



Better Buildings Residential Network Peer Exchange Call Series:

*Heat Pump Water Heaters – What You Need to Know
Right Now*

February 27, 2020

Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers:
 - **Tony Bouza**, U.S. Department of Energy
 - **Tristan de Frondeville**, SkyCentrics
 - **Francois Lebrasseur**, A.O. Smith
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- Mar 12: The State of Gas Energy Efficiency Programs
- Mar 26: How Bad Installation Can Negate Good Equipment
- Apr 09: How Hot Is It? – Preparing for Summer Cooling Season

Peer Exchange Call summaries are posted on the Better Buildings [website](#) a few weeks after the call

For more information or to join, for no cost, email

bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join



Tony Bouza
U.S. Department of Energy

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

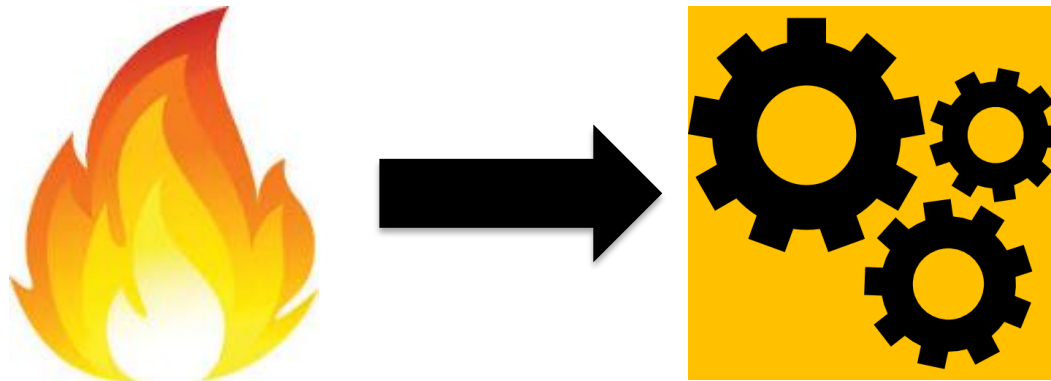
Intro to Heat Pump Water Heaters

Antonio M Bouza, BTO TM

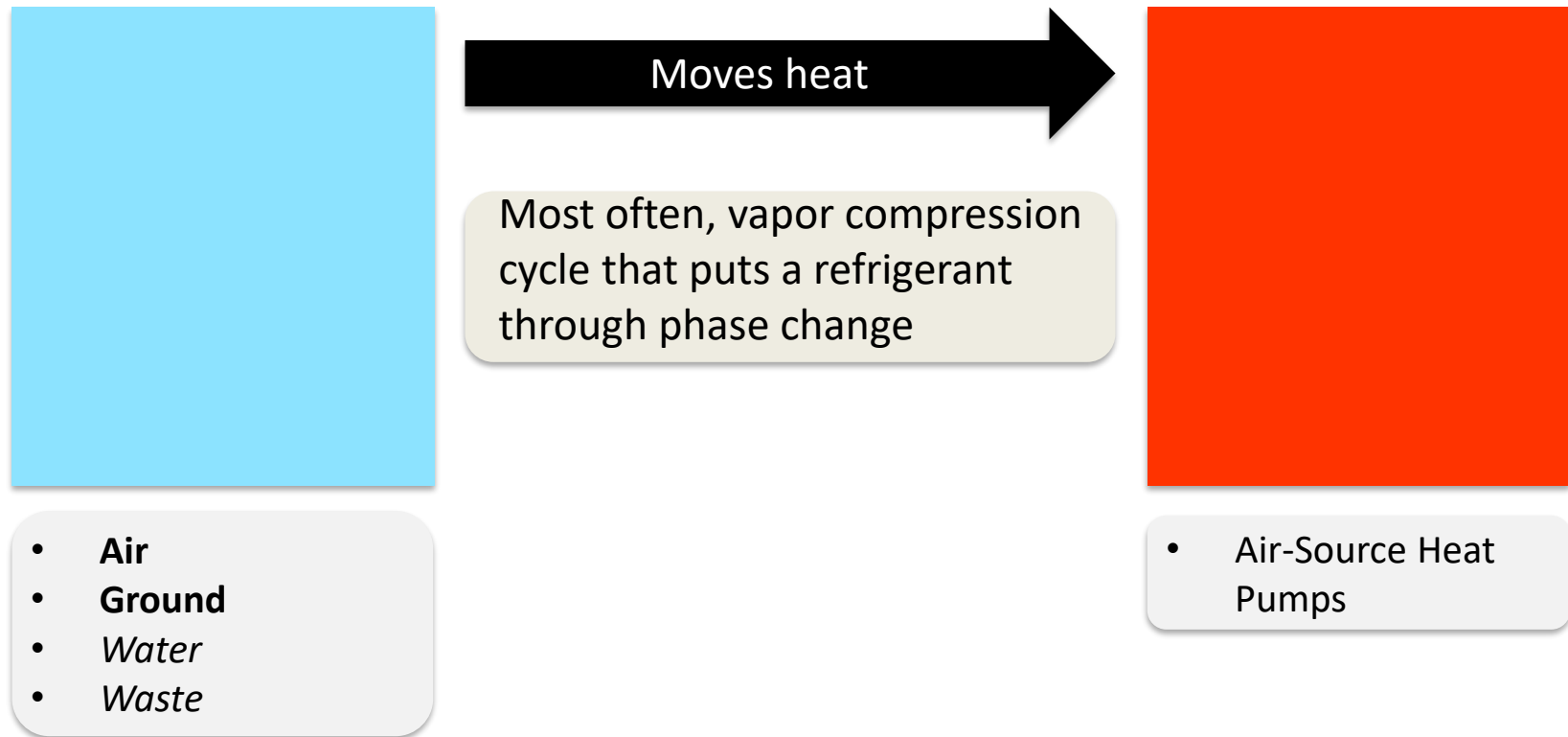


Heat Pumps Move Heat

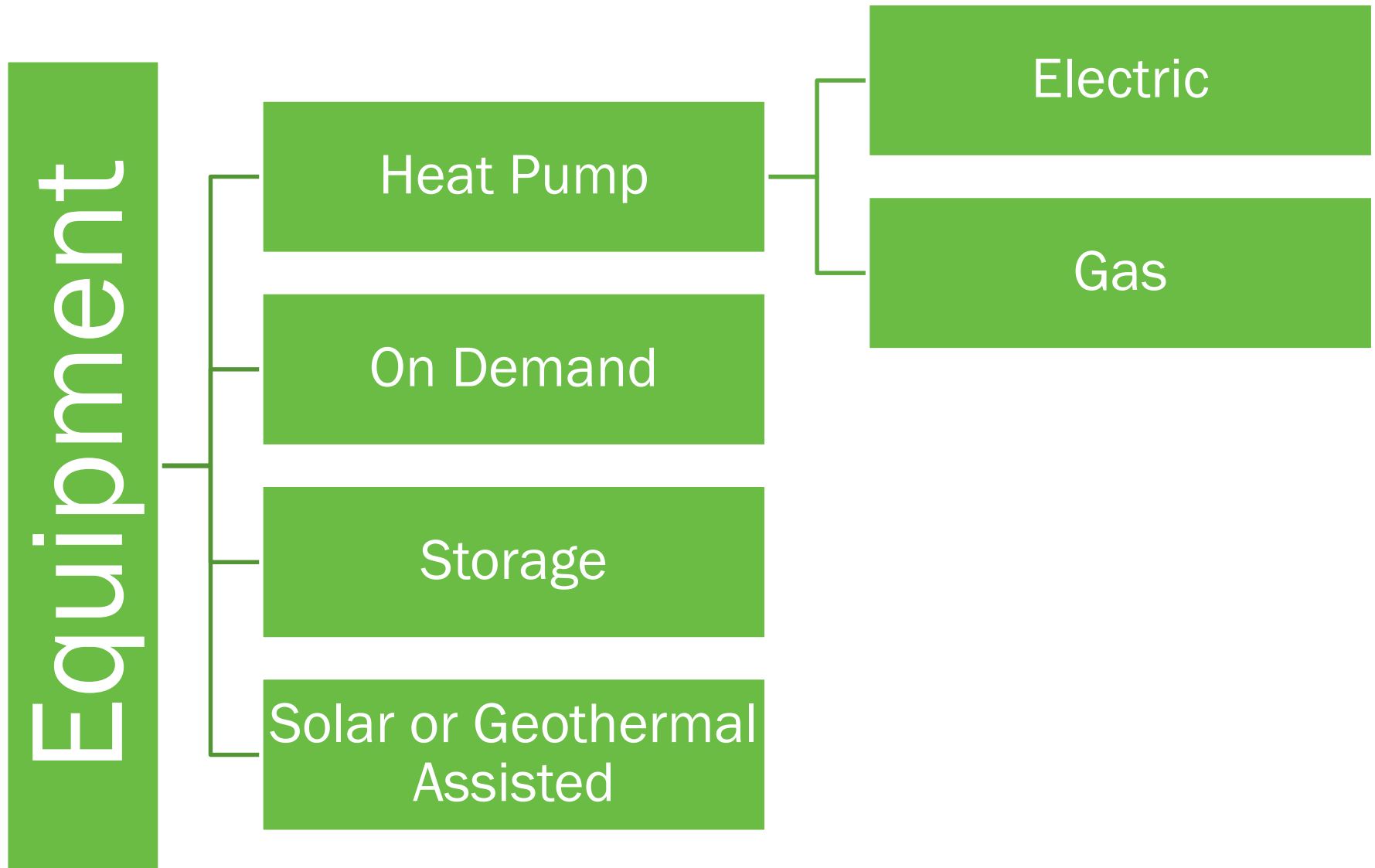
- Moves heat rather than converting it from a fuel like combustion
- Coefficient of performance (COP) of 2.0, means that 2 units of heat are moved for each unit of energy consumed



