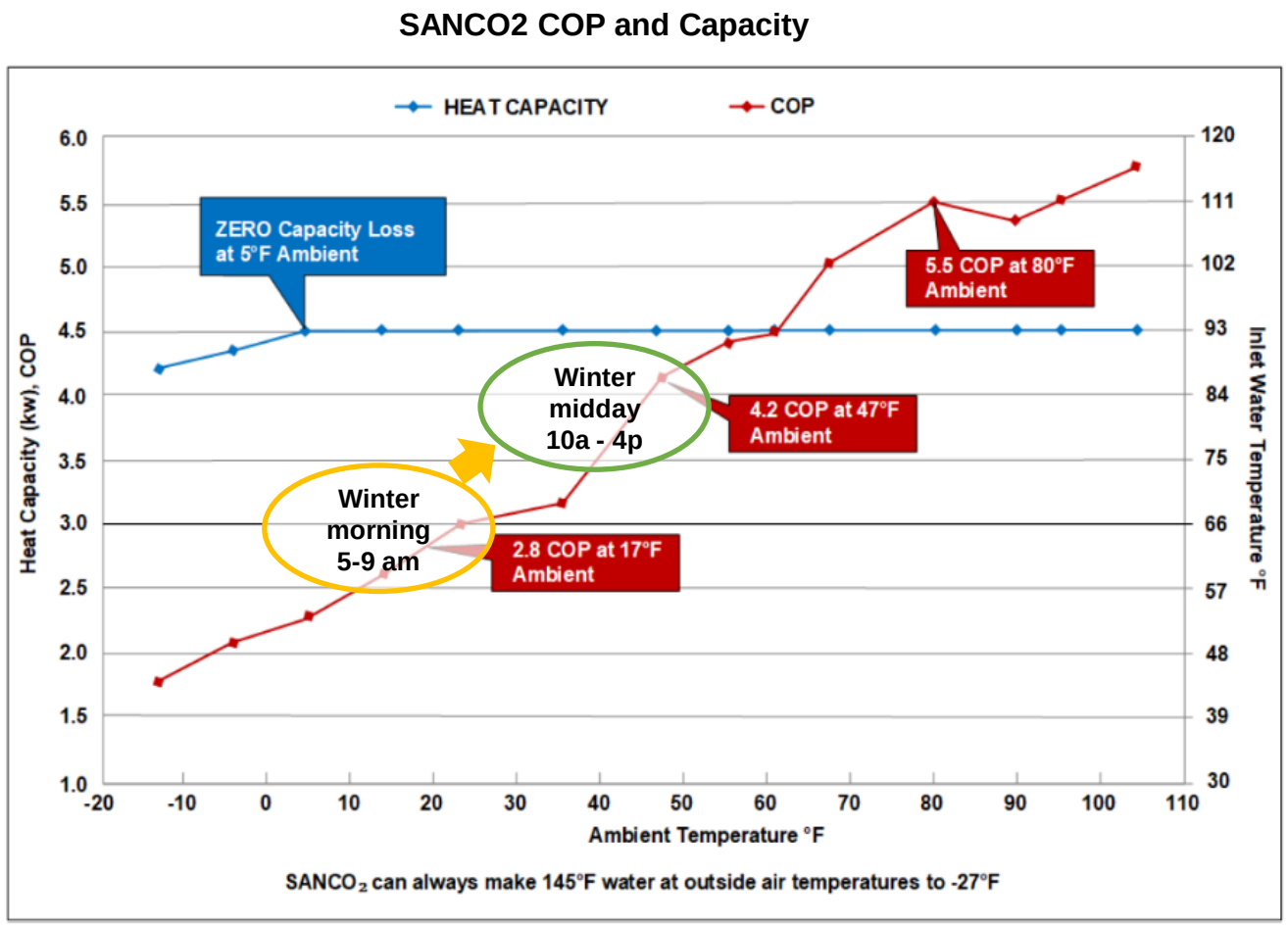
System Capacity: Thermal Storage Boost

Heat pump(s) sized to meet average load on coldest day



Thermal storage serves as buffer to serve the coldest hours

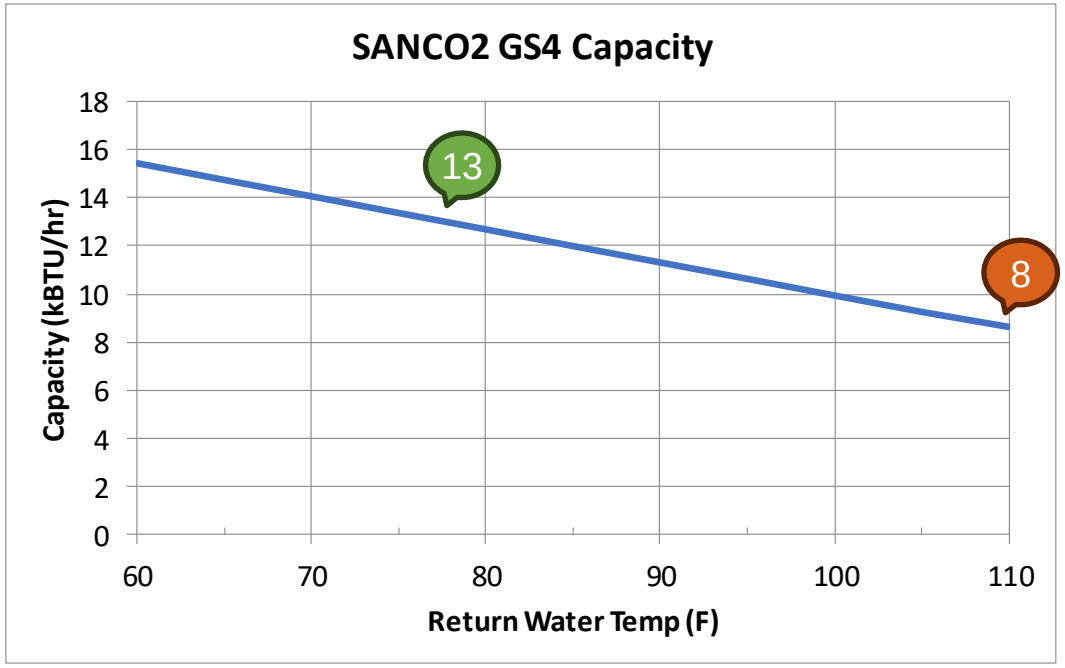
Efficiency: Arbitraging Outdoor Air Temperature



