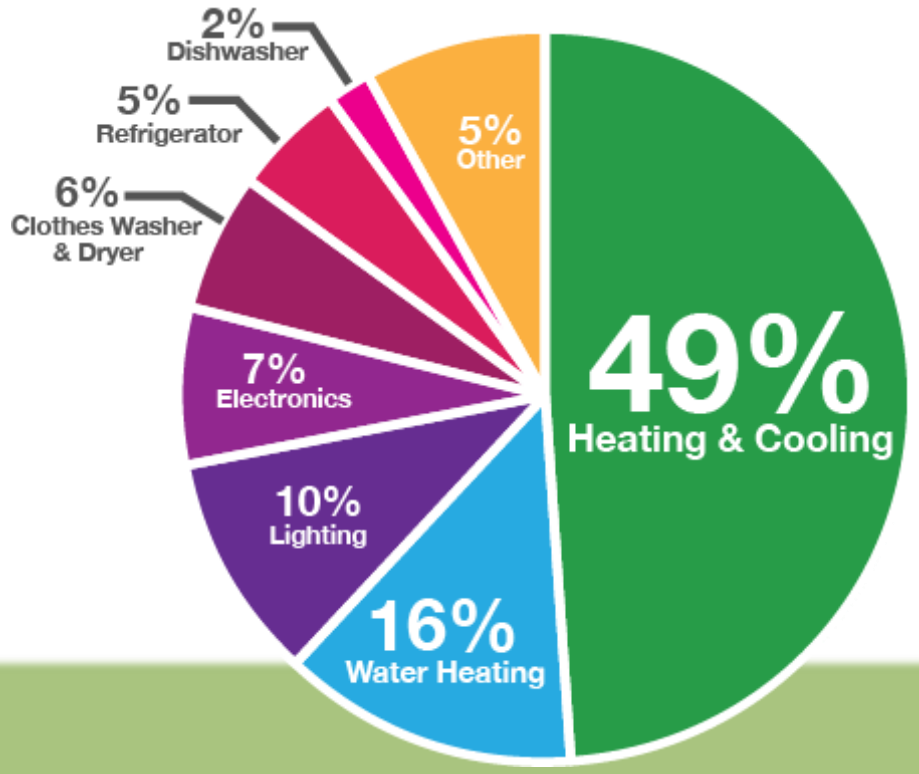
PROTERRA

HEATING COOLING WATER HEATING

Rheem is the only company who can help a homeowner control 65% of their home's energy usage.

Water Heating is The
2nd Highest
Energy User In The House

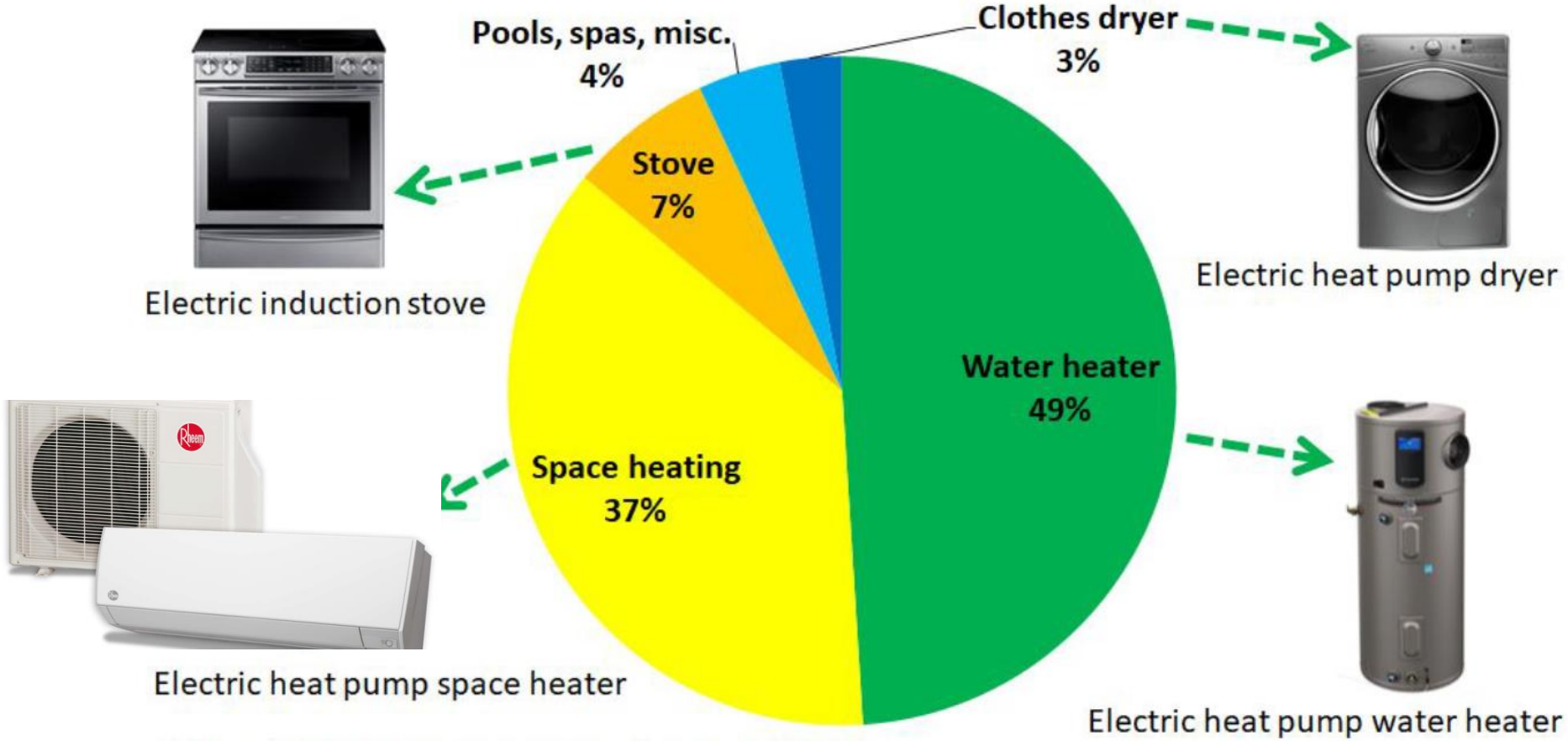


Professional *Prestige*® ProTerra Hybrid Electric with LeakGuard™

California's Energy Usage

What does building electrification look like?

Residential Gas Consumption by End Use in CA



Source: CA Residential Appliance Saturation Study 2010

The new degree of comfort.®

Rheem®

Sustainability

A Greater Degree of Good

HEATING COOLING WATER HEATING

A GREATER DEGREE OF GOOD

**At Rheem,
we believe in going
beyond the expected and
striving for what's possible.
It's how we've run our business and
designed our air and water products
for nearly 100 years—becoming a
trusted leader for our customers and
partners
across the globe.**

**Early 1900 Ruud
Water Heater**

Rheem®

Introducing…

PROTERRA

Rheem® is proud to continue paving the way the for Hybrid Water Heaters by introducing the industry's most efficient, advanced, and widest line of solutions available!