Heat Pumps Move Heat



Water Heaters



Electric Heat Pump Water Heaters

Two major types

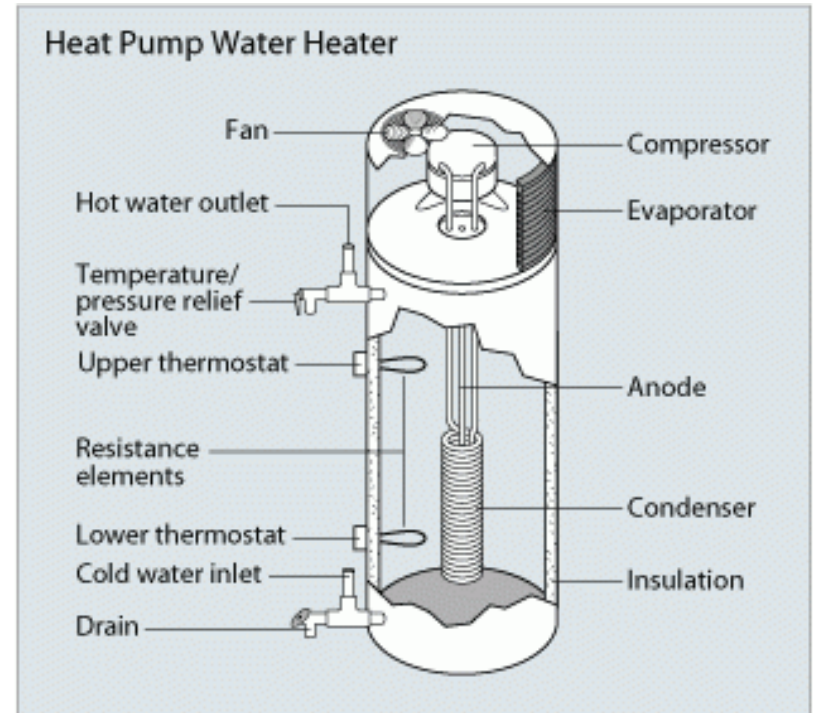
- Integrated design
- 2-piece system



Electric Heat Pump Water Heaters

Focus will be on integrated design type units

- Different location requirement, installation
- 2-piece system have hot water storage tank inside and heat pump unit outdoors (up to 50 feet away)



Electric Heat Pump Water Heaters

How They Work:

- Can be two to three times more energy efficient than conventional electric resistance water heaters
- To move the heat, heat pumps work like a refrigerator in reverse
 - While a refrigerator moves heat from inside a box to ambient air of the surrounding room, a heat pump water heater moves heat from ambient air to water in a storage tank
- Water heating typically accounts for 15 to 20 percent of electric energy use in homes with electric water heat
- New HPWHs offer the potential to reduce electricity for water heating by 50 percent or more

Electric Heat Pump Water Heaters

Installation and location

- Require installation in locations that remain in the 40°–90°F (4.4°–32.2°C) range year-round and provide at least 1,000 cubic feet (28.3 cubic meters) of air space around the water heater
- Cool exhaust air can be exhausted to the room or outdoors. Install them in a space with excess heat, such as a furnace room.
- Heat pump water heaters will not operate efficiently in a cold space. They tend to cool the spaces they are in.
- Air-source heat pump system works more efficiently in a warm climate but R&D is working on these challenges

Electric Heat Pump Water Heaters

Installation and location

- Require installation in locations that remain in the 40°–90°F (4.4°–32.2°C) range year-round and provide at least 1,000 cubic feet (28.3 cubic meters) of air space around the water heater
- Cool exhaust air can be exhausted to the room or outdoors. Install them in a space with excess heat, such as a furnace room. Heat extracted by the HPWH from a conditioned space in the heating season may require more heat from the existing space heating system.
- Heat pump water heaters will not operate efficiently in a cold space. They tend to cool the spaces they are in.
- Air-source heat pump system works more efficiently in a warm climate but R&D is working on these challenges

Electric Heat Pump Water Heaters

Installation and location

- Heat pump water heaters are a bit larger than standard electric water heaters. The size varies depending on manufacturer and capacity (such as 50-gallon or 80-gallon tanks).
- In addition to standard water heaters connections, heat pump water heaters also have a drain to remove condensation generated by the unit.



Electric Heat Pump Water Heaters

Heat pump water heaters are more interactive

- Most heat pump water heater models feature a control panel that allow homeowners to select water temperature and operation mode
- Reference your manufacturer-provided manual for instructions
- Future, smart-grid-enabled heat pump water heaters
 - HVAC, Water Heating, Appliances and Refrigeration GEB Technical Report: <https://www1.eere.energy.gov/buildings/pdfs/75473.pdf>
 - Grid-interactive HPWH are also available. Typical functionality is to preheat water (above safe output levels) and then uses a controlled-mixing valve to deliver water of the proper temperature. In addition, there are multiple retrofit controls packages available for existing electric resistance water heaters that enable utility control.

2020 Hot Water Forum: March 23 – 25, 2020

Pre-Conference Opportunities

Participate in one of two R&D discussions presented by The Building Technologies Office (BTO) of the US Department of Energy

Monday, March 23 – 9:00 am-10:30 am or 4:00 pm-5:30 pm

The Building Technologies Office (BTO) of the US Department of Energy is exploring ways to identify and support next-generation water heating R&D. To support this endeavor, they have asked for our collaboration in inviting attendees of the Hot Water Forum to attend a R&D discussion to exchange ideas on today's greatest R&D gaps, needs, and opportunities for water heating.

The US DOE's effort focuses on R&D support for next generation water heating technologies that provide cost effective energy efficiency and grid flexibility value. By engaging key stakeholders at these discussions, BTO hopes to gather input regarding three key issues including: Next-generation technology development priorities, challenges and barriers to bringing next-generation technologies to market, and major gaps in academic, government, and commercial R&D efforts.

If you would like to take part in this discussion, please RSVP by March 13. Additional information will be provided after the deadline. If you have questions, contact Michael.Pan@navigant.com, (781) 270-8355.

<https://www.aceee.org/2020-hot-water-forum>

Thank You

My contact info:

Antonio M. Bouza

Technology Manager | General Engineer

U.S. Department of Energy | Building Technologies Office | EE-5B

antonio.bouza@ee.doe.gov | 202.586.4563

<http://energy.gov/eere/buildings/hvac-water-heating-and-appliances>



Tristan de Frondeville
SkyCentrics



SkyCentrics

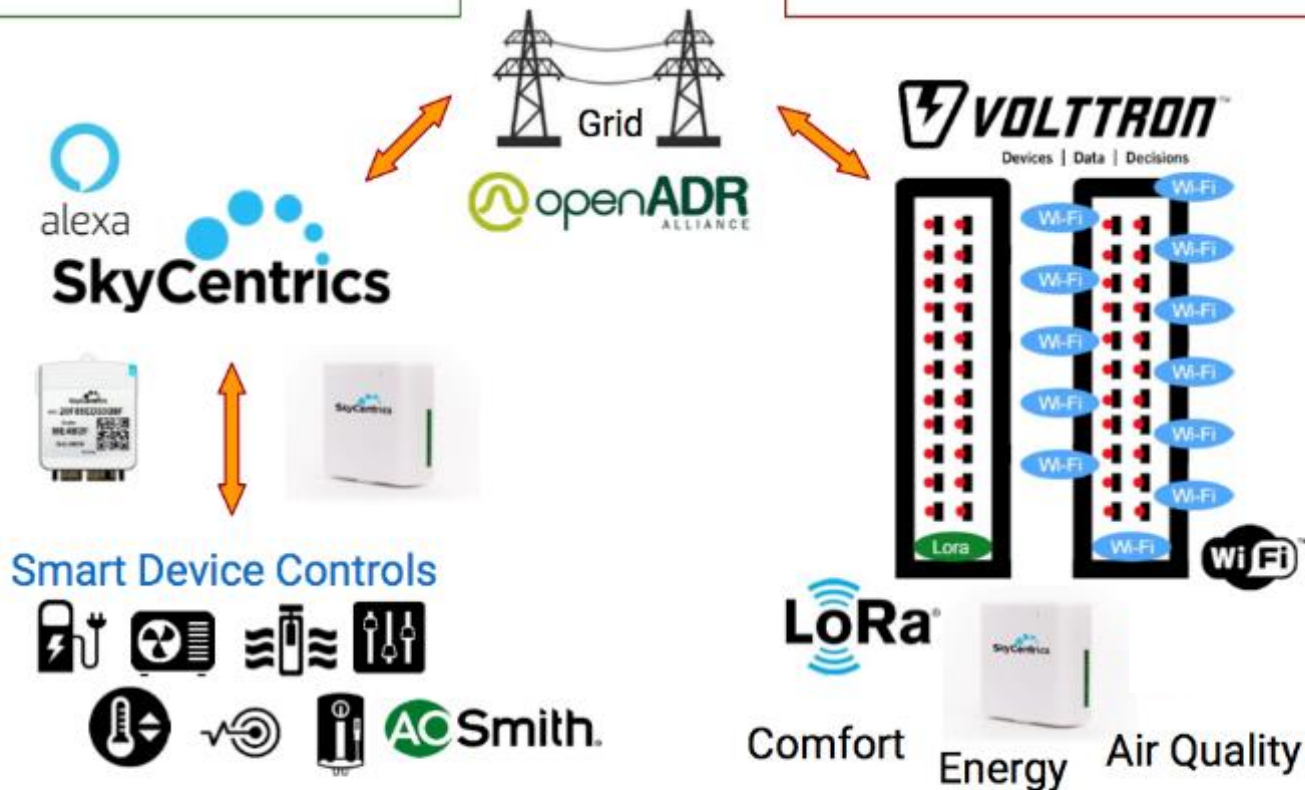
Heat Pump Water Heaters and Open Standards
February 27, 2020

About SkyCentrics & Open Standards



IoT Connected Devices For Utilities

IoT Sensors and Controls for Buildings



Utility Channel Sales

Direct and Partner Sales

Why we need grid connected water heaters

- Standard solution: low-cost peaking plant at \$800/kW.
- 300 MW plant to meet peak demand 1st cost: ~\$240 million
- Tough to justify resource that runs only a few hours per year

Choices:

1. Build plant,
2. Short term solution in wholesale market, or
3. Meet peak with demand response

Bonneville Power Pilot – 600 water heaters

Results: 301 MW by 2039



Market Transformation

- 5 years to ramp up
- 15 years to full replacement
- Then 15 year of operation

kW reduction

Winter AM: .33 to .47

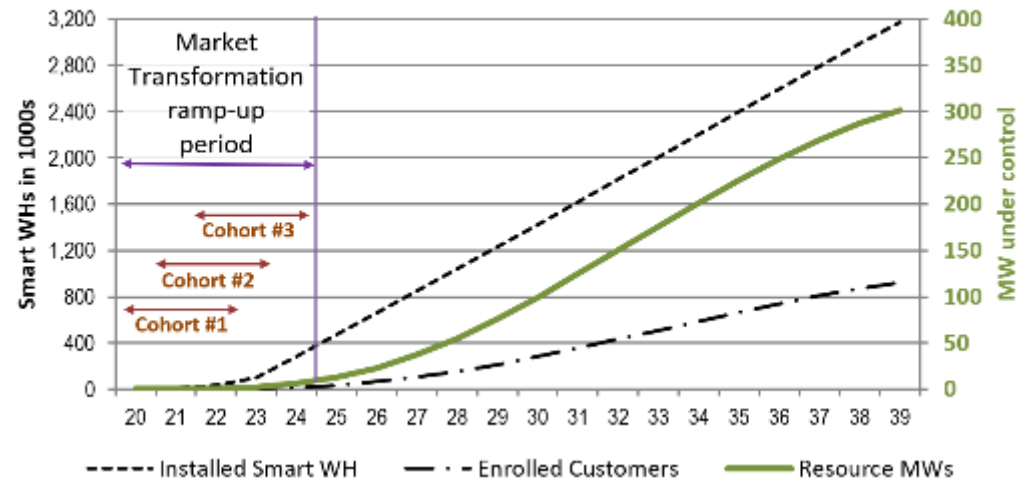
Winter PM: .27 to .44

Summer PM: .26 to .30

Economics (at 26.5% adoption)

- Regional benefit: \$230 million
- Benefit/cost ratio: 2.6

Aggregated Benefits of Market Transformation

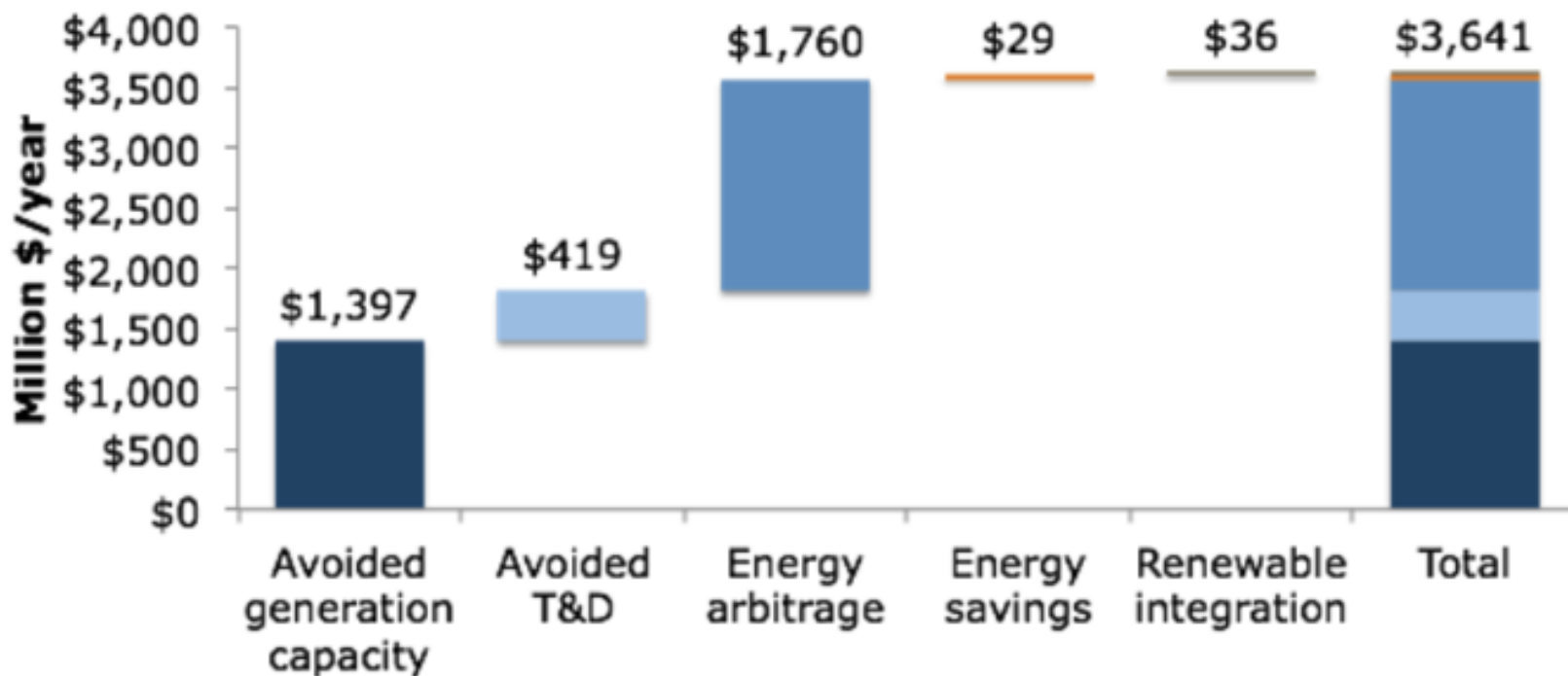


Benefits not quantified:

- Daily energy shift
- CO₂ reduction
- Ancillary services
- Customer perception

Full report at: www.bpa.gov/goto/smartwaterheaterreport

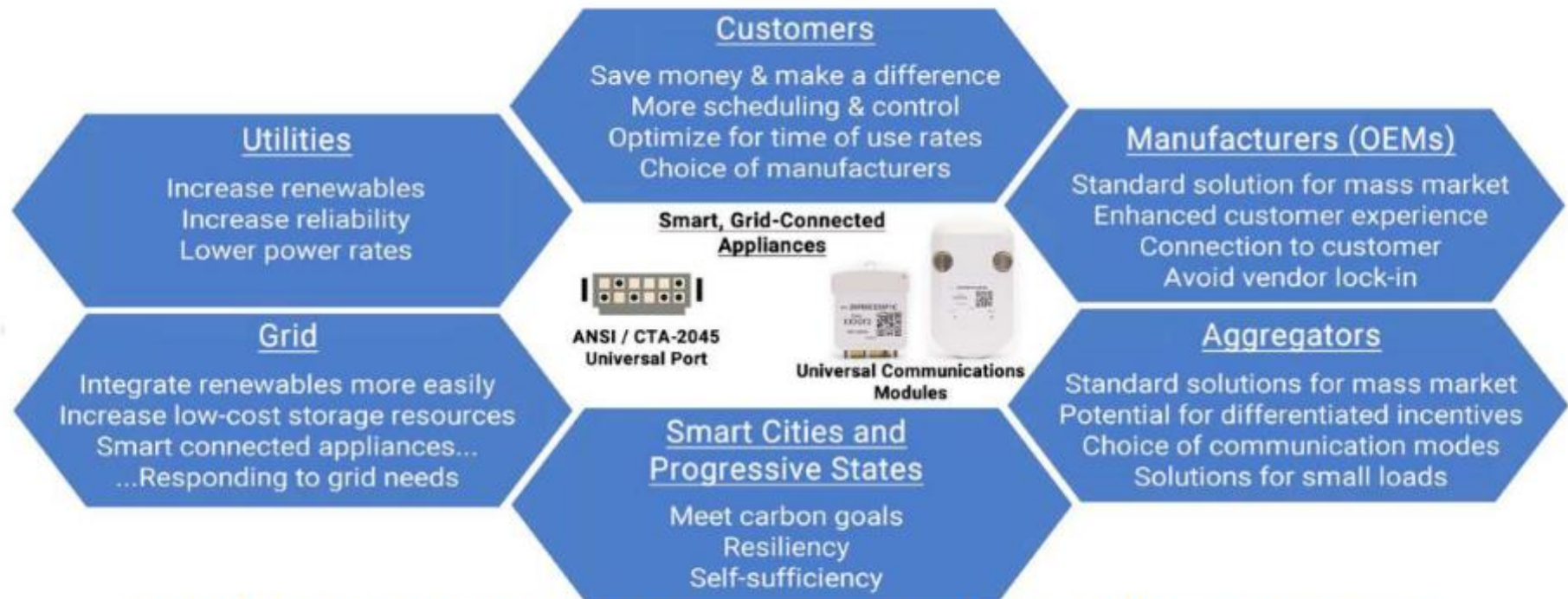
The value of grid connected water heaters



\$3.6 billion/year in value from a grid-interactive fleet of water heaters. Source: RMI.

