

DOCKETED

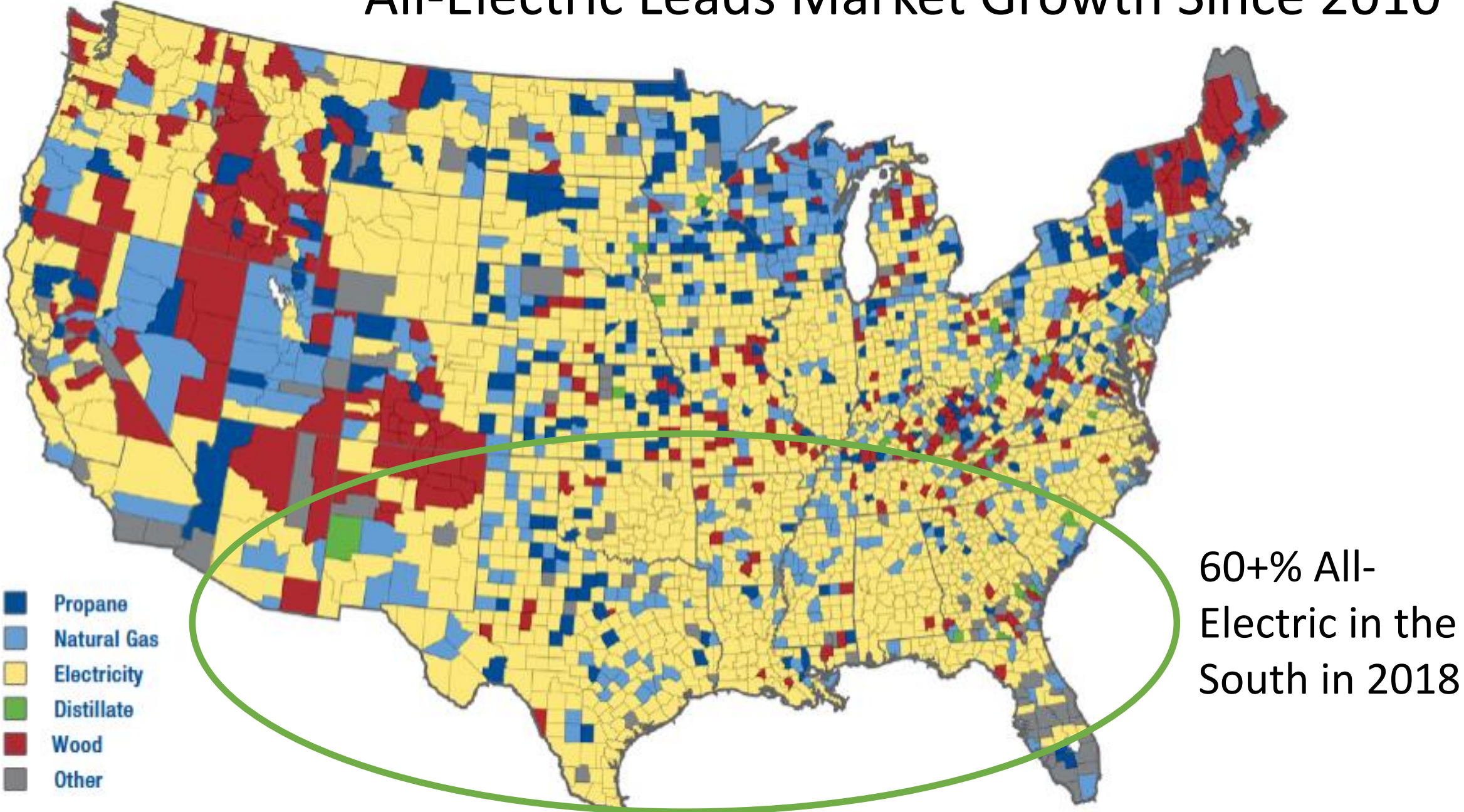
| | |
|-------------------------|--|
| Docket Number: | 19-IEPR-06 |
| Project Title: | Energy Efficiency and Building Decarbonization |
| TN #: | 227577 |
| Document Title: | Electrification of California Households of Modest Means |
| Description: | Presentation by Sean Armstrong of Redwood Energy |
| Filer: | Raquel Kravitz |
| Organization: | Redwood Energy |
| Submitter Role: | Public |
| Submission Date: | 4/9/2019 12:44:41 PM |
| Docketed Date: | 4/9/2019 |