- ***Smart***
- ***Sustainable***
- ***Savings***

The ProTerra Advantage

LeakGuard Auto Shutoff

LeakSense Leak Detection

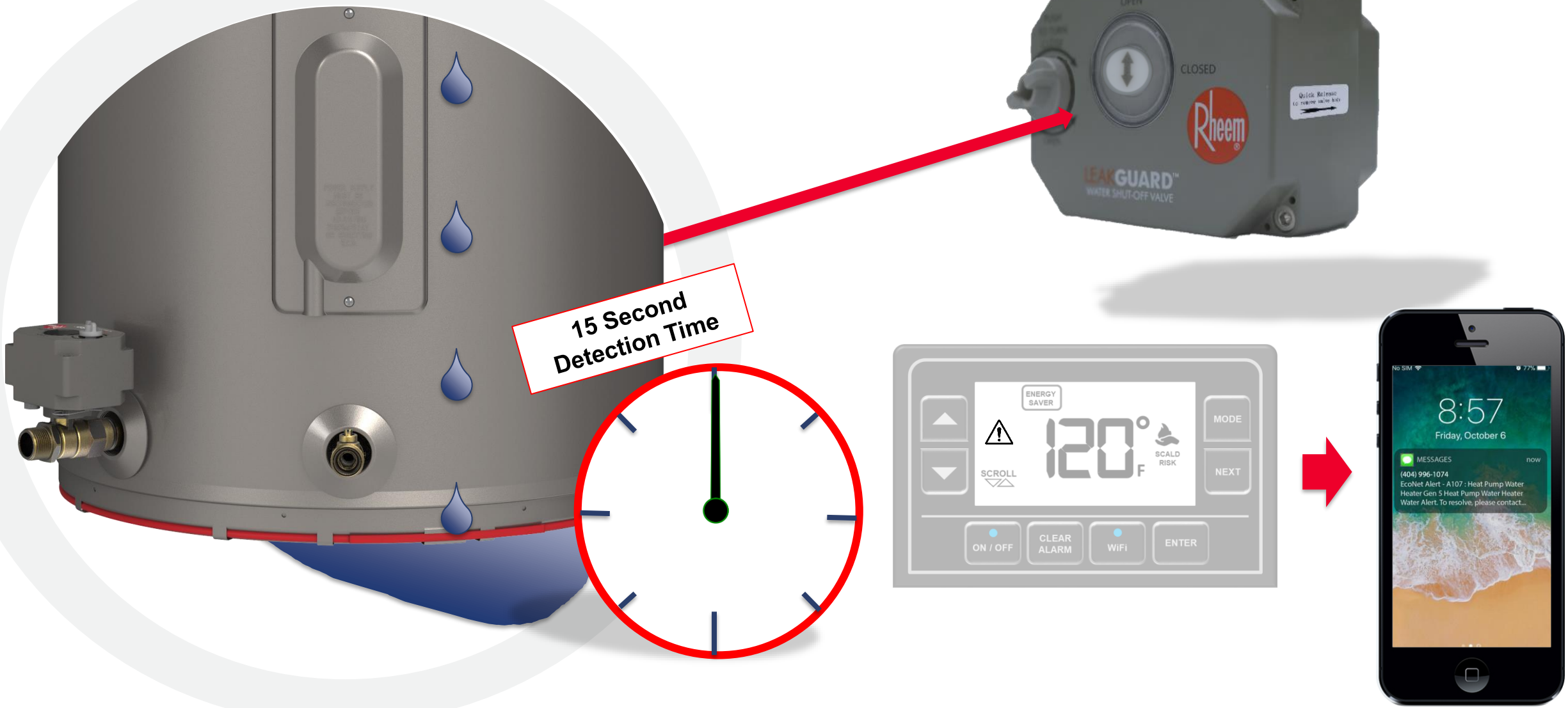
Integrated EcoNet WiFi

Remote Control

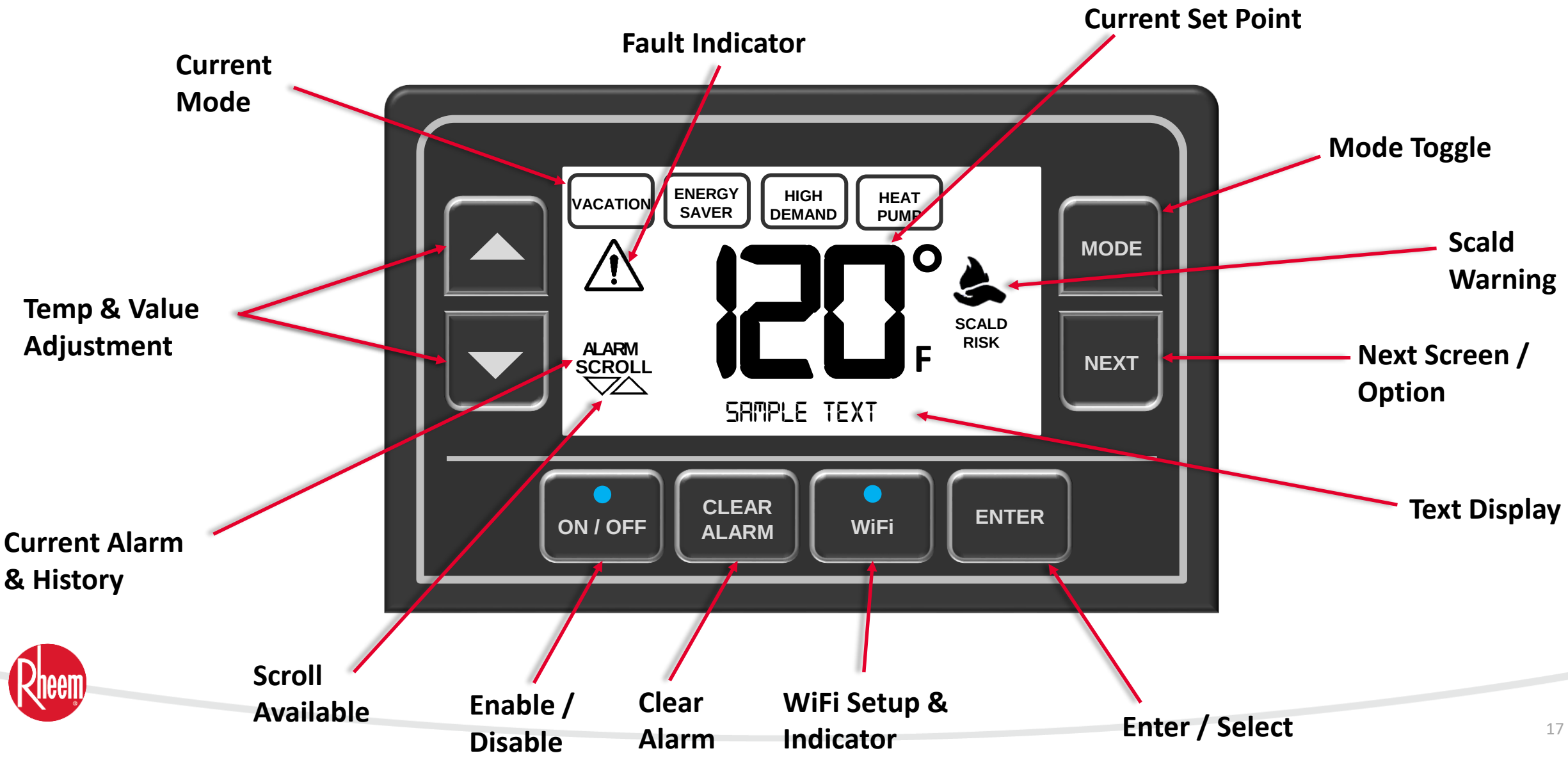
Compressor & Element Health Indicator

Hot Water Availability

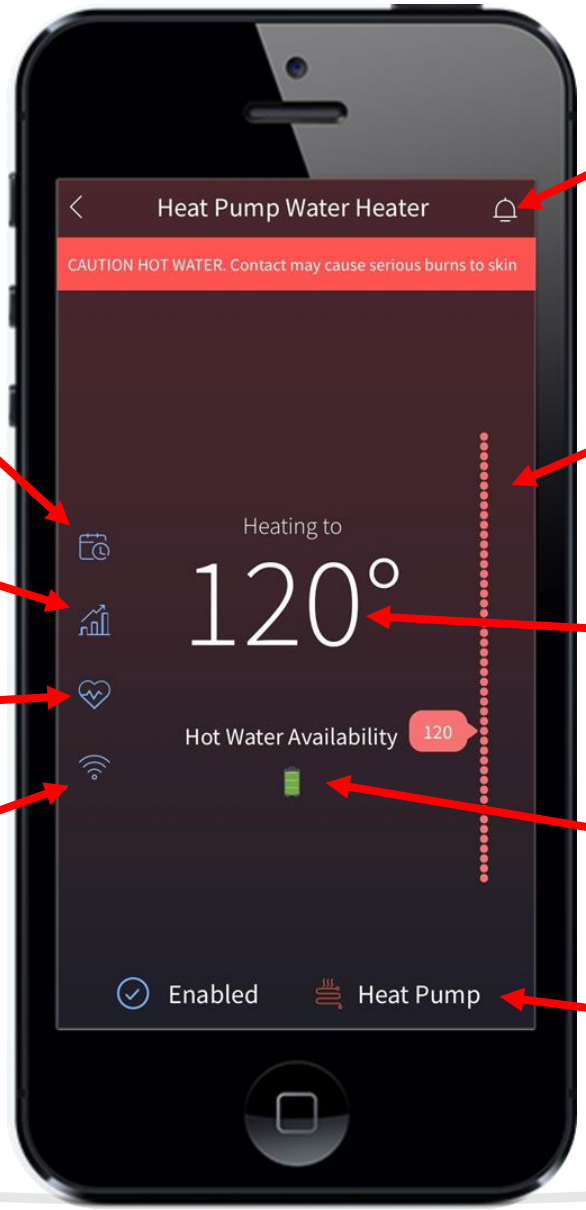
How Does It Work



User Interface



EcoNet App Navigation



Scheduling

Usage Reports

Product Health

Network Settings

Alerts & Notifications

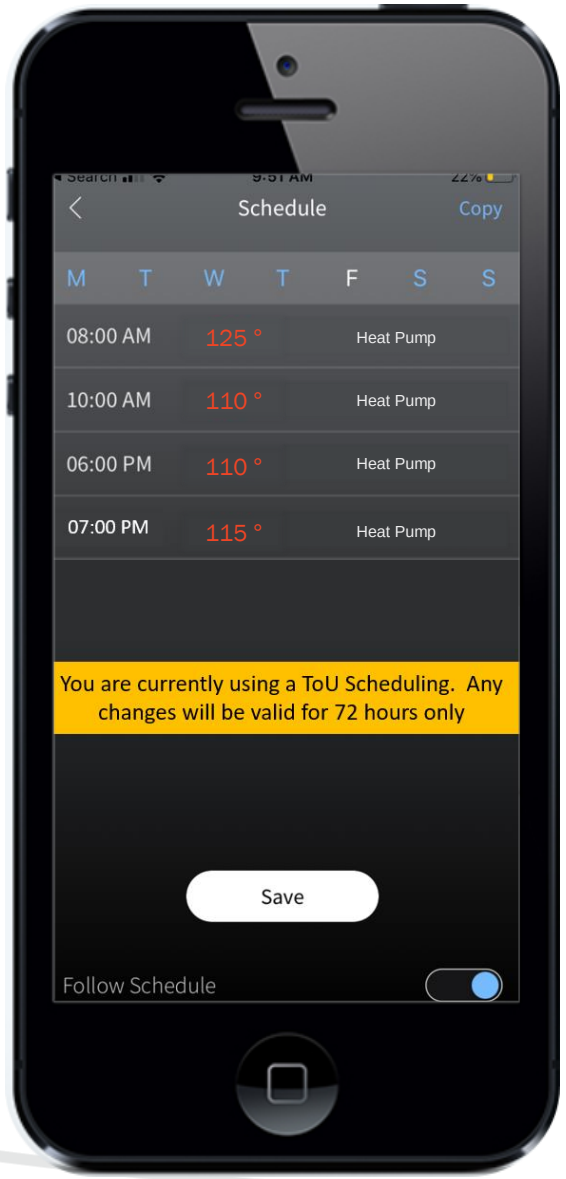
Temperature Adjustment *Can be set as slide or arrows*

Current Set Point

Hot Water Availability

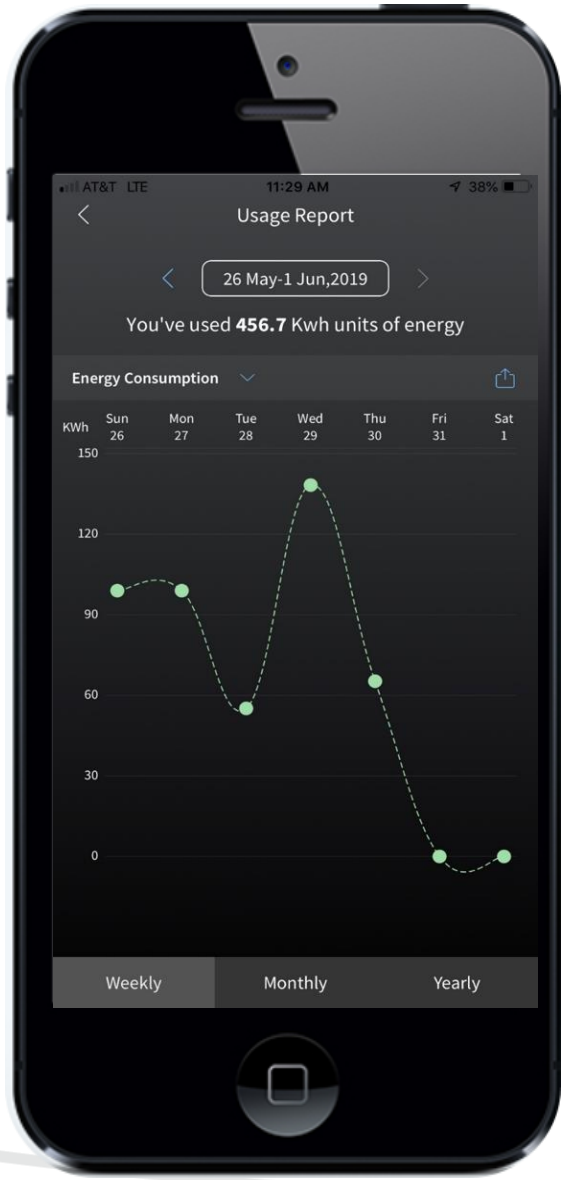
Mode of Operation

EcoNet App - Scheduling



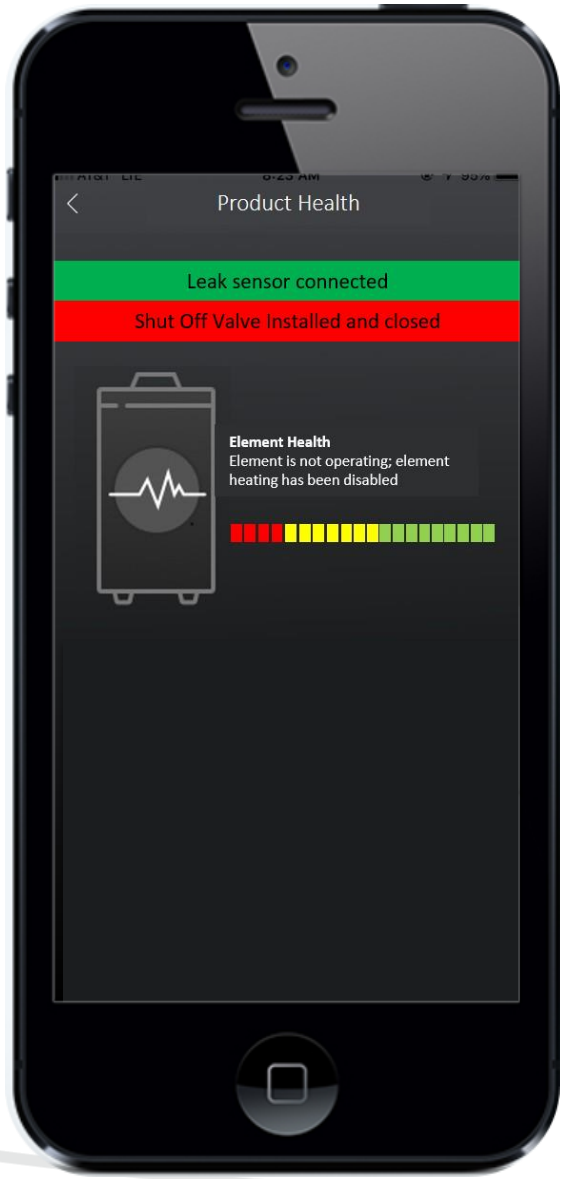