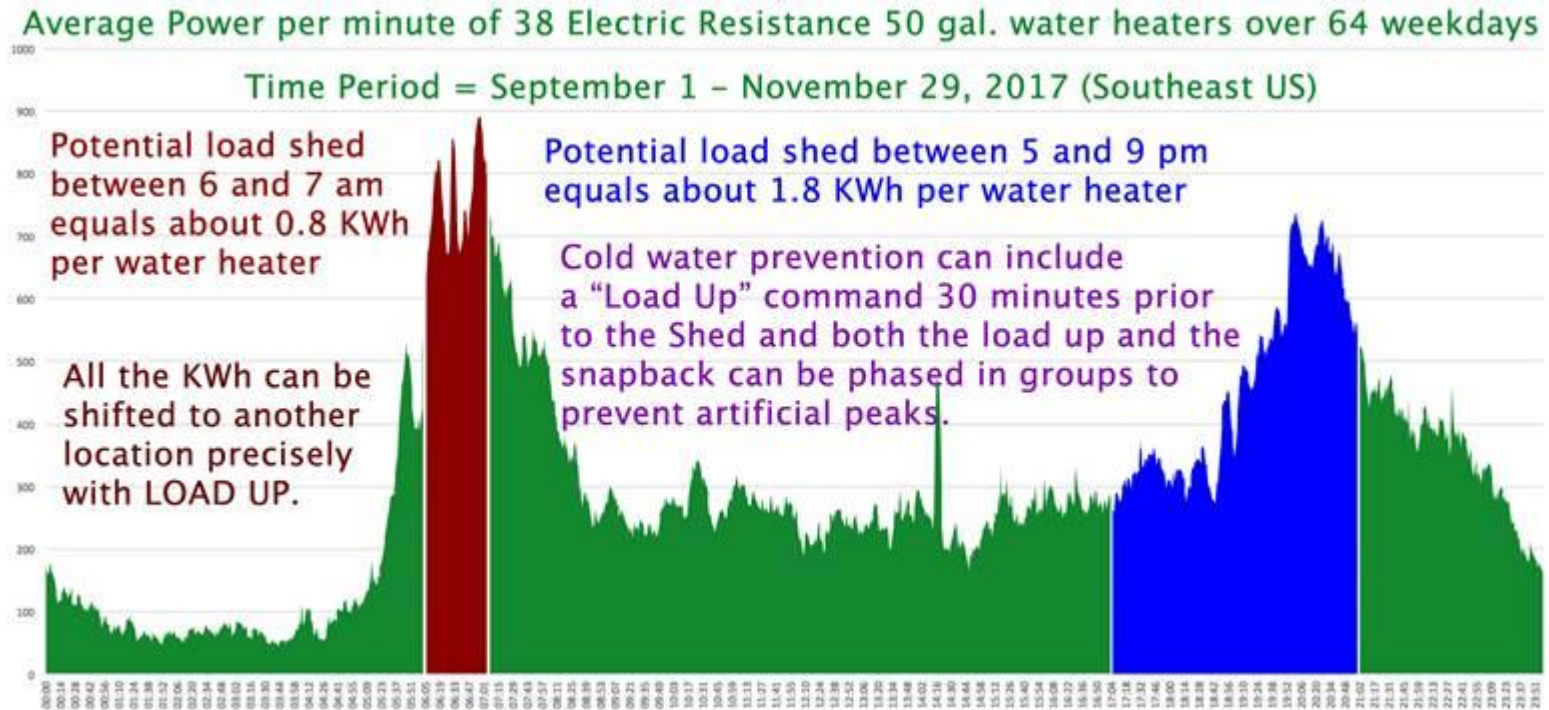
Based on 50M US water heaters = \$72/year/water heater, but up to \$200

The value to the stakeholders



Market Map: Market actors and their specific needs, value propositions, and use cases

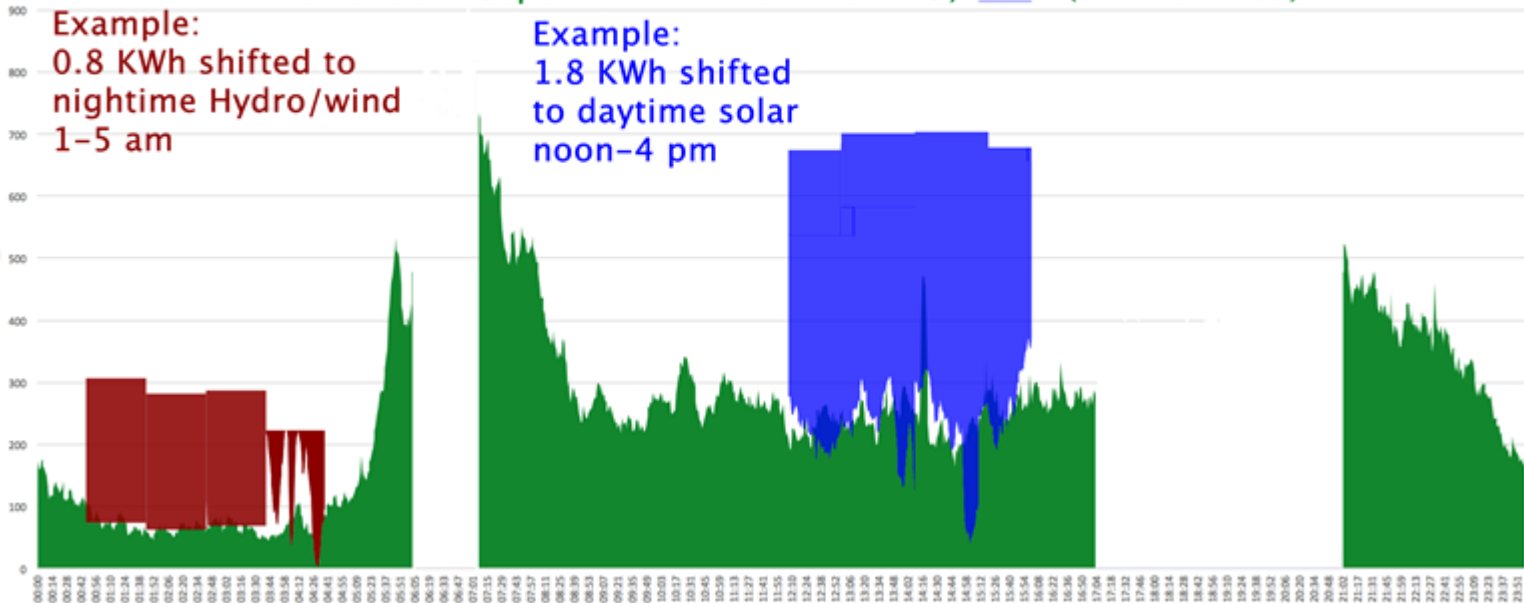
Average water heater behavior



Shed, Shift, Shake & Shimmy

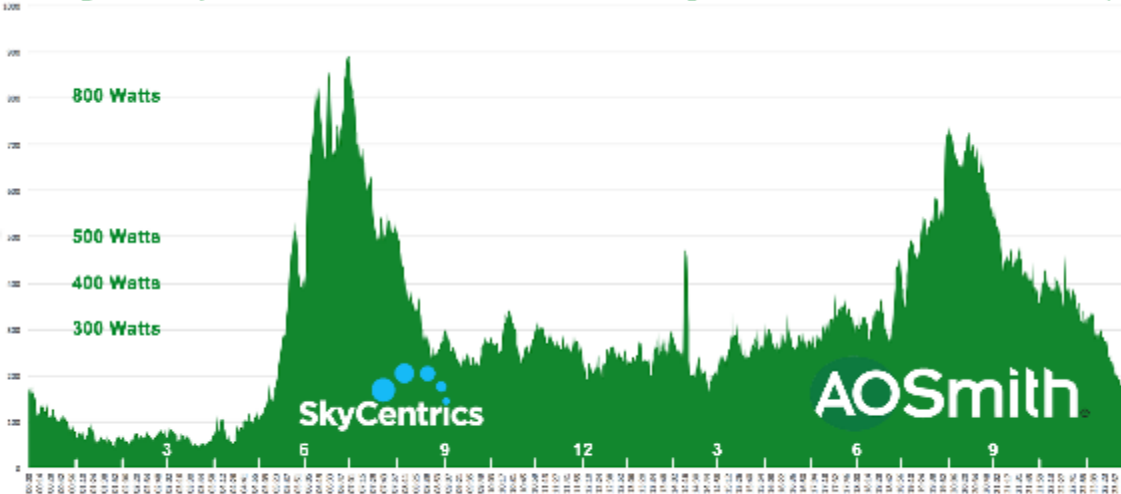
Average Power per minute of 38 Electric Resistance 50 gal. water heaters over 64 weekdays

Time Period = September 1 – November 29, 2017 (Southeast US)

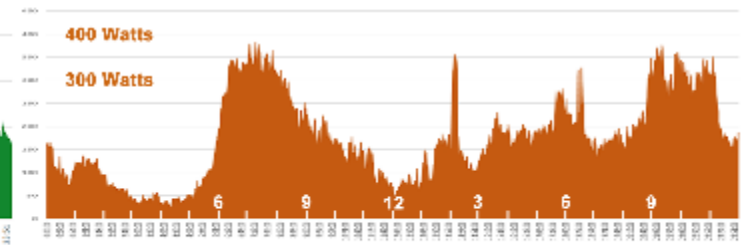


Electric Resistance v Heat Pump

Average Power per minute of 38 Electric Resistance 50 gal. water heaters over 64 weekdays



Average Power per minute of 10 Heat Pump 50 gal. water heaters over 24 weekdays
All in South of USA, thus warmer inlet temperatures