Electrification of California Households of Modest Means

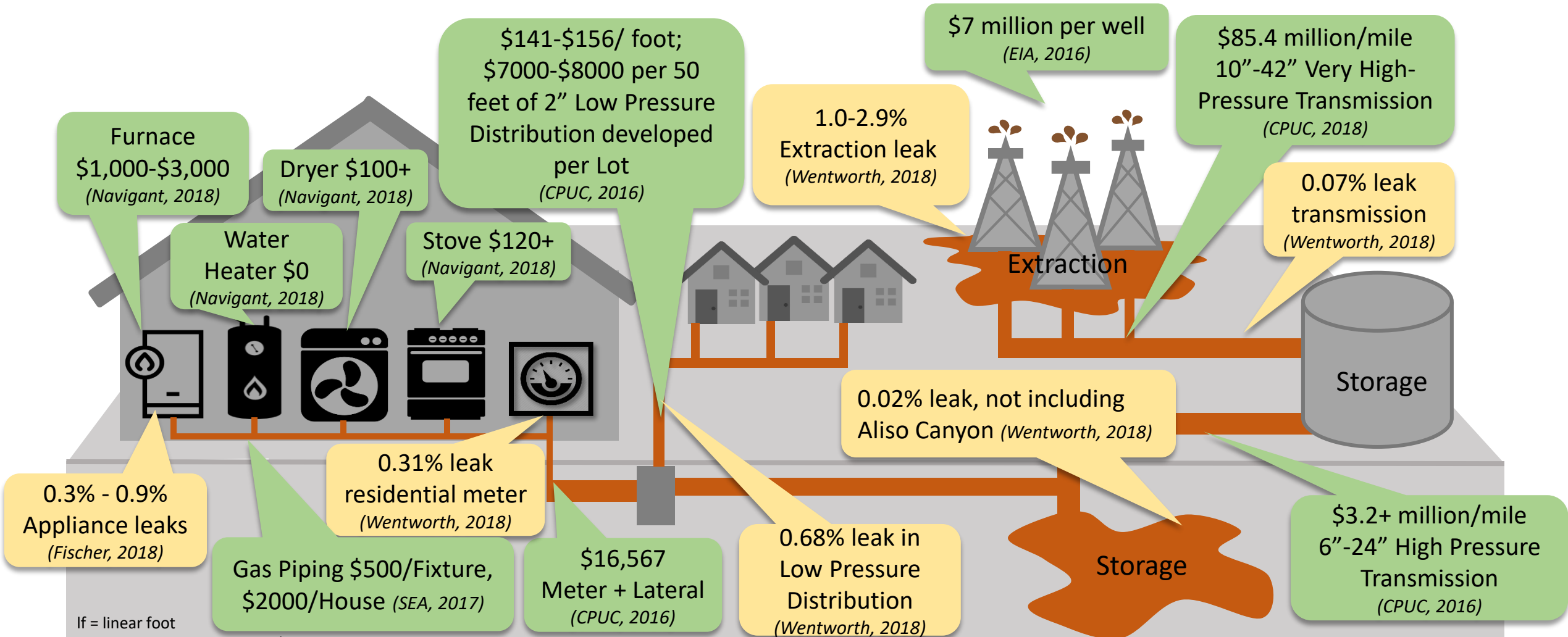




All-Electric Leads Market Growth Since 2010



Methane Delivery Costs More to Build at Every Step: \$25,000-\$30,000 per New California Home in PG&E Territory, Leaks at 2.5% to 5%