- The scheduling feature allows users to program the water heater to their desired temperature each day (using up to 4 different time blocks). This scheduling feature helps to conserve energy by reducing the set point of the water.

EcoNet App – Usage Reports



- Usage reports give the user ability to see amount of energy (kWH) used in weekly, monthly, or yearly readouts.

EcoNet App – Product Health



- Product health will display the element health and the compressor health.

The ProTerra Advantage

Highest Efficiency

Carbon Footprint Reduction

Energy Usage Tracking

Energy Star® Rated

The ProTerra Advantage – Carbon Footprint Reduction

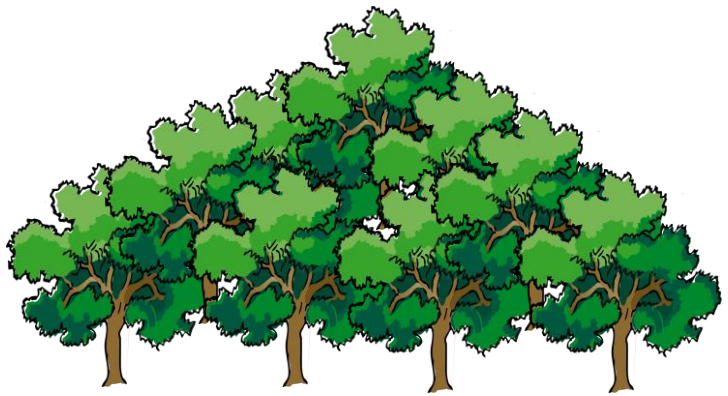
Reduces carbon footprint with a 75% reduction in energy use

ProTerra 50 gallon hybrid water heater total carbon emissions: 846 CO_2 lbs per year

WHAT DOES THAT MEAN???