Time Period = September 1 – November 29, 2017

CTA-2045

- the USB port for appliances



CTA-2045 Standard

Consumer
Technology
Association™

EPRI

ELECTRIC POWER
RESEARCH INSTITUTE



AC powered
First to UL 916
June 2016


SkyCentrics



DC powered

 **openADR™**

 **USNAP**
ALLIANCE

SkyCentrics CTA module on AO Smith

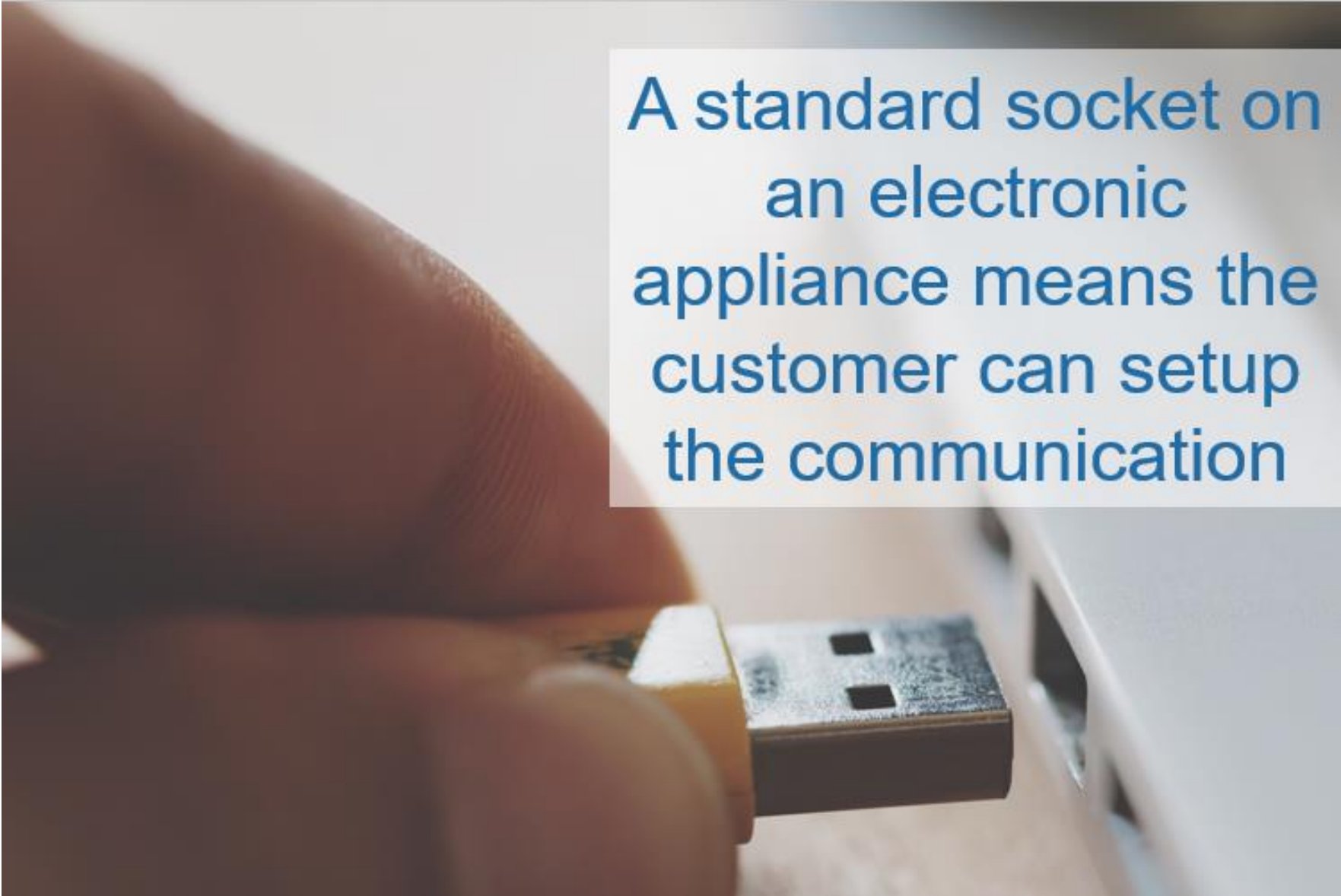


AC
Wi-Fi
Module

Do You Remember?



The incredible value – low cost SkyCentrics



A standard socket on
an electronic
appliance means the
customer can setup
the communication

10-20 year appliance life



We need flexible, modular communications to future proof the connectivity to the appliance.



or NOT!



OpenADR & CTA-2045 – a team



OpenADR & CTA-2045 work well together

The more expensive OpenADR can be placed in the cloud, a gateway or in the CTA-2045 module.
Not recommended in the appliance.

Customers

Want to monitor and schedule their devices through easy to use apps
Choice of Manufacturers

Utilities

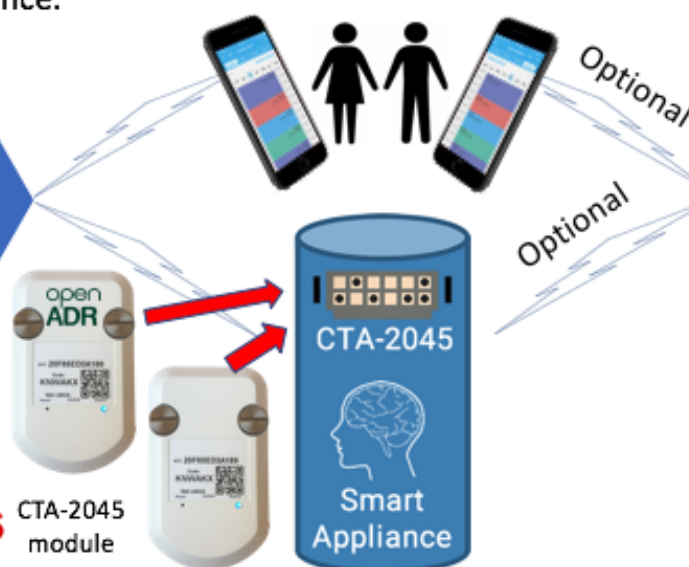
Need options for communication paths
May need guaranteed communication
May need OpenADR...or not.

OEM

Can put minimum smarts for utilities only,
OR
Maximum smarts for additional features
through an OEM cloud connection

\$\$\$ CTA-2045 module with OpenADR*

\$ CTA-2045 module

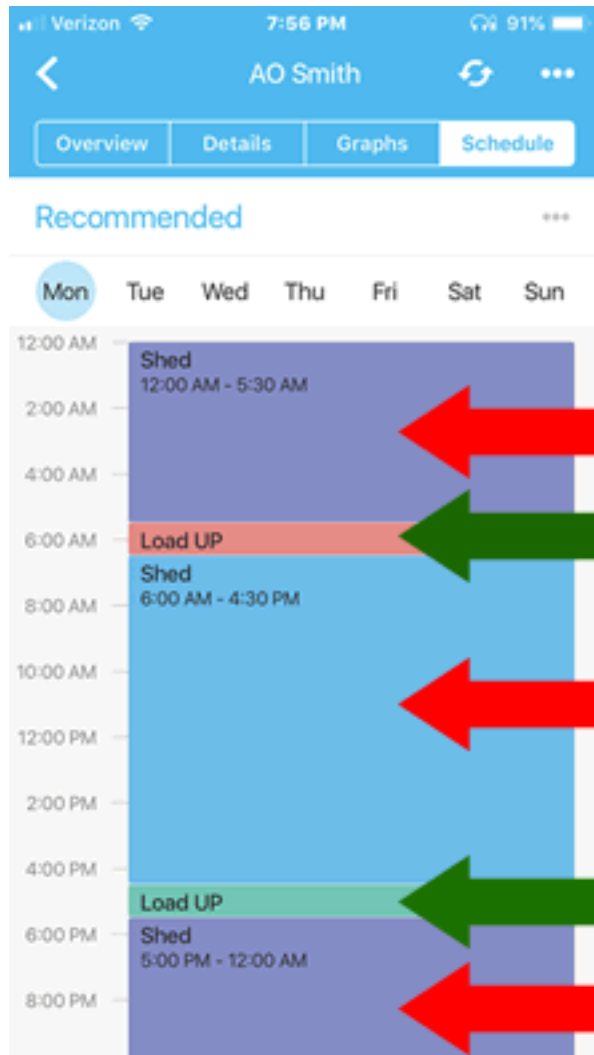


*OpenADR is expensive to code, certify, and has a yearly SSL certificate cost! Put it in the module if necessary, NOT IN THE APPLIANCE

Status of CTA-2045 regulations

State	Regulation	Date of Implementation	Details
WA	SB 5115 HB 1444	January 1, 2021	All water heaters sold in WA state must have a CTA-2045-A port or equivalent.
Energy Star National	Connected Appliances	Pool Pumps (done) Water Heaters (soon)	All Energy Star connected appliances must have OADR or CTA-2045-A or an equivalent open standard at the appliance or in the cloud.
National	AHRI 1380	2019	DR-ready Variable Capacity HVAC systems rated to 65,000 Btu/hr or less shall have CTA-2045-A or <u>OpenADR 2.0</u> or both.
CA	Title 24	January 1, 2020	Requires OADR to water heaters either in the cloud or at the device on new construction or large retrofit - The California Energy Commission is reviewing adding CTA-2045-A in next code cycle.
CA	Title 24 JA13	January 1, 2020	Requires water heater 'system' to have local scheduling capabilities, and a 24/7 schedule for Time of Use, and remote capability built in or with a simple upgrade. At least two of the three main water heater OEM are doing this through solutions that include CTA-2045-A.

Everyday savings schedule



12 - 5:30 AM - Shed

Save energy at night when you don't need hot water.

5:30 - 6:00 AM - Load Up

Fully heats your tank for morning showers.

6:00 AM - 4:30 PM - Shed

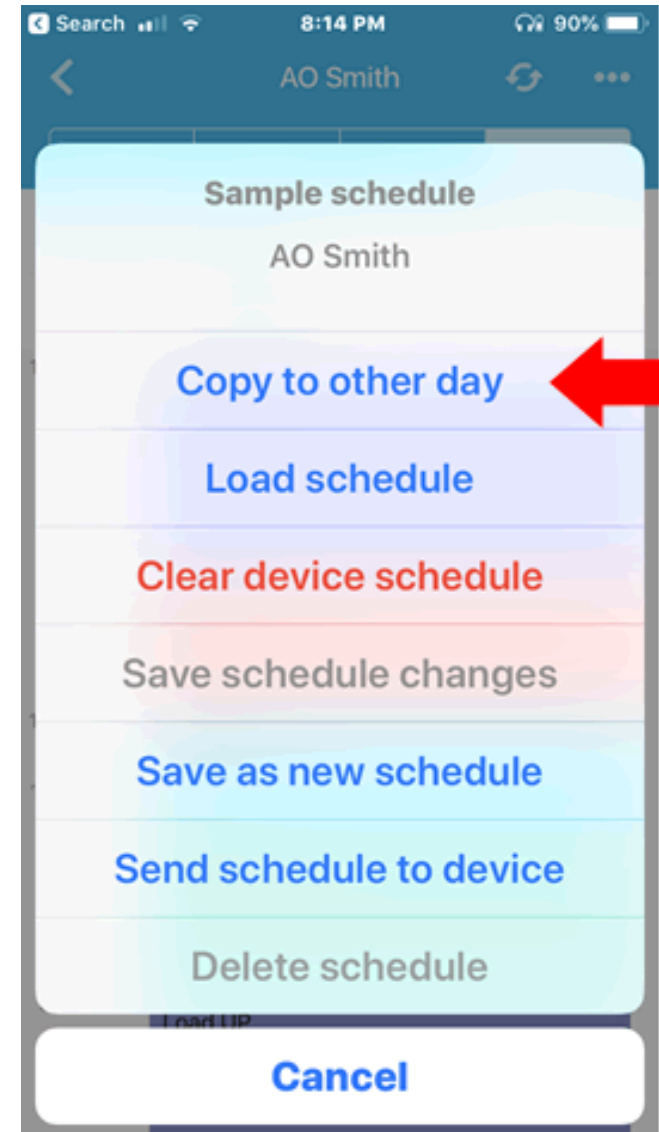
Save energy during the day while you are not home.