- Conventional heat pumps operate primarily at coldest times of day
- Harvest operates the SANCO2 at the warmest times of day, maximizing efficiency

System Capacity: Water Return Temperature

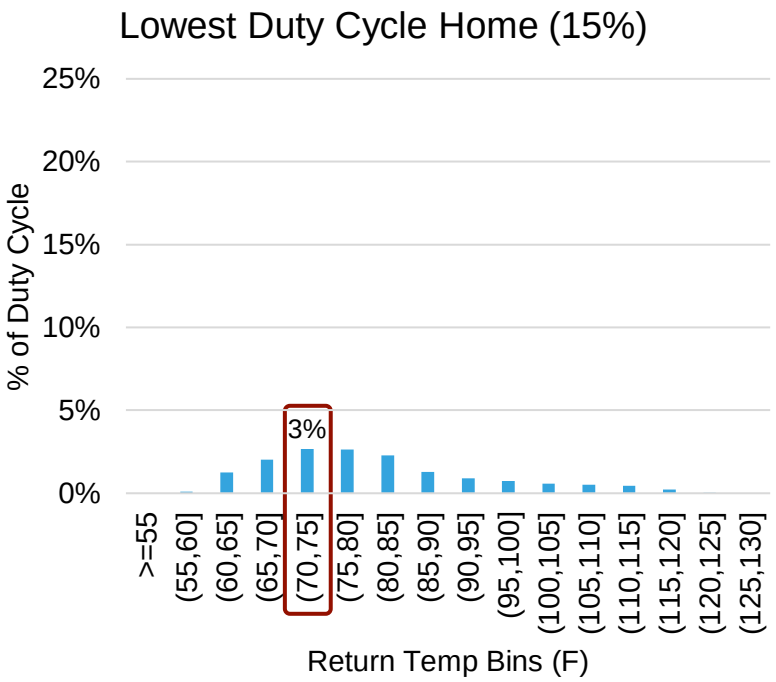
Manage return temperature to maintain **12-14** kBTU/hr SANCO2 capacity