Standard Electric 50 gallon water heater has a total carbon emission of 3486 CO_2 lbs per year

202 trees needed to offset the carbon emissions*



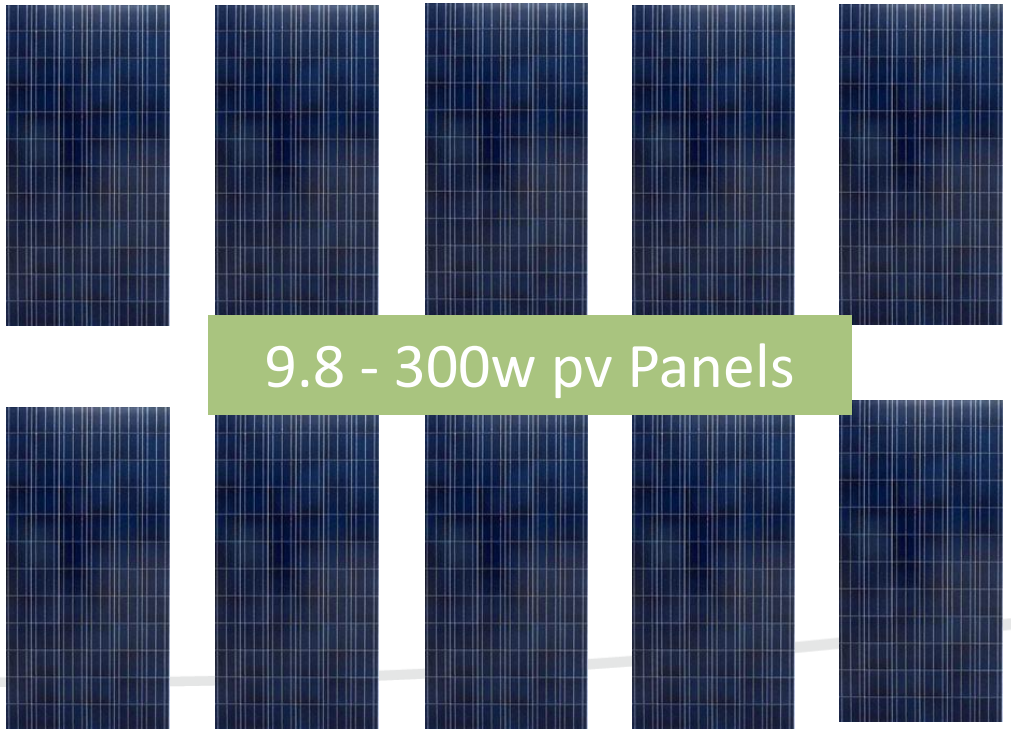
*((Std Electric total carbon emissions (3486)) – Proterra 50 gallon carbon emissions (846) / CO2 stored from tree (13)) = trees needed
(3486 – 864)/13

Value Proposition With Solar

=

2.5 - 300w pv Panels

=



9.8 - 300w pv Panels

The ProTerra Advantage

Save Money & Energy

Energy Saving Schedule

Built-in Demand Response

Vacation/Away Mode

Over 75% Reduction In Energy Usage

867 kWh per Year

U.S. Government — Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater -Electric
Tank Size (Storage Capacity):45 gallons

RHEEM
Model PROPH50 T2 RH375-SO

Estimated Yearly Energy Cost

$104

$120.0 — $423.0

Cost Range of Similar Models

The estimated yearly operating cost of this model was not available when the range was published.

First Hour Rating

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

very small	low	**medium** 67.0 gallons	high

- Your cost will depend on your utility rates and use.
- Cost range based only on models fueled by electricity with a medium first hour rating (51 - 75 gallons).
- Estimated energy cost based on a national average electricity cost of $0.12 per kWh
- Estimated yearly energy use: 866 kWh.

3,531 kWh per Year

U.S. Government — Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater - Electric
Tank Size (Storage Capacity): 46 gallons

A.O. SMITH WATER PRODUCTS CO.
Model (E,P)NS-50

Estimated Yearly Energy Cost

$424

$120 — Cost Range of Similar Models — $423

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)

Very Small	Low	**Medium** 57.0 gallons	High

- Your cost will depend on your utility rates and use.
- Cost range based on models fueled by electric resistance with a medium GPM (51-75 gallons)
- Estimated energy cost based on a national average electric resistance cost of 0.12 cents per kWh
- Estimated yearly energy use: 3531 kWh

ftc.gov/energy

Cost to Heat Water by Fuel

					
Water Heater Type	**Heat Pump**	**Tankless Gas**	**Tankless Electric**	**Tank Electric**	**Tank Gas**
Efficiency	**4**	**0.93**	**0.99**	**0.93**	**0.58**
Annual Operational Cost	**$145**	**$166**	**$585**	**$623**	**$267**

Electric Rate	**$0.192**	**per kwh**
Gas Rate	**$1.500**	**per therm**
Gallons Per Day	**64**	***64 gallons per day is National Avg.***
Desired Temperature	**120**	
Incoming Ground Water	**67**	

80gal HPWH vs Propane

U.S. Government — Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater -Electric
Tank Size (Storage Capacity):72 gallons

RHEEM
Model PROPH80 T2 RH375-SO

Estimated Yearly Energy Cost

$149

$191.0 — $252.0

Cost Range of Similar Models
The estimated yearly operating cost of this model was not available when the range was published.

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

very small	low	medium	high 87.0 gallons

- 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 (greater than 75 gallons).
- Estimated energy cost based on a national average electricity cost of $0.12 per kWh
- Estimated yearly energy use: 1240 kWh.

U.S. Government — Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Water Heater - Propane Gas
Tank Size (Storage Capacity): 48 gallons

A.O. SMITH WATER PRODUCTS CO.
Model (G,X)CRT 50(L) 401

Estimated Yearly Energy Cost

$732

$506 — Cost Range of Similar Models — $732

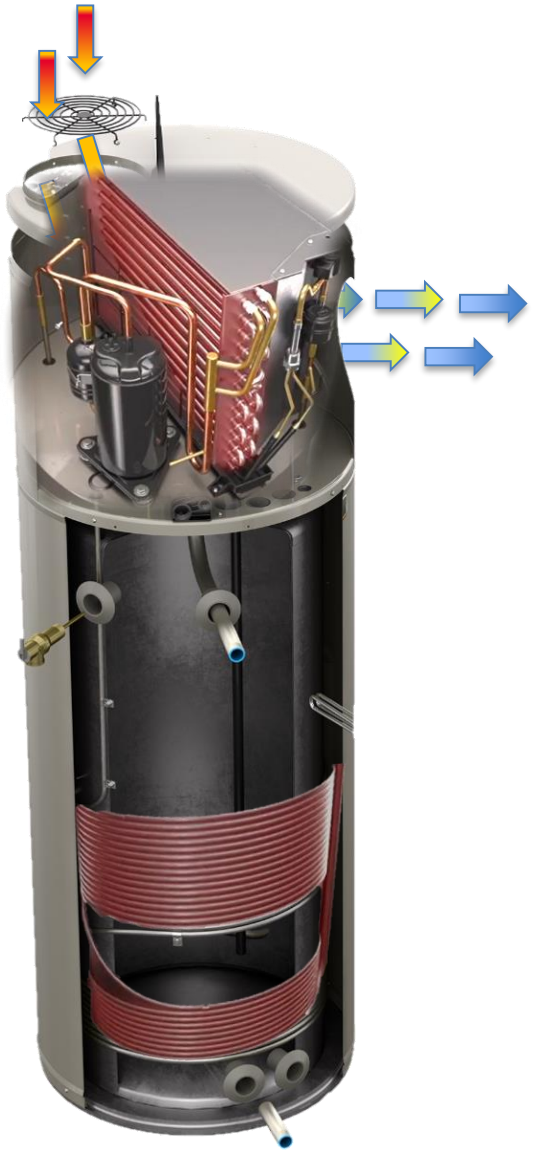
First Hour Rating
(How much hot water you get in the first hour of use)

Very Small	Low	Medium	High 89.0 gallons

- Your cost will depend on your utility rates and use.
- Cost range based on models fueled by propane gas with a high first hour rating (Greater than 75 gallons)
- Estimated energy cost based on a national average propane gas cost of $2.41 per gallon
- Estimated yearly energy use: 304 gallons

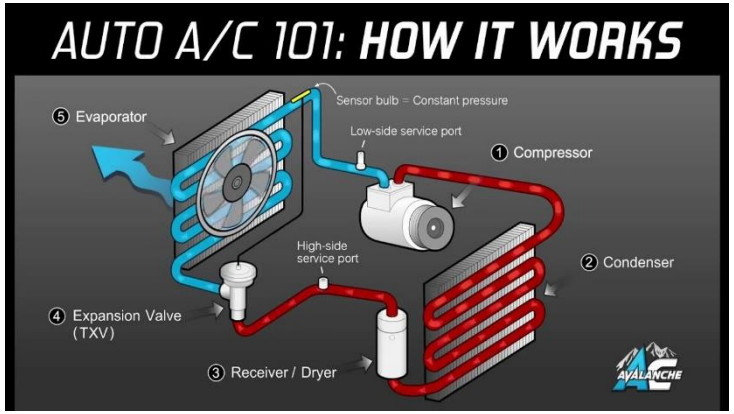
ftc.gov/energy

Rheem Hybrid Heat Pump – How Does It Work?



- Air is pulled in and passes through a filter on the top of the water heater
- Heat in the air is absorbed by refrigerant inside the evaporative coil
- The refrigerant is pumped by a compressor that increases the temperature of the refrigerant on its way to the condenser
- The refrigerant travels through the condenser tubing that is coiled around the tank and transfers the heat to the water
- Cold air and condensation are expelled through this process
- All functions are controlled simultaneously by the Advanced control Panel and there are 5 operational modes

Sound Familiar?



Key Components

- The ONLY 40 gallon Hybrid Electric Water Heater on the market
- Ensure a replacement for any existing standard tank
- Zero clearance requirement for installation in tight spaces*

ALL NEW 40 GALLON MODEL!