4:30 - 5:00 PM - Load Up

Fully heats your tank to get ready for the evening.

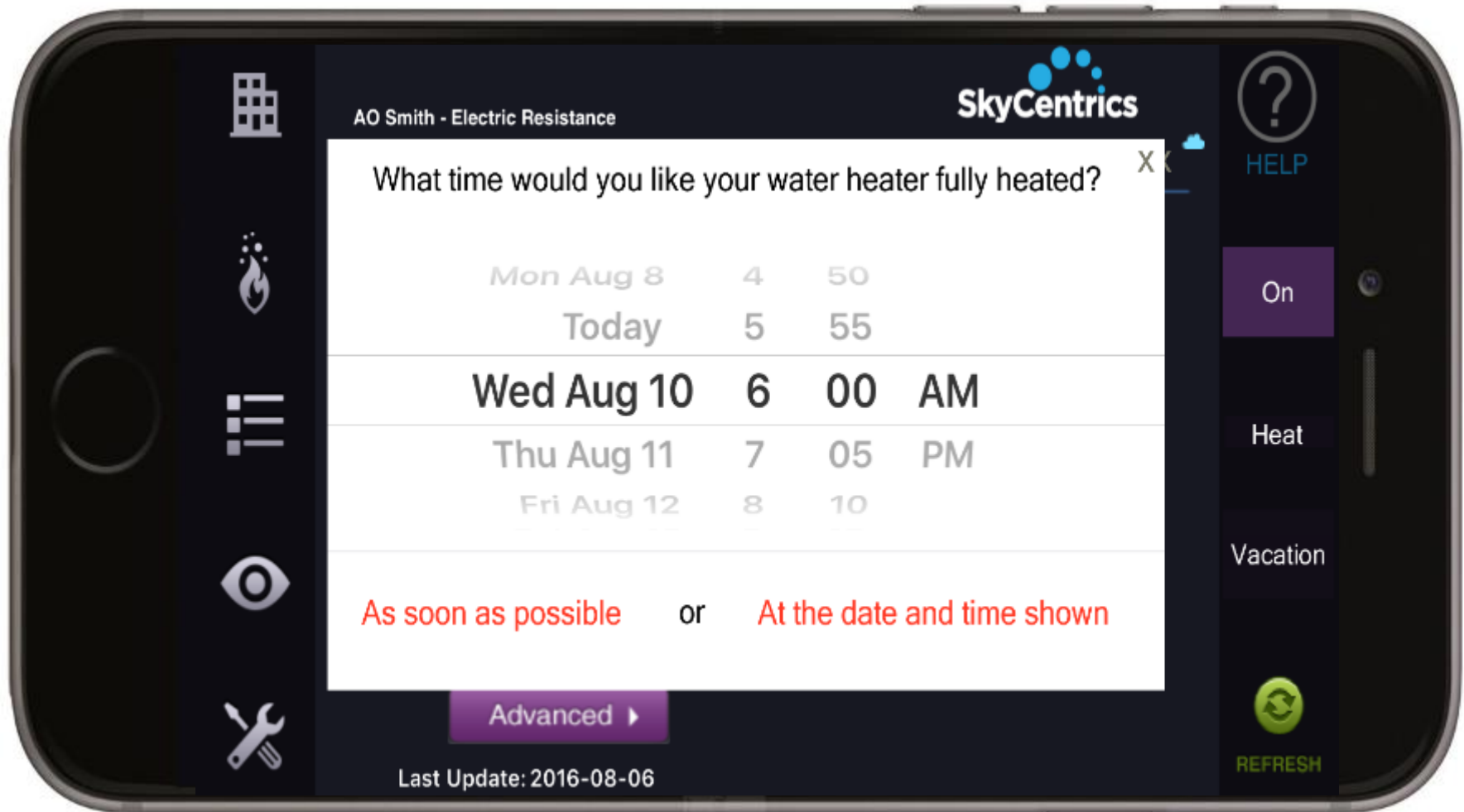
5:00 PM - 12 - Shed

Save energy at night when you don't need hot water.



Cool feature ;)

Comfort on demand or on schedule.



Cold water prevention



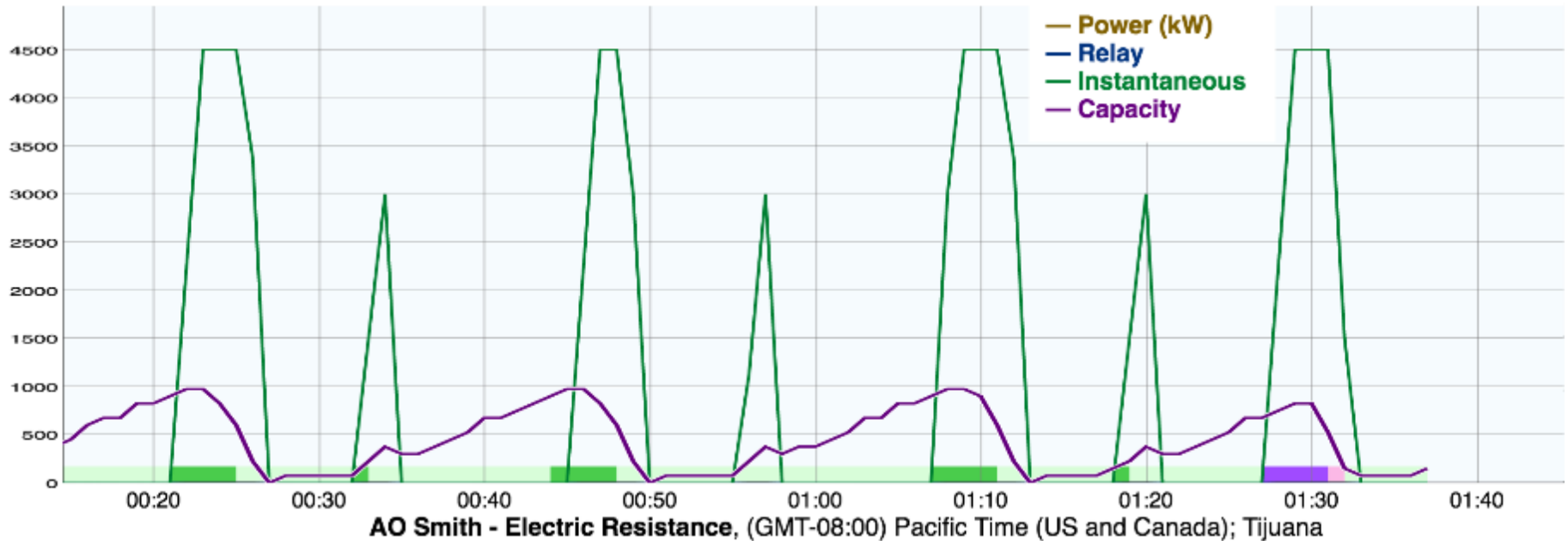
ER v HP data

- Average (1 minute) Water Heater Demand (when running):
 - January: Resistive 4.45 kW vs. HPWH 0.97 kW
 - March: Resistive 4.25 kW vs. HPWH 0.93 kW
 - August: Resistive 4.15 kW vs. HPWH 0.69 kW
- Run Time (Average % of time unit is heating water):
 - January: Resistive 4% vs. HPWH 25%
 - March: Resistive 3% vs. HPWH 19%
 - August: Resistive 2.5% vs. HPWH 7.0%

Conclusions – Grid Value

- Both Resistive and HPWH provide valuable DR opportunities
- HPWH have lower kW, but are more likely to be running
- With CTA-2045 control, can load up (to an extent)
 - HPWH can efficiently preheat water before an event or peak
 - Resistive WH can also preheat water using electric element
- HPWH have more electric heating element use in Winter
- HPWH have more heating element use at high demand (mornings)
- Can advocate larger tanks for HPWH to take advantage of High HP COP

Reports both Power usage AND storage capacity



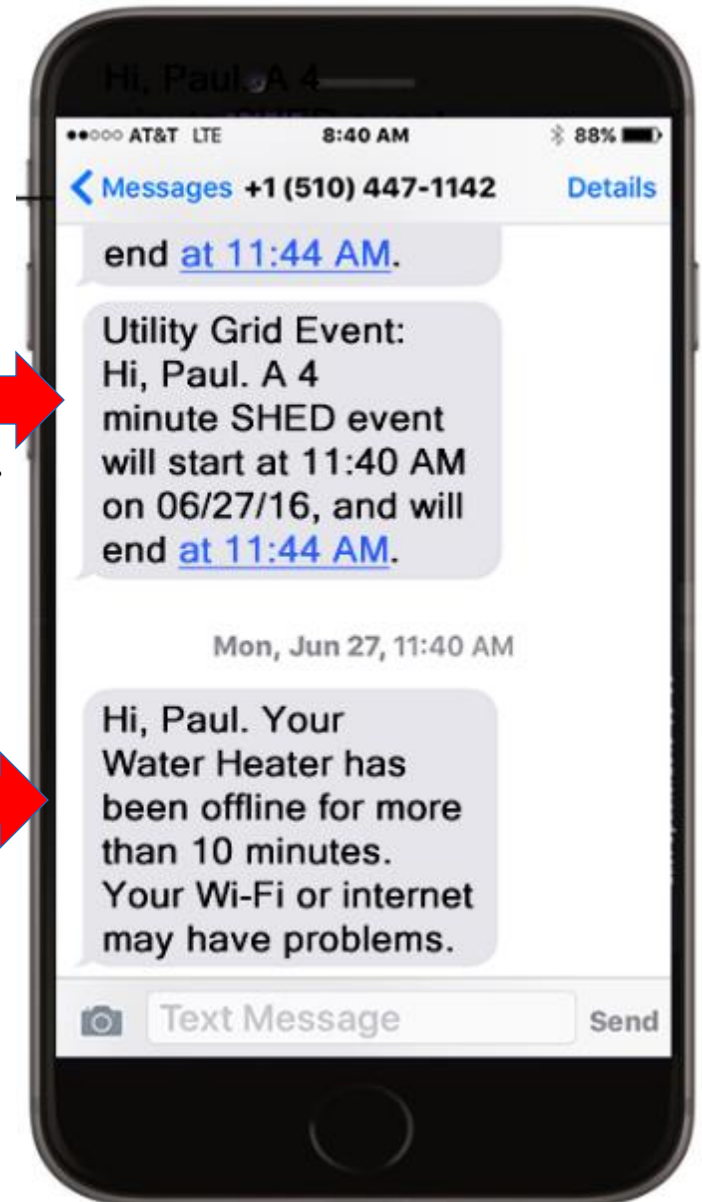
Responds to “Load Up”

Running Heightened

Customer Engagement

We deliver value to the building owner with engaging apps, or valued communication that motivate him to keep his devices online.