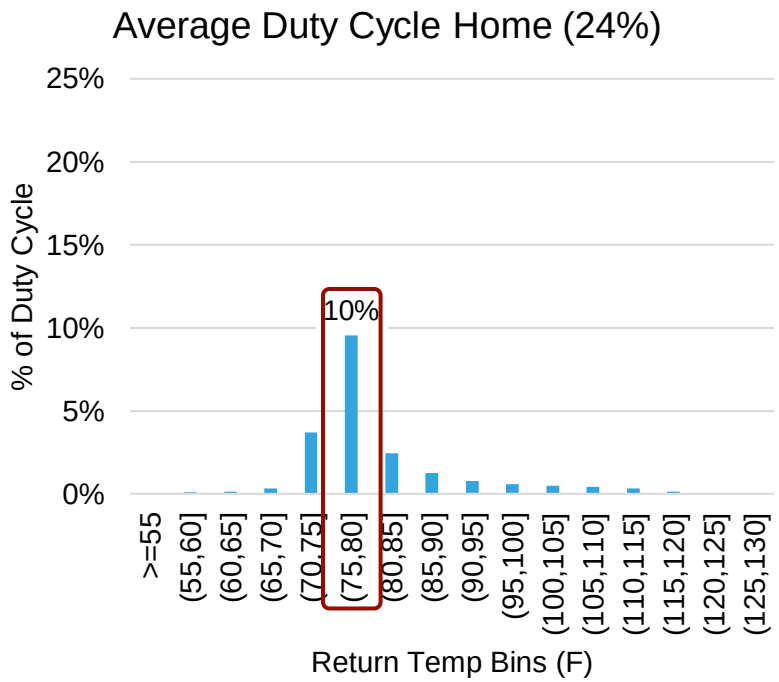


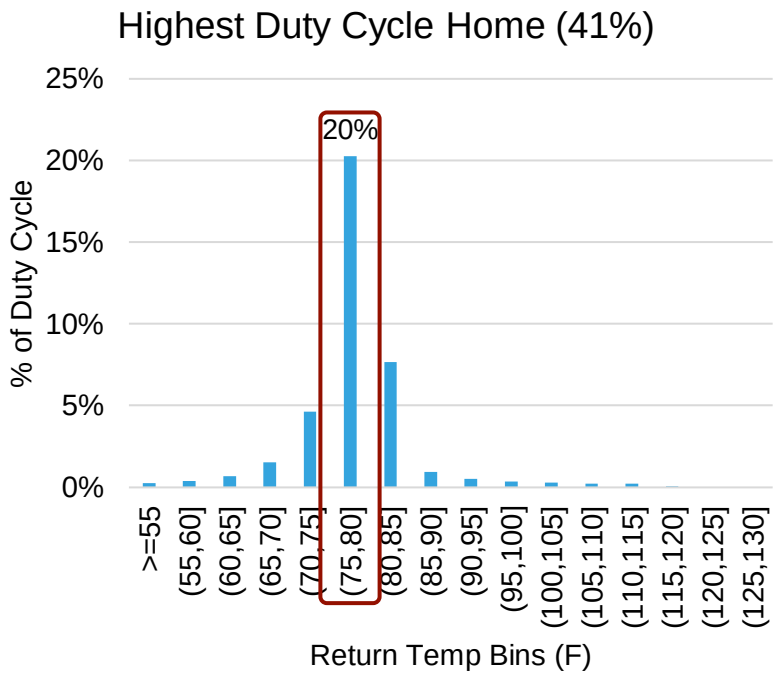
Harvest Pod controls heating flow rate and fan speed to return **85 F** or less water to the SANCO2

SANCO2 Return Temperature

- Return temperature average 75-80 F
- Limited to 115 F for SANCO2 performance and longevity