Key Components

- All new re-designed display
- Easy to use controls for easy adjustment
- All new Test Mode for easy diagnostics

New Controller

Key Components

- CTA 2045 Connector
- Allows utility company to access and control the water heater during peak usage times

Demand Response Connector

*CTA connector only available on Proterra and Proterra with LeakGuard models

What Happen During a DR Event?

During a demand response event, the utility company is doing a load shift or reducing the electricity usage from the water heater by:

- Decreasing the water heater set point
- Changing the mode of operation
- Disabling the water heater

Demand Response Event

Integrated WiFi

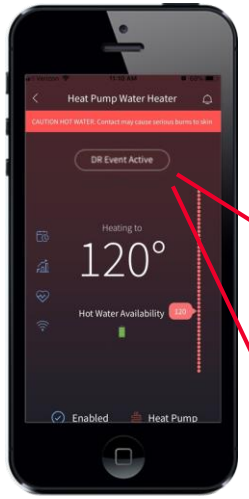
OR

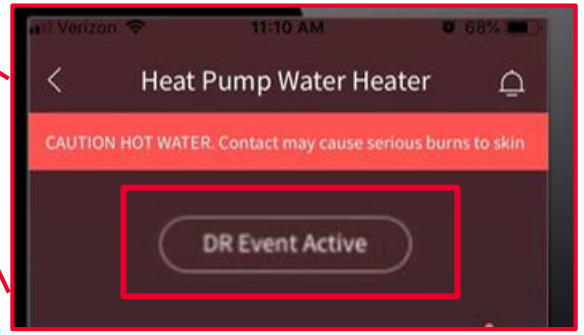
CTA 2045 Module

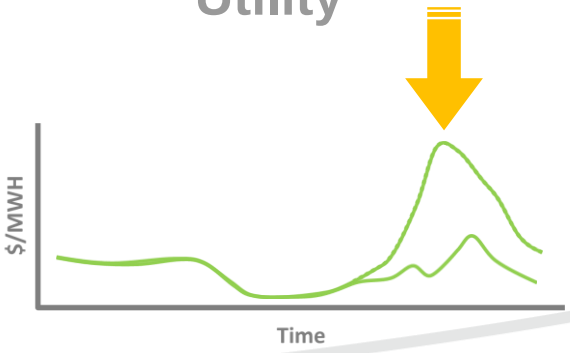
Demand Response

- ✓ Peak Shaving
- Energy Storage
- Grid Emergency

Utility





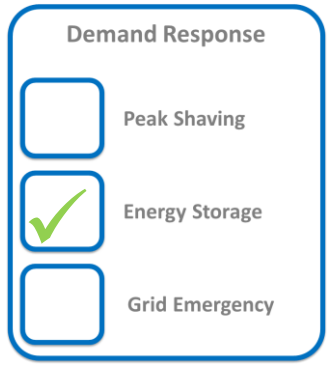


Demand Response Event

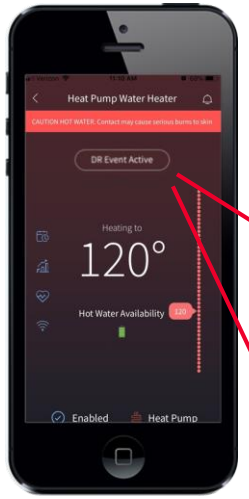
Integrated WiFi

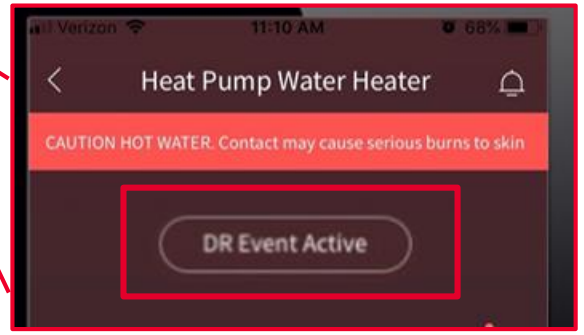
OR

CTA 2045 Module



Utility





Demand Response Event

Integrated WiFi

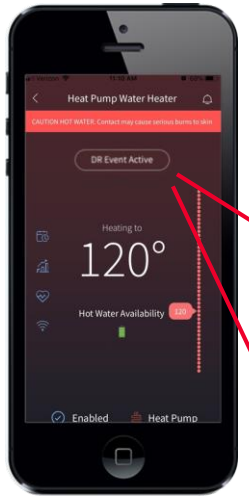
OR

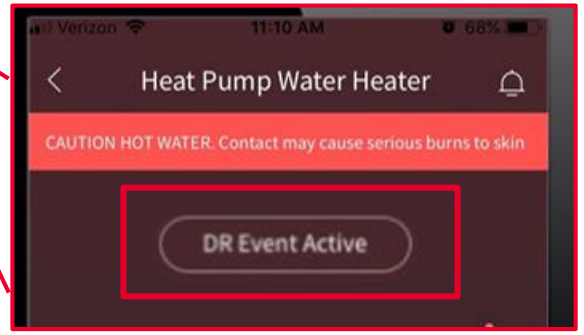
CTA 2045 Module

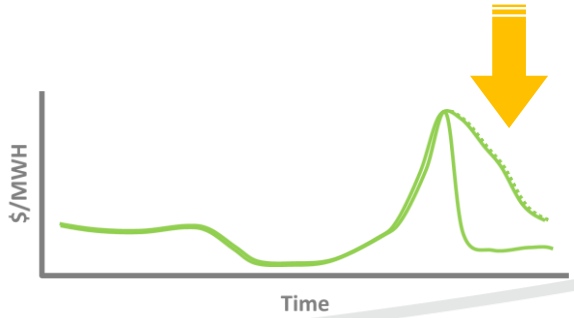
Demand Response

- Peak Shaving
- Energy Storage
- ✓ Grid Emergency

Utility

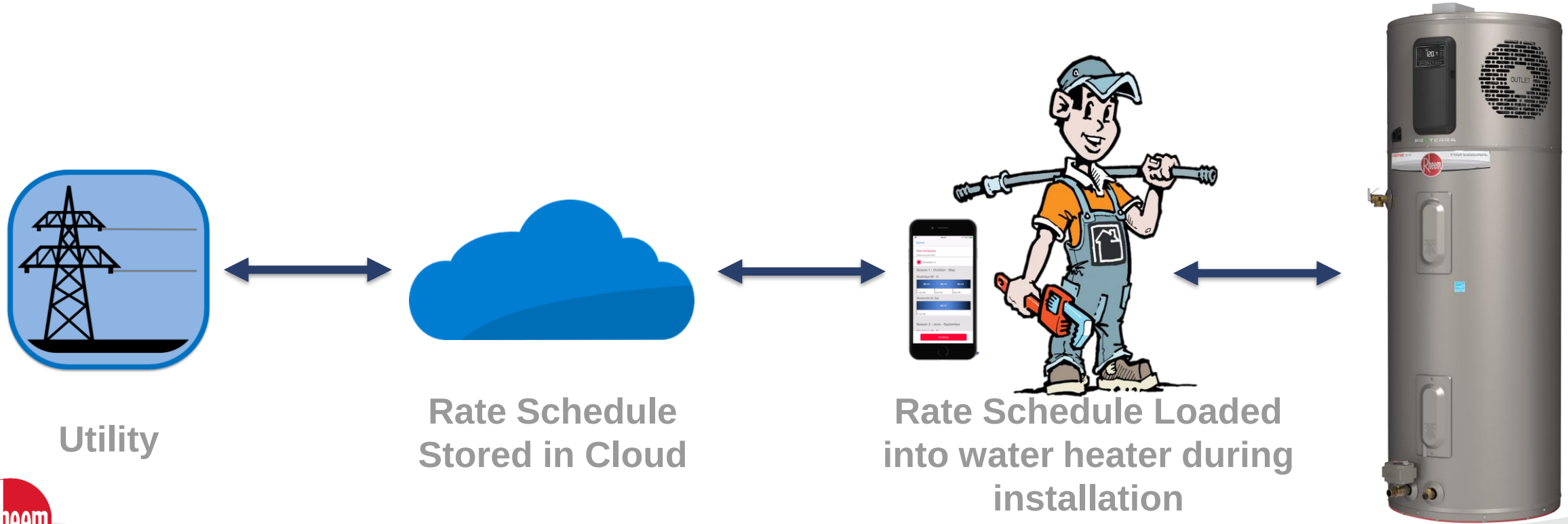






JA13 – Heat Pump Demand Management System

- JA13 scheduling allows for utilities to load a custom rate schedule via MyRheem portal. This custom rate schedule is then loaded into the water heater (wirelessly) at the time of installation. This data is then stored in the water heater until the unit is ready for use (new construction scenarios).