If = linear foot

Costs are the marginal cost (\$) of gas over all-electric

*see analysis in Appendix B

**Domestic hot water – heat pump water heater equal in cost to on demand gas water heating

***Aliso Canyon leaked 4.62 Billion cubic feet and alone cost \$1.014 billion shared by 5.6 million meters - \$181/meter (Reuters, Aug 6, 2018)

U.S. Government

Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater – ELECTRIC

Tank Size (Storage Capacity): 59 gallons

Uniform Energy Factor: 3.7

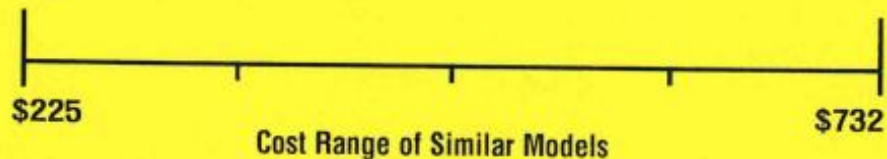
Rheem Sales Company, Inc.

Model XE65T10HD50U1

B00150

Estimated Yearly Energy Cost

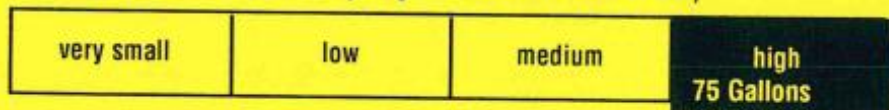
\$161



The estimated yearly energy cost of this model was not available at the time the range was published.

First Hour Rating

(How much hot water you get in the first hour of use)



Estimated Yearly Electricity Use

- Your cost will depend on your utility rates and use.
- Cost range based only on models fueled by electricity with a high first hour rating (75 gallons and over)
- Estimated energy cost is based on a national average electricity cost of 12.00 cents per kWh.



● Estimated yearly energy use: 1341 kWh

www.ftc.gov/energy

Part No. AX4258



U.S. Government

Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater – Natural Gas

Tank Size (Storage Capacity): 46 gallons

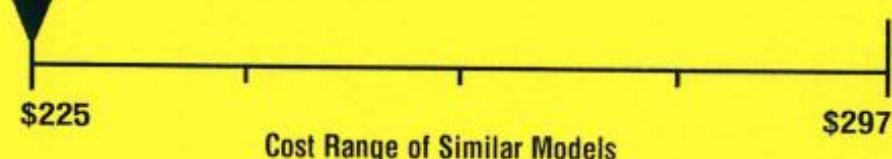
Rheem Sales Company, Inc.

Model ECORHE50

B00007

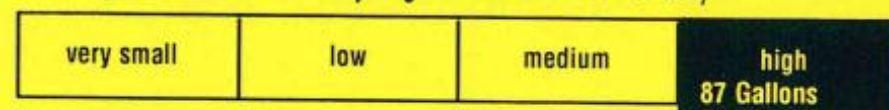
Estimated Yearly Energy Cost

\$231



First Hour Rating

(How much hot water you get in the first hour of use)



Estimated Yearly Energy Use

- Your cost will depend on your utility rates and use.
- Cost range based only on models fueled by natural gas with a high first hour rating (75 gallons and over)
- Estimated energy cost is based on a national average natural gas cost of \$1.09 per therm.