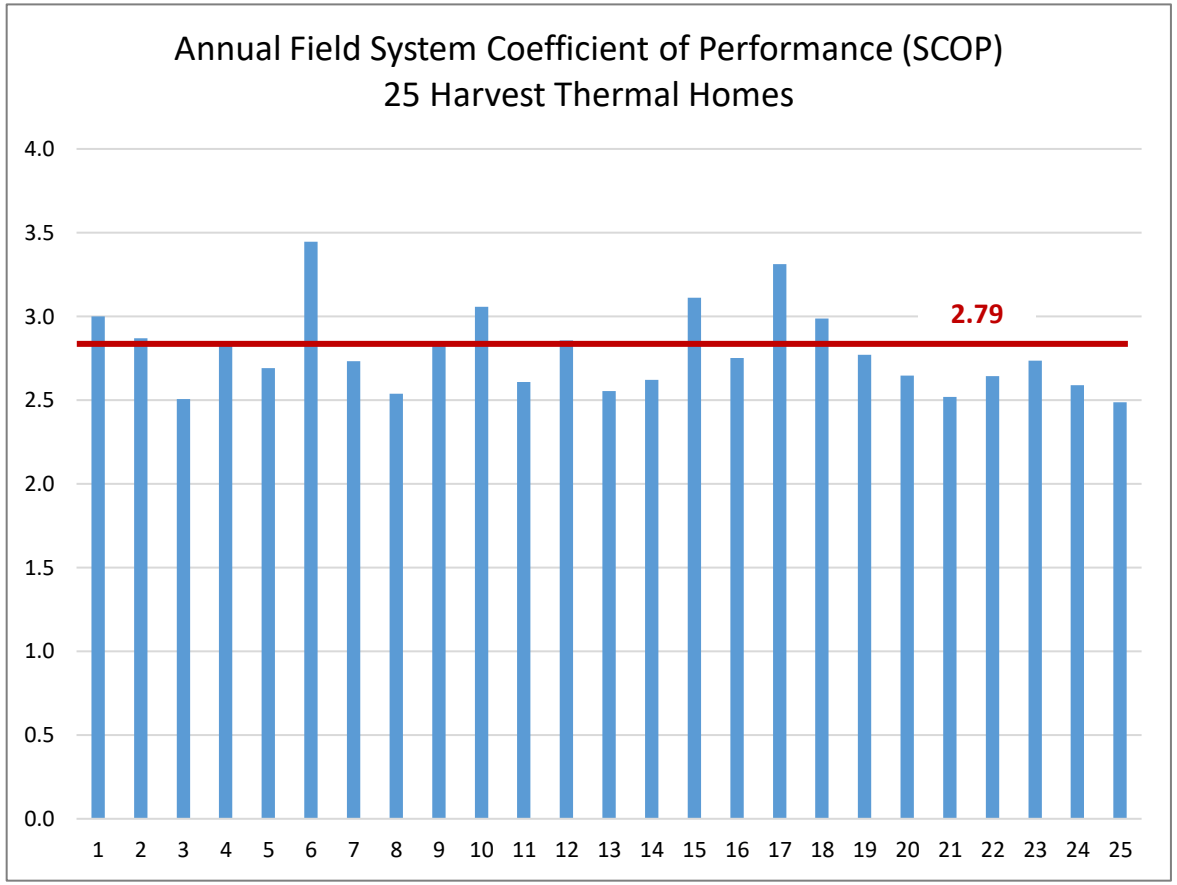


Proven High Efficiency

Field measured performance

Efficiency:

- **365%**: Average field-measured **heat pump** performance
- **280%**: Average field-measured **whole system** performance

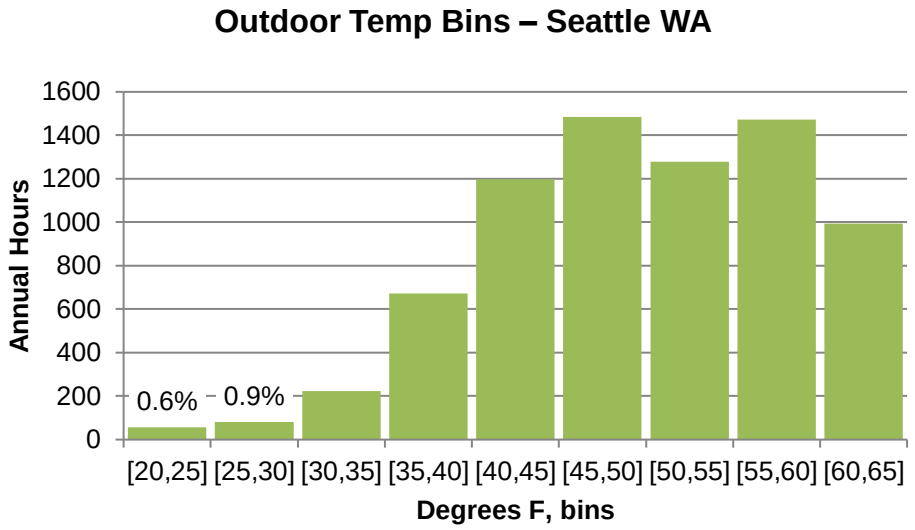


Cold Climate

Multiple backup options for cold temperatures:

- Double up SANCO2
  - Excellent cold climate capabilities:
    100% capacity down to 5 F
    145 F hot water down to -25 F
- Ecoer supplemental heat
  - Also cold climate capable
- Rheem inline auxiliary booster
  - Up to 24 kBTU/h boost
  - Cost-effective if used for < 1% time

WA Seattle-Tacoma 99% design temp: **27 F**

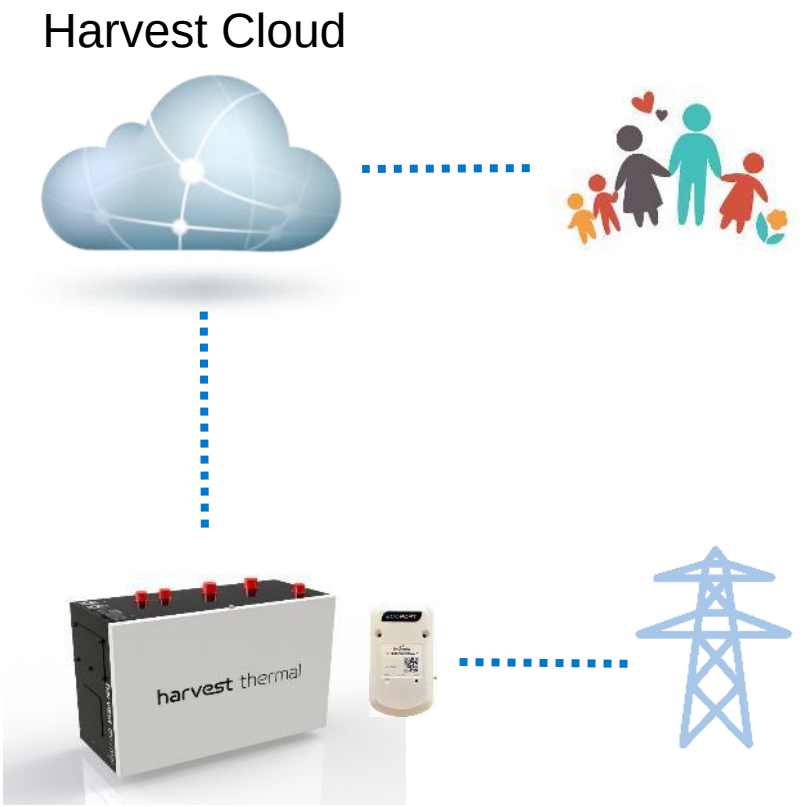


WA Seattle-Tacoma Intl 2007-2021 TMY

The Power of Connectivity

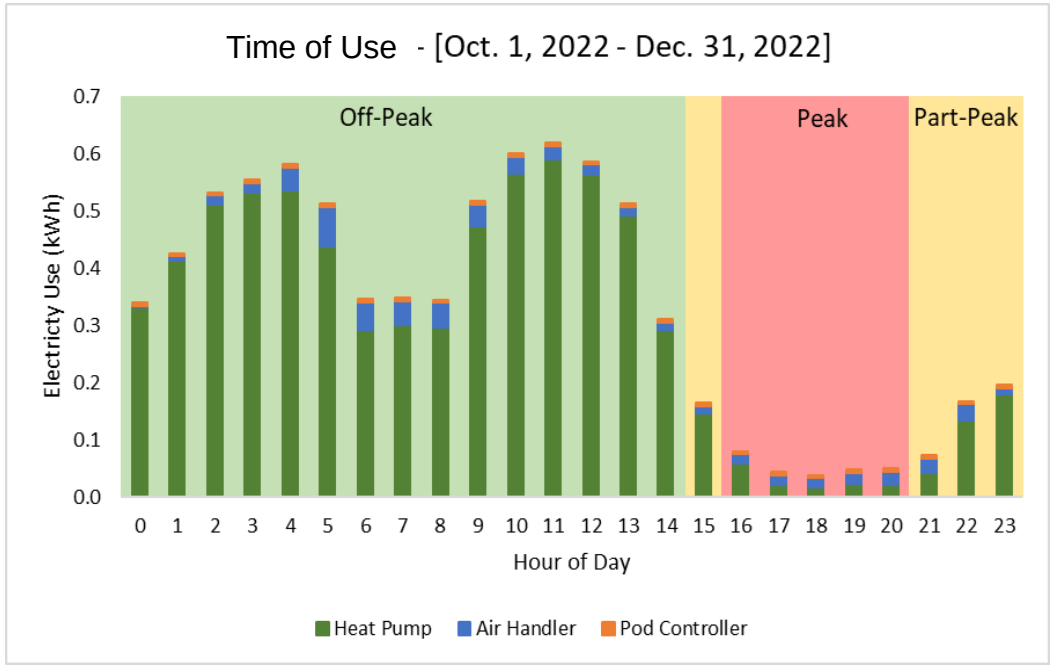
- Weather-aware load-shifting optimization*
- User app for connected experience
- Demand/response, time-of-use, dynamic price
- User alerts, remote diagnostic, and support