Modes Of Operation

ENERGY SAVER (default mode)

- A recovery using the heat pump and upper element. Primary recovery with Heat Pump (up to 1,700W equivalent) and element when needed (4,500W). In high output situations, heater is producing the equivalent of up to 6,200W

HEAT PUMP

- Delivers up to 1,700W to the water at standard ambient conditions
- Operating temperature of 37^{o} - 145^{o}

HIGH DEMAND

- Upper/lower element along w/heat pump simultaneously heats the water. Up to 6,200W of recovery. Elements in this mode activate quicker

ELECTRIC

- Either element is used to heat the water

VACATION

- Tank temperature will be maintained at 65^{o} for 1-28 days or held indefinitely when “HOLD” feature is used

MODEL LINE UP / SPECS

What's New With ProTerra

HYBRID BUILDER

- NEW! 40, 50, 65, 80 Gallon Capacities
- Remote Access (Integrated WiFi)
- Zero Clearance Requirement
- Widest Range of Ambient Temp
- Less Than Two-year Payback
- Meets NEEA Tier 3
- Leak Detection Ready

PROTERRA

In addition to the Builder model features, this model includes…

- ✓ Up to 4.00 UEF
- ✓ Demand Response Ready (CTA 2045)
- ✓ Quietest (<50 dBA)
- ✓ Automatic Maintenance Alert
- ✓ $4,800 Energy Cost Savings
- ✓ Leak Detection and Shutoff Valve Ready
- ✓ Meets NEEA Tier 4

PROTERRA W/LEAKGUARD

In addition to the Plus model features, this model includes…

- ✓ Auto Water Shut-off Valve (LeakGuard)
- ✓ Integrated 360° Water Leak Detection (LeakSense)

LeakSense and LeakGuard Add-on

Hybrid Builder Model

Leak detection ready!

Easily upgrade the Builder model with LeakSense Kit

Part Number	Kit
AP19134	Leak Sensor

ProTerra Model

Leak detection and shutoff valve ready!

Easily upgrade the Plus model with LeakSense / LeakGuard Kit

Part Number	Kit
SP21111	Leak Sensor and Shutoff Valve

Specifications

Capacity	40 Gallon		50 Gallon		65 Gallon		80 Gallon	
BREAKER SIZE	30A	15A	30A	15A	30A	15A	30A	15A
MODEL NUMBER	PROPH40 T2 RH375-SO	PROPH40 T2 RH345-15	PROPH50 T2 RH375-SO	PROPH50 T2 RH375-15	PROPH65 T2 RH375-SO	PROPH65 T2 RH355-15	PROPH80 T2 RH400-SO	PROPH80 T2 RH370-15
UEF	3.75	3.45	3.75	3.75	3.75	3.55	4.00	3.70
RECOVERY	26	16	27	16	27	16	27	16
FIRST HOUR DELIV	60	46	67	54	75	54	87	67
HEIGHT	63”		62”		65”		75”	
DIAMETER	20 1/4”		22 1/4”		24 1/4”		24 1/4”	
COMPRESSOR BTU	4200		4200		4200		4200	
WEIGHT	177 lbs		193 lbs		262 lbs		281 lbs	
VOLTAGE	240V		240V		240V		240V	
UPPER ELEMENT	4500w	2250W	4500W	2250W	4500W	2250W	4500W	2250W
LOWER ELEMENT	4500W	2250W	4500W	2250W	4500W	2250W	4500W	2250W

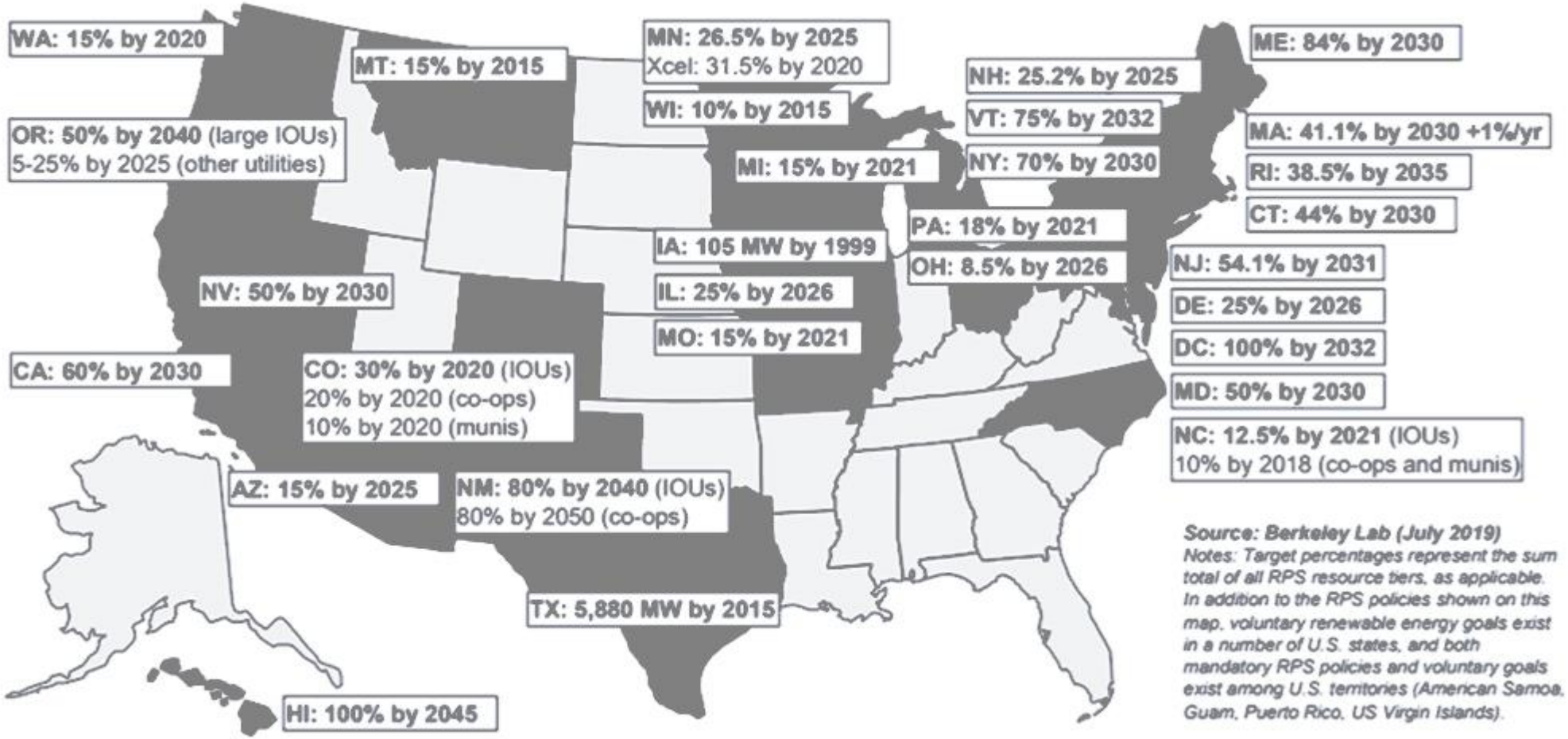
Hybrid Builder Model Line Up

Builder Models	Rheem®	Ruud®
30 Amp		
40 Gallon	PRO H40 T2 RH310BM	PRO H40 T2 RU310BM
50 Gallon	PRO H50 T2 RH310BM	PRO H50 T2 RU310BM
65 Gallon	PRO H65 T2 RH310BM	PRO H65 T2 RU310BM
80 Gallon	PRO H80 T2 RH310BM	PRO H80 T2 RU310BM