When that does not work, we can also deliver email and text alerts.





UTILITIES can group
customer devices
by substation

Utility ABC  

Devices Tree 



- ☒ Remote Office
 -  Computer Room plug
 -  Kitchen plug
 -  Fridge plug
- ☒ Customer Devices
 - ☒ SubStation 1
 - ☒ SubStation 2
 - ☒ Substation3
 -  Water Switch Kitchen
 -  Emerson Upstairs
 -  Living Room
 -  LED Lights
 -  Fan
 -  EV Charger Office Garage
 -  Home Water heater switch
 -  EV Charger Garage
 -  Fridge Sensors

Calendar Interface for DR events



Peter Power

Utility ABC

Devices Tree

- Remote Office
- Customer Devices
 - SubStation 1
 - Grocery
 - Office- Conf. Room
 - Office - Kitchen
 - Office - Lobby
 - Lunara 2X2
 - SubStation 2
 - Hotel
 - Substation 3
 - Substation 4
 - Small Sign LED
 - substation 6
 - PS-0D65
 - pool
 - USNAP 3D24
 - Office WH - old switch
 - Thermostat
 - PS-0D69
 - PS-EFC5

Save Tree

Saved Graphs

Saved Trees

Devices Properties DASH DR Admin DR Scheduler

January 2017

today < > month week day

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9 7a Event 12p Event	10 7a Event 12p Event	11 7a Event 12p Event	12 7a Event 12p Event	13 7a Event 12p Event	14
15	16 10a Event 5p Event	17 10a Event 5p Event	18 10a Event 5p Event	19 10a Event 5p Event	20 10a Event 5p Event	21
22	23 8a Group 1 9a Event	24 7a Event 12p Event	25 10a Event 5p Event	26 10a Event 1p Event	27 10a Group 2 11:32a Group A 12p Group 3 1p Event	28 1p Event
29	30	31 10:30a Event	1	2	3	4
5	6	7	8	9	10	11

Schedule 1,000 devices with one click

Devices ▾

Properties

DR

TCO

Front Lobby #96 

Schedules: Summer Normal ▾

Load Sample Schedule

Send Schedule to Many Devices

Monday

Sync Heat and Cool Times: ☒

Time	Heat°	Time	Cool°
6:30am	68	6:30am	80
8:30am	62	8:30am	88
4:00am	62	4:00am	80
10:0...	60	10:0...	88

Copy to other days

Tuesday

Sync Heat and Cool Times: ☒

Time	Heat°	Time	Cool°
6:30am	68	6:30am	80
8:30am	62	8:30am	88
4:00am	62	4:00am	80
10:0...	60	10:0...	88

Copy to other days

Wednesday

Sync Heat and Cool Times: ☒

Time	Heat°	Time	Cool°
6:30am	68	6:30am	80
8:30am	62	8:30am	88
4:00am	62	4:00am	80
10:0...	60	10:0...	88

Copy to other days

Load and Capacity Real Time Data



emp

Mode

Fan

Set Point #1

Offset

Override

Commodity

Op. State

Power (W)

Utility

Last Heartbeat

2 FHeatHigh65 F0 FNoShow InfoIdle Normal89Show Info2016/02/22 14:41

Temp

Set Point #1

Set Point #2

Offset

Override

Commodity

C70 F65 FN/A4 FNoShow InfoC72 F67 FN/A2 FNoShow InfoC-----N/A-----NoShow Info

Override

Commodity

Op. State

Power (W)

Utility

NoShow InfoRunning Normal7680Show Info

code: 0

name: Electricity Consumed

units: W & W-hr

estimated: 1

instantaneous: 0

cumulative: 6450

code: 6

name: Total Energy Storage Capacity

units: W & W-hr

estimated: 1

instantaneous: 0

cumulative: 3630

code: 7

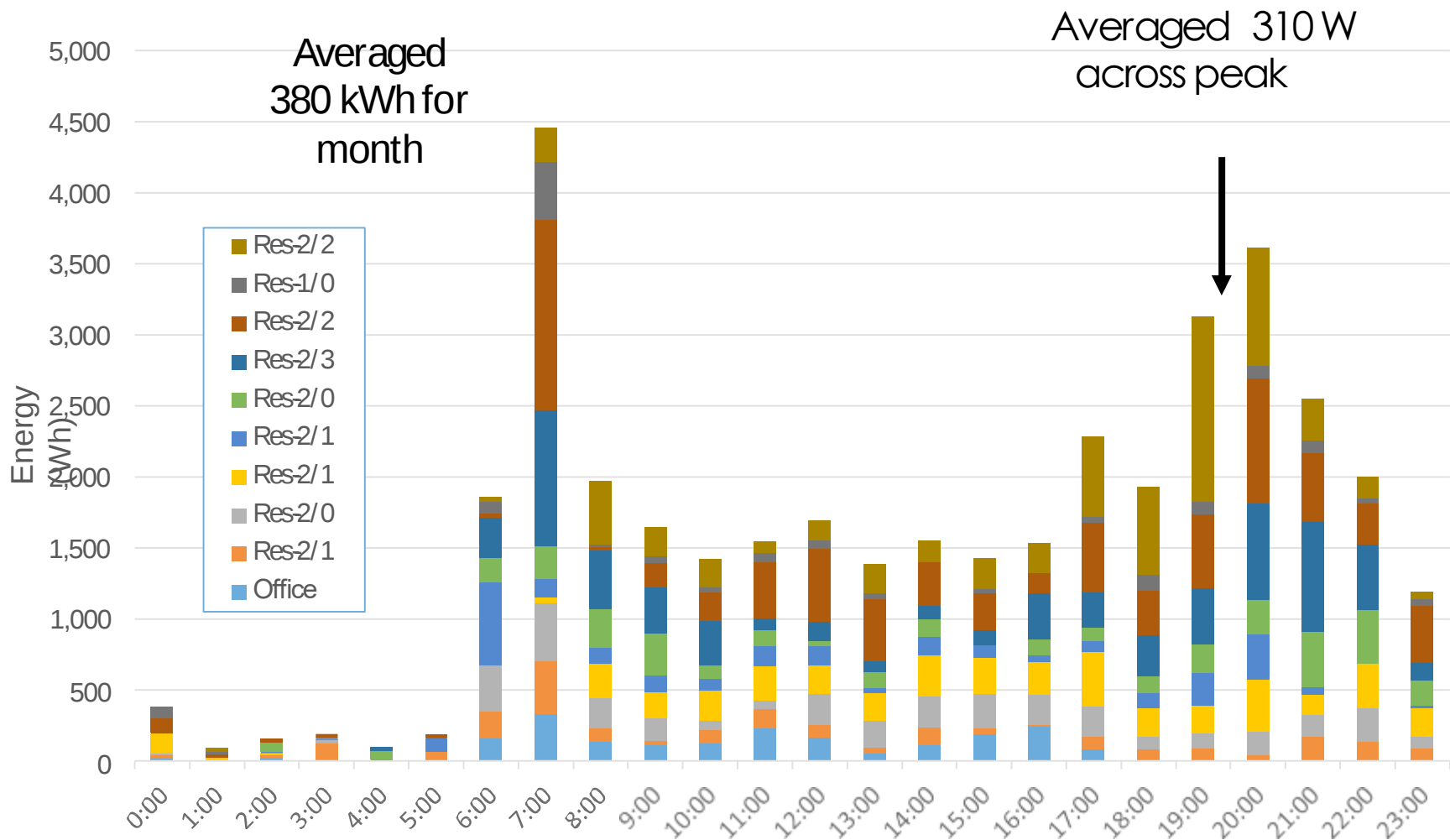
code: 0
name: Electricity Consumed
units: W & W-hr
estimated: 1
instantaneous: 0
cumulative: 6450

Instantaneous Load

code: 6
name: Total Energy Storage Capacity
units: W & W-hr
estimated: 1
instantaneous: 0
cumulative: 3630