- Over-the-air software upgrades for new features

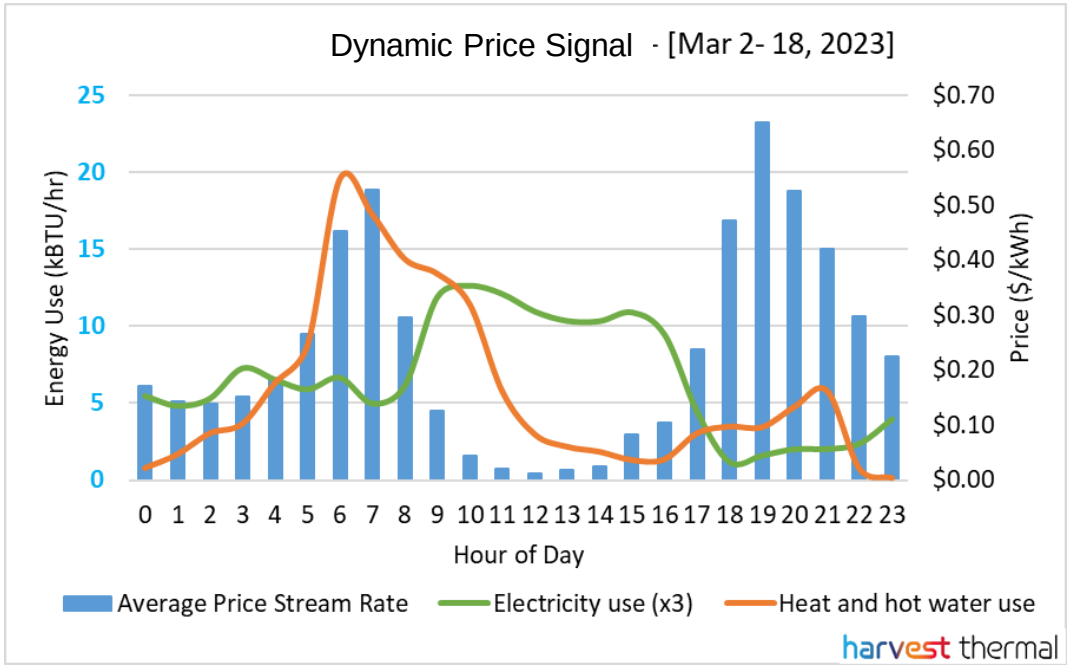
* Connectivity not required for system operation



Demand Flexibility Demonstration

Demonstrated ability to shift up to 90% of both heating and DHW loads off-peak with no compromise on comfort





- ✓ DR events (CTA-2045)
- ✓ Time-of-use
- ✓ Dynamic price and emissions streams

harvest thermal

Summary

- ✓ Best-in-class efficiency
- ✓ Grid flexible
- ✓ Lowest energy costs

harvest thermal

Transforming Home Heating
Comfortably - Cost-effectively - Sustainably

Best for your Home

Best for your Wallet

Best for the Planet