Renewable Portfolio Standards Goal by State

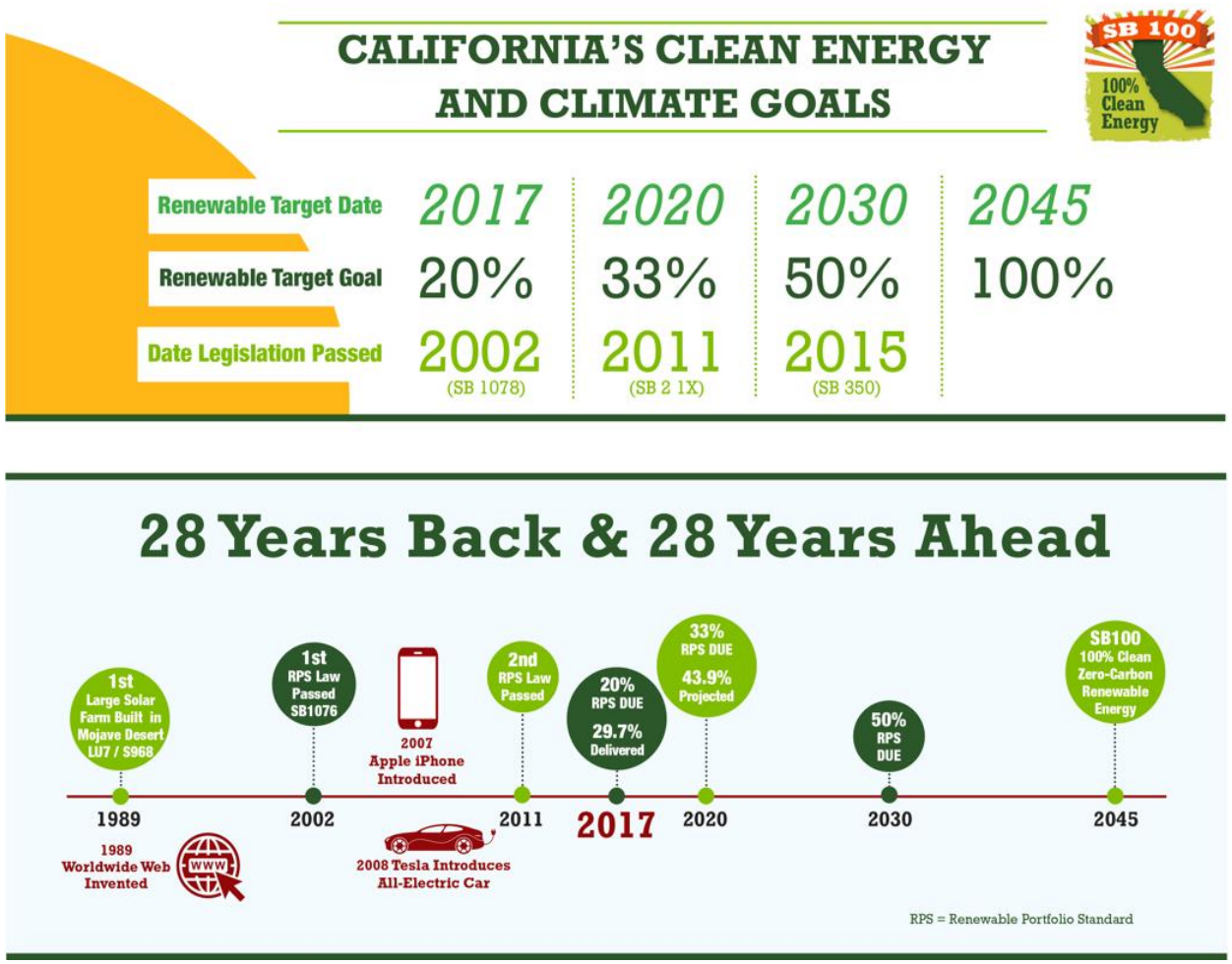
RPS Policies Exist in 29 States and DC

Apply to 56% of Total U.S. Retail Electricity Sales



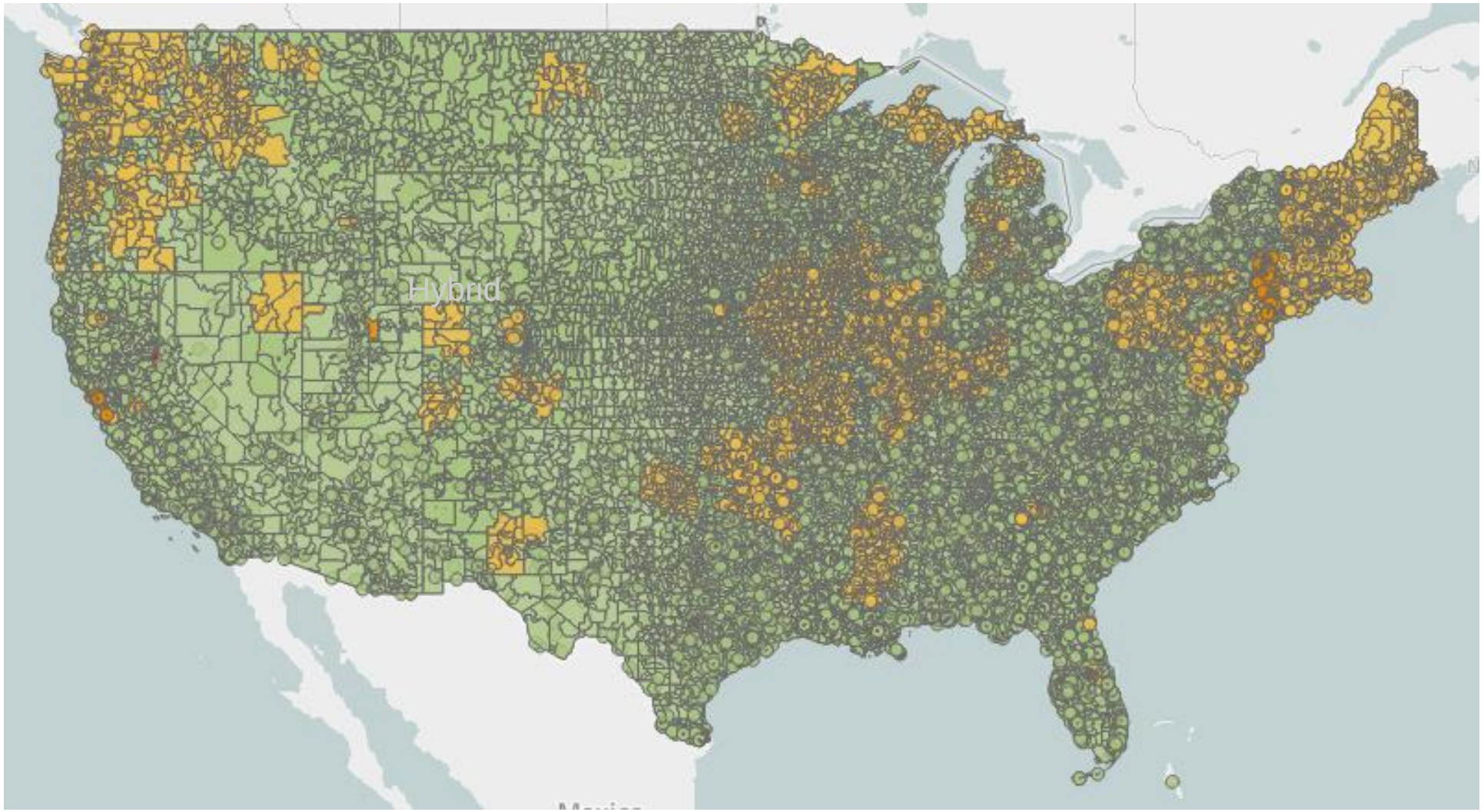
Source: Berkeley Lab (July 2019)
Notes: Target percentages represent the sum total of all RPS resource tiers, as applicable. In addition to the RPS policies shown on this map, voluntary renewable energy goals exist in a number of U.S. states, and both mandatory RPS policies and voluntary goals exist among U.S. territories (American Samoa, Guam, Puerto Rico, US Virgin Islands).

RPS = Renewables Portfolio Standards



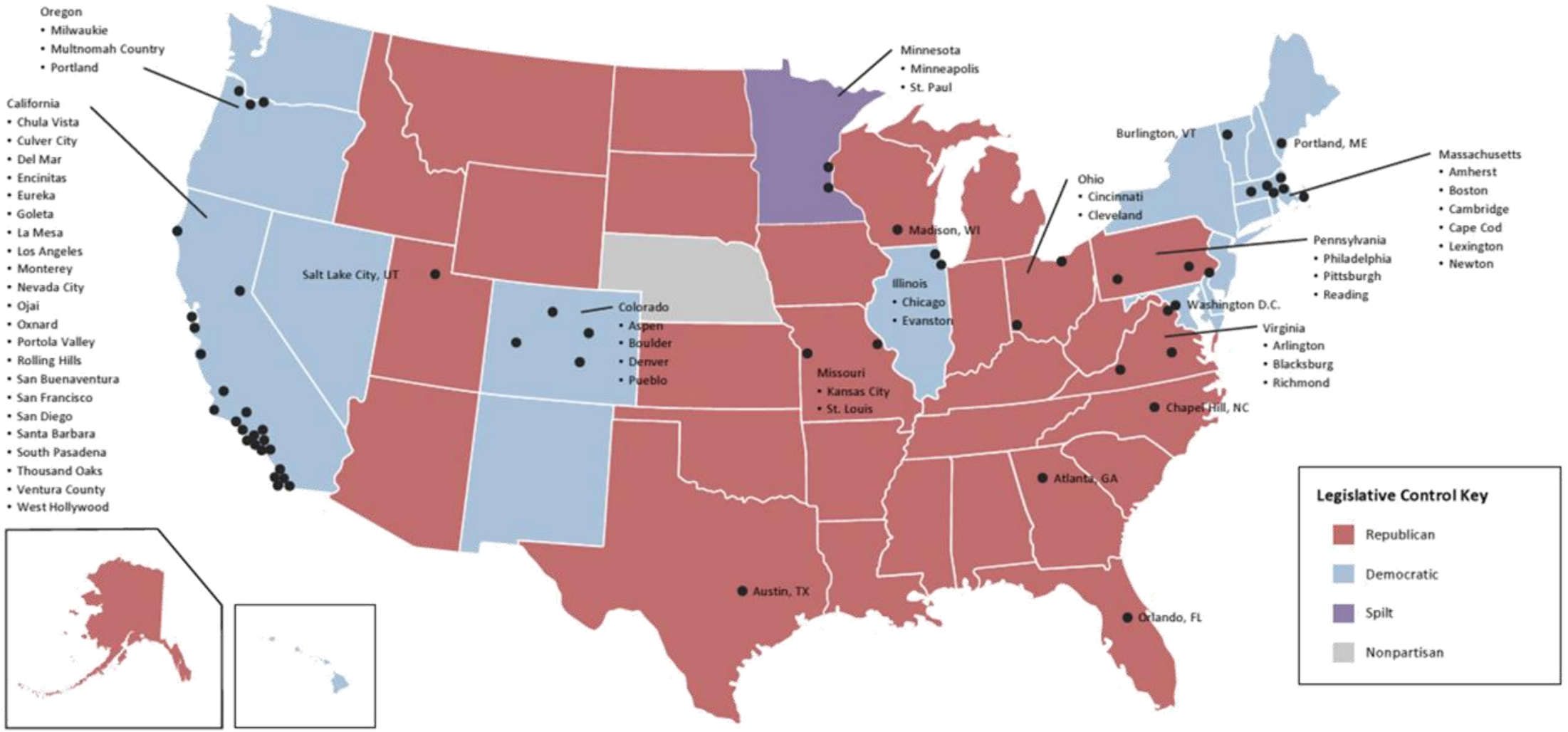
SB100-California Moves Toward Carbon-Free Economy