● Estimated yearly energy use: 212 therms

www.ftc.gov/energy

Part No. AX4258



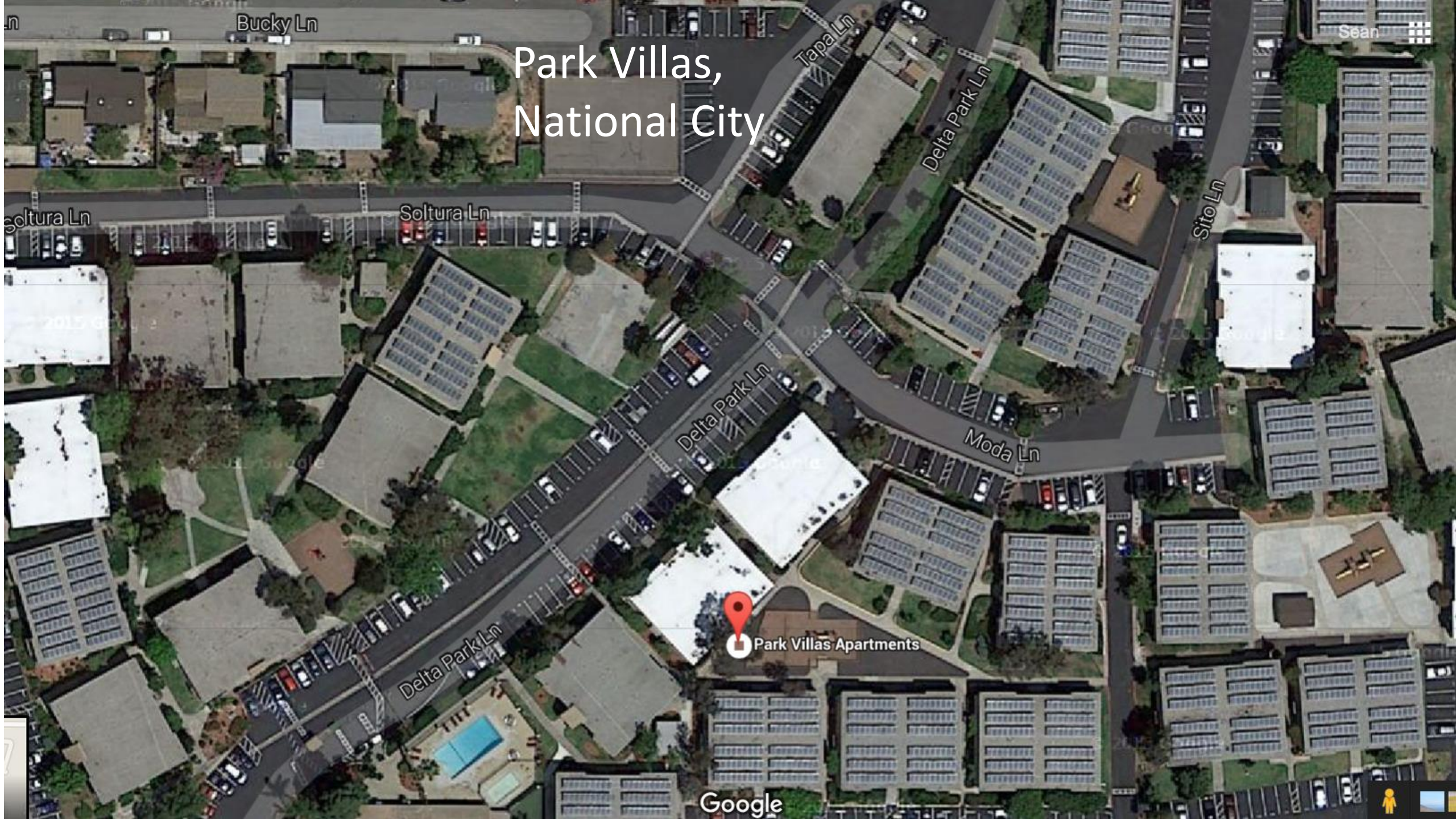


**world
habitat
awards**





Park Villas, National City



 Park Villas Apartments



Valley Glen
Apartments, Dixon



Belle Manor,
Lakeport



King Station,
King City



1006 Golden Valley Drive

Silverleaf Ln

Silverleaf Ln

Silverleaf Ln

Silverleaf Ln

White Oak Dr

Golden Valley Dr

Golden Valley Dr

Golden Valley Dr

Larch Dr







Affordable, Quiet and Efficient Heat Pumps

\$3,000/Zone



\$6,000/Zone

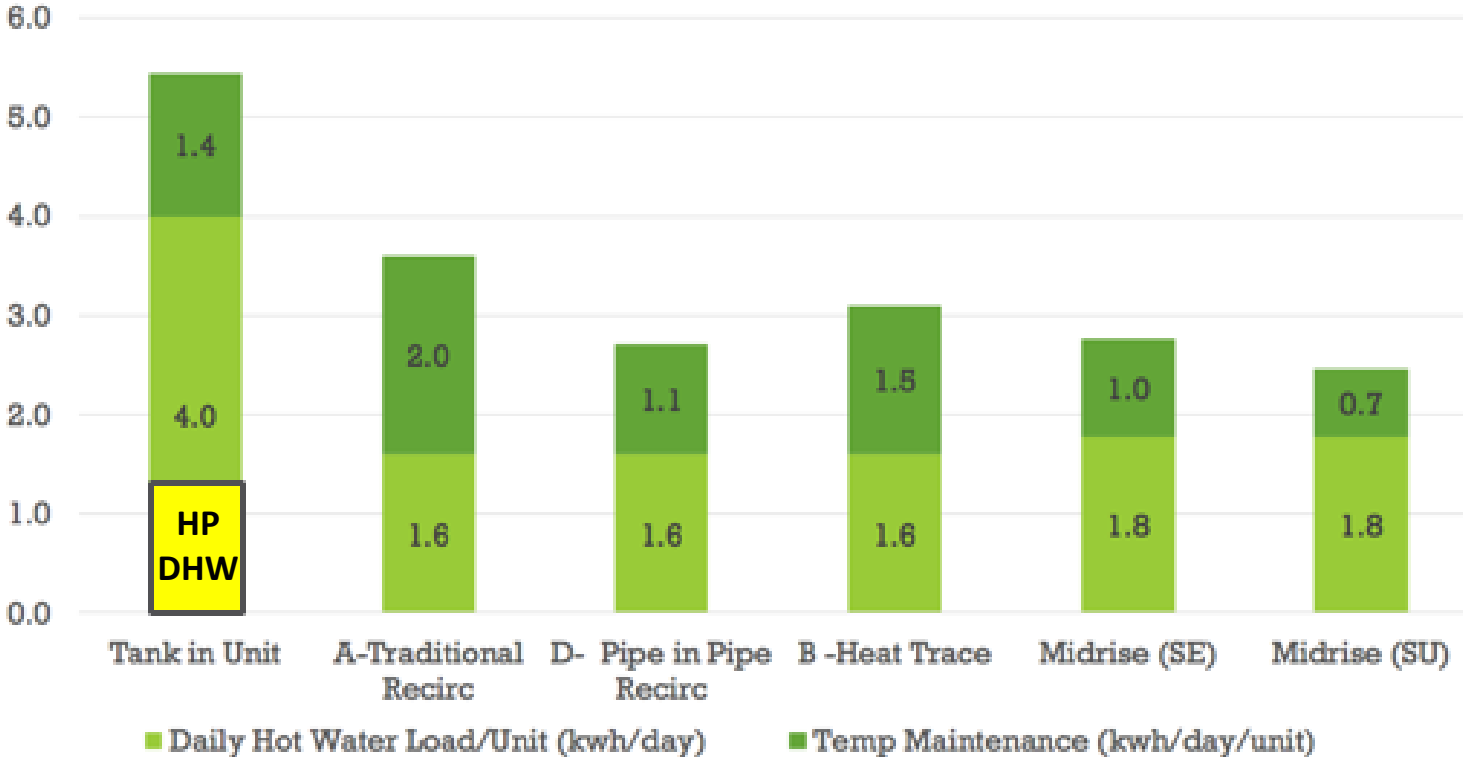


\$14,000/Zone



Large Energy Savings from Using Individual Tanks for Hot Water

**DAILY ENERGY USAGE/UNIT
NORMALIZED TO EQUAL WATER USAGE**



Retrofit-Ready Heat Pump Water Heaters are 1 Year Away



Induction and Radiant Are Cost-Effective

Kenmore Elite



\$1260

Frigidaire Gallery



\$ 1,100

General Electric



\$2,000

Kenmore Radiant



\$500

Electrolux



\$1,800