Heat Pump Utility Rebates



_Rebate Buckets
- Over $2000
- $1000 - $2000
- $500-$999
- $100 - $499
- $0-$99

Natural Gas Ban Watch List



California Electrification

Berkeley becomes first U.S. city to ban natural gas in new homes

By Sarah Ravani Updated 7:23 pm PDT, Wednesday, July 17, 2019

374

SLO wants to be carbon-neutral 10 years faster than the rest of California

BY NICK WILSON

SEPTEMBER 24, 2018 06:37 PM, UPDATED SEPTEMBER 25, 2018 10:06 PM

BRIEF

San Jose becomes largest city requiring all-electric buildings, as local climate actions rise

Credit: City of San Jose

CA Title 24 Changes

CALIFORNIA'S 2019 RESIDENTIAL
BUILDING ENERGY EFFICIENCY STANDARDS

CALIFORNIA ENERGY COMMISSION

The state's energy efficiency standards for new buildings and appliances have saved consumers billions in lower electricity and natural gas bills. The 2019 Building Energy Efficiency Standards for residential buildings includes a first-in-the-nation requirement to install solar photovoltaic systems. Other features enable homes to reduce the electricity demand from the grid, helping to reduce energy bills and the carbon footprint.

$19,000 SAVINGS OVER A 30 YR. MORTGAGE | INITIAL COST $9,500

CALIFORNIA ENERGY COMMISSION

SOLAR PHOTOVOLTAIC SYSTEM

Promote installing solar photovoltaic systems in newly constructed residential buildings. The systems include smart inverters with optional battery storage. This will increase the self-utilization of the electricity generated to power the home's electricity loads including plug-in appliances. California is the first state in the nation to require smart systems on homes.

DEMAND RESPONSE COMPLIANCE OPTIONS

Encourage battery storage and heat pump water heaters that shift the energy use of the house from peak periods to off-peak periods. Utilities moving to time-of-use pricing assists the grid to meet the state's climate change goals and helps homes reduce energy bills.

HEALTHY INDOOR AIR QUALITY

Enable using highly efficient filters that trap hazardous particulates from both outdoor air and cooking and improve kitchen ventilation systems. Moving air around and in and out of the home while filtering out allergens and other particles makes the home healthier.

BUILDING ENVELOPE

Strengthen insulation in attics, walls and windows to improve comfort and energy savings. Keeping the heat out during the summer and warm air during the winter makes a home more resilient to climate change.

Energy Performance Guide®

LANDINGS AT INSPIRADA | PLAN 2469

Estimated Monthly Energy Costs of a
Resale Home:

$243

Figure represents estimated monthly costs of a typical similarly sized home. Actual energy consumption and costs will vary.

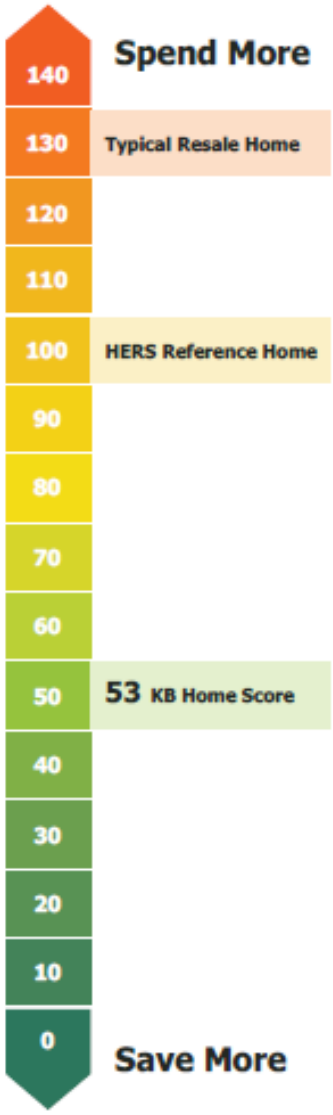
Estimated Monthly Energy Costs of
This KB Home:

$123

Figure represents estimated monthly costs of an ENERGY STAR-certified KB home. Actual energy consumption and costs will vary.

Estimated Annual Savings: $1,440*

HERS® INDEX
(HOME ENERGY RATING SYSTEM)

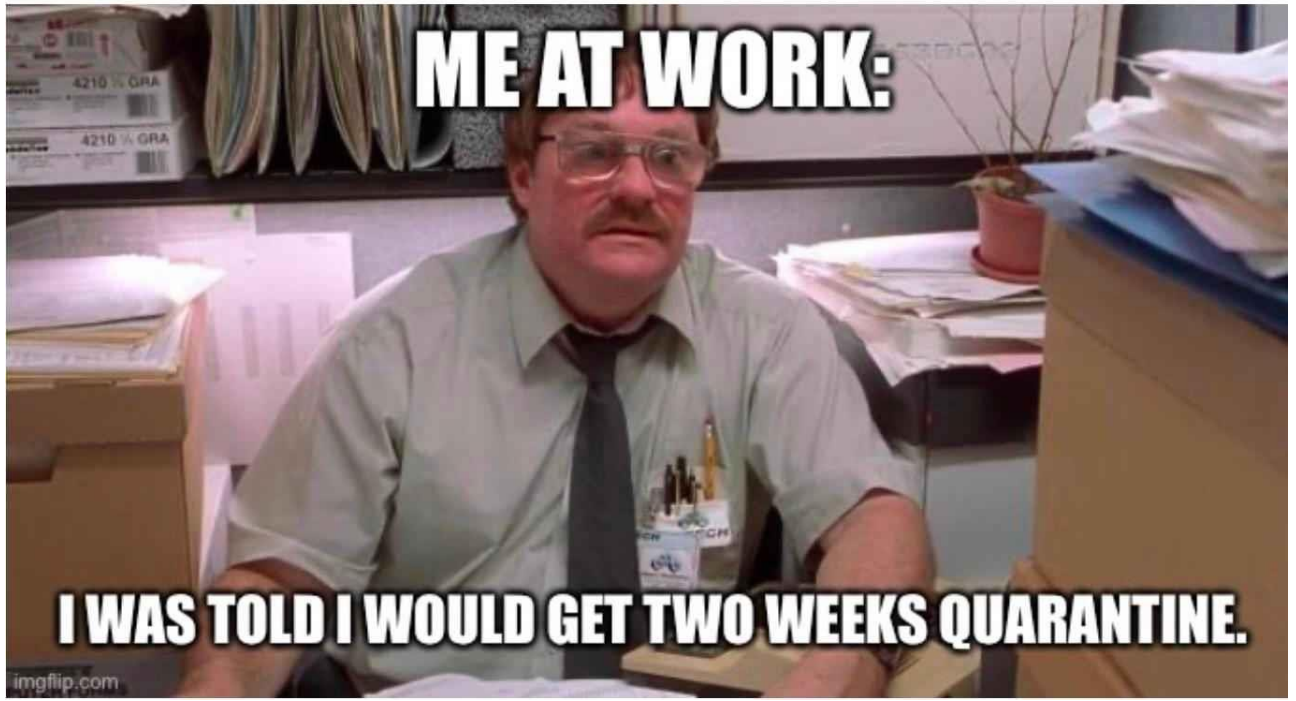


Recap/Questions?

SMART

SUSTAINABLE

SAVINGS



The Rheem Hybrid Wins:

- Highest Efficiency
- Quietest
- Zero Clearance
- Connectivity
- Leak Detection/Prevention
- Recovery
- 10 year Warranty

Kevin Clark
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