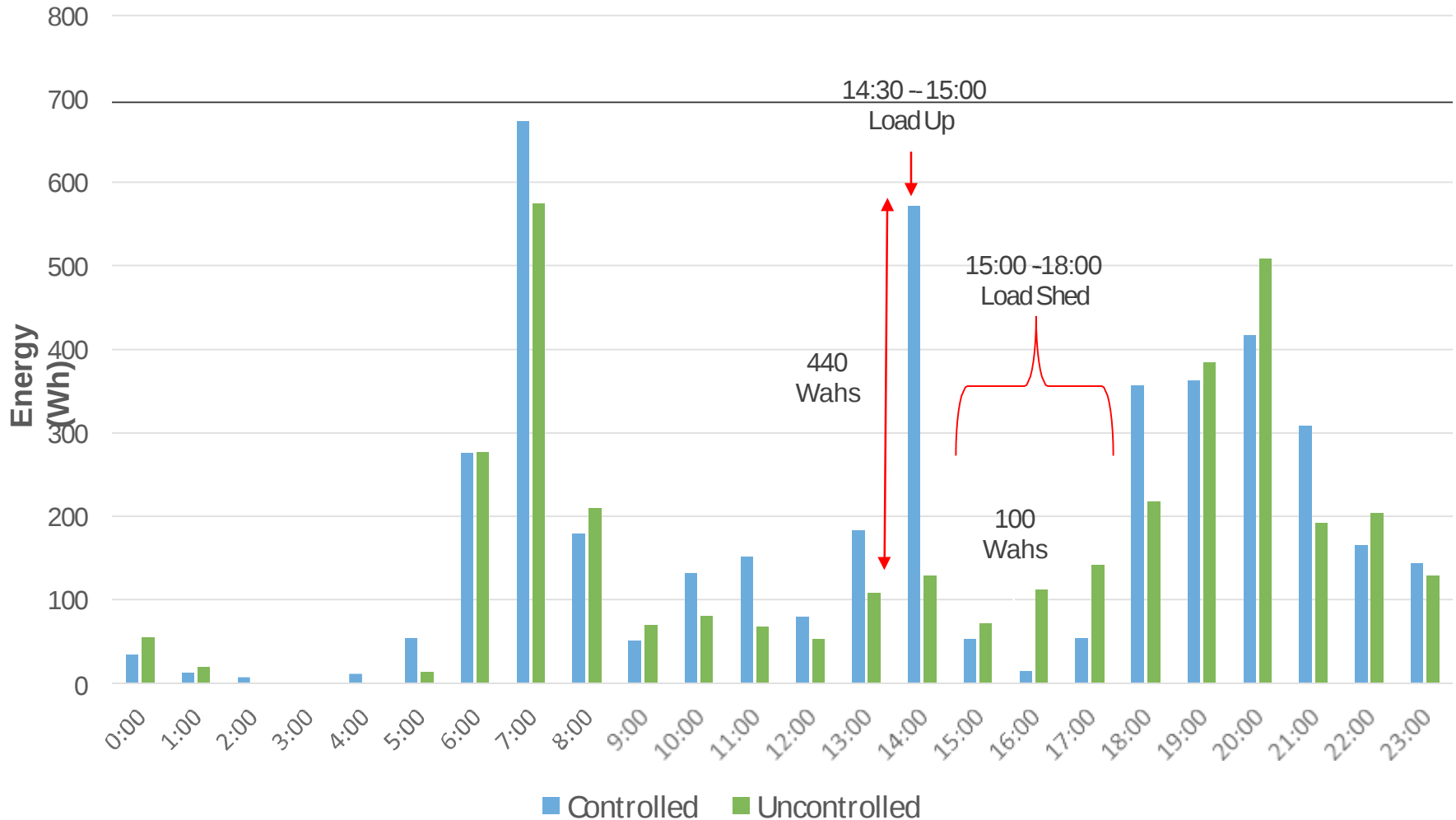
code: 7
name: Present Energy Storage Capacity
units: W & W-hr
estimated: 1
instantaneous: 0
cumulative: 450

Instantaneous Capacity



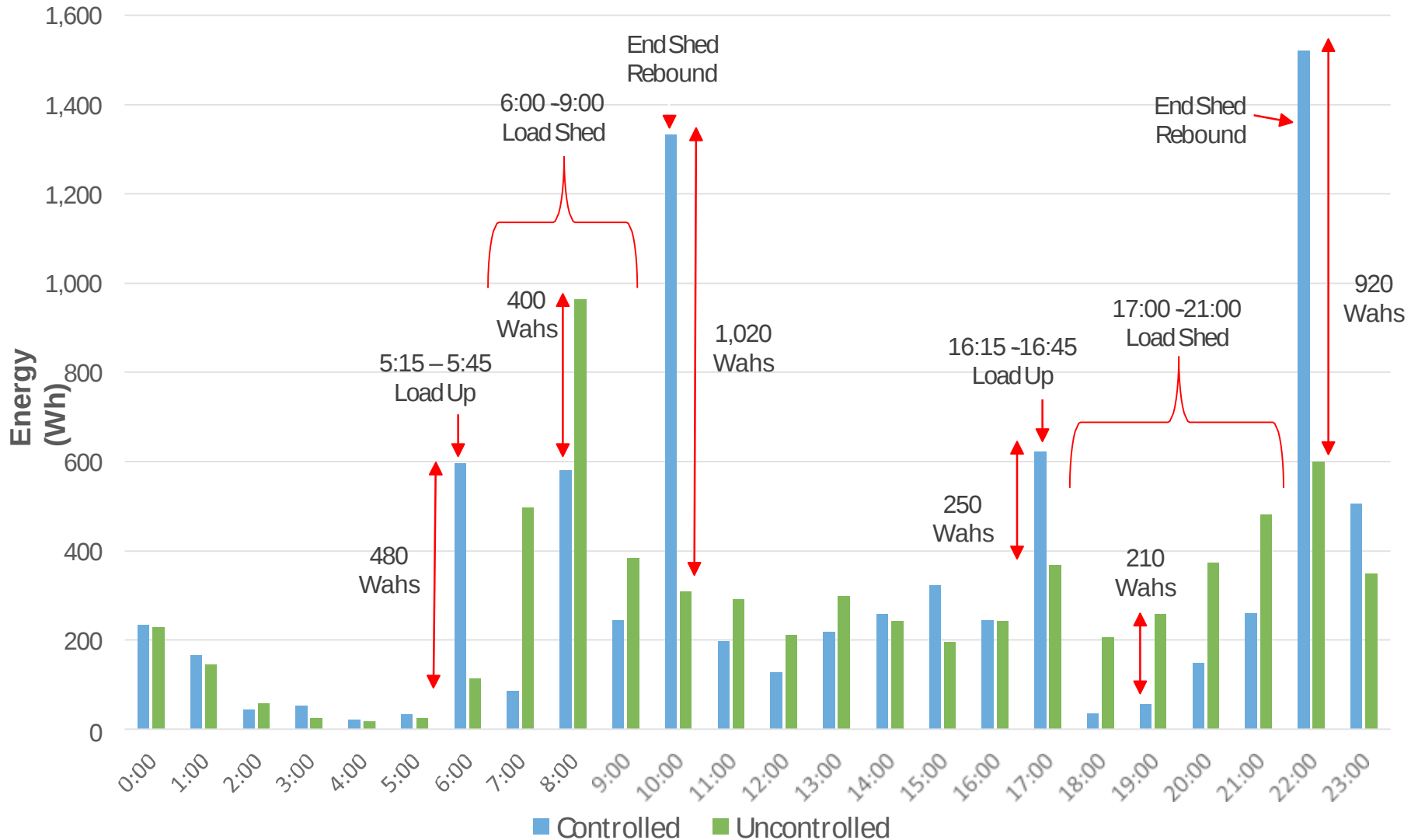
Water Heater Control

September 2016

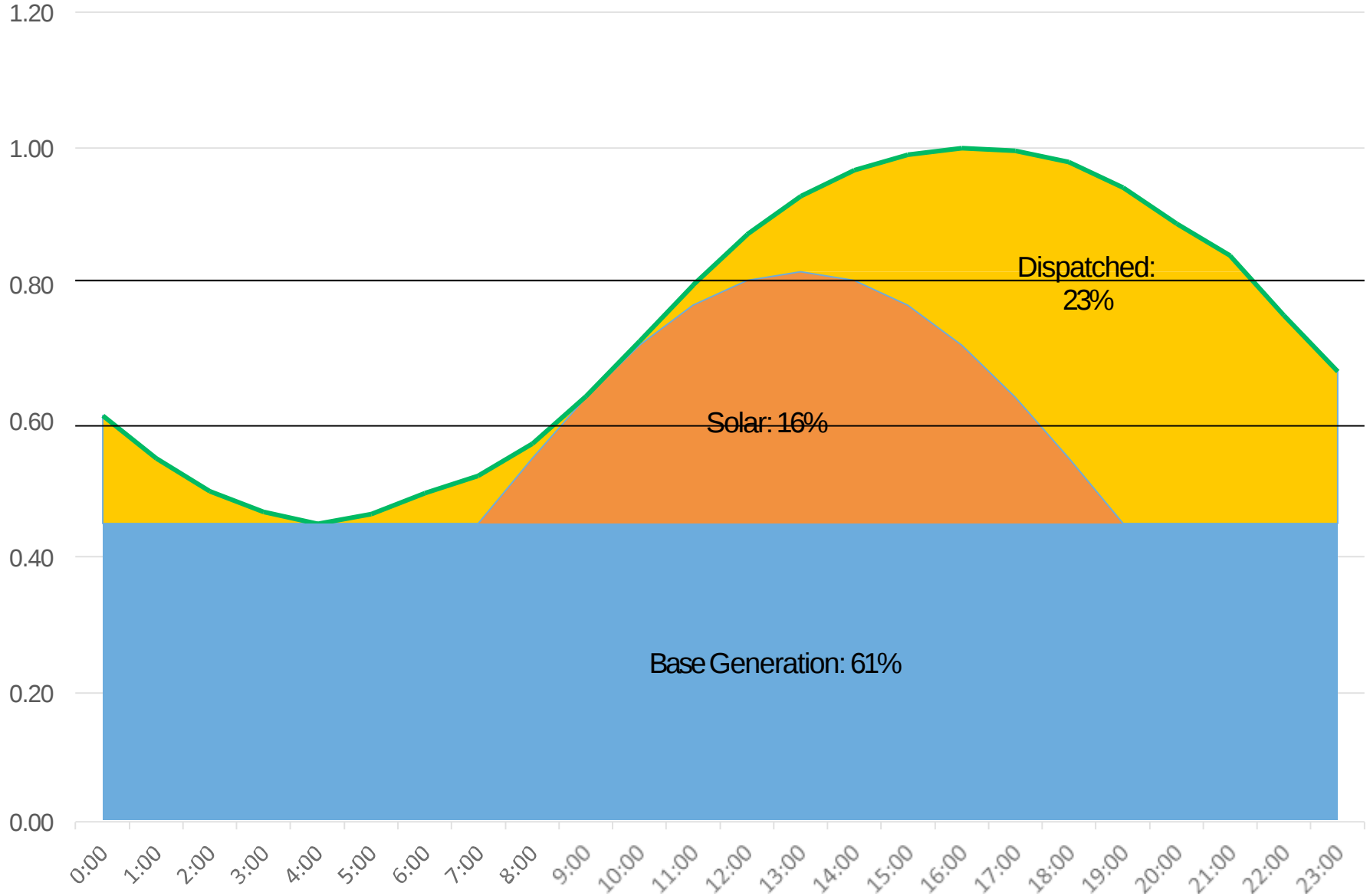


Water Heater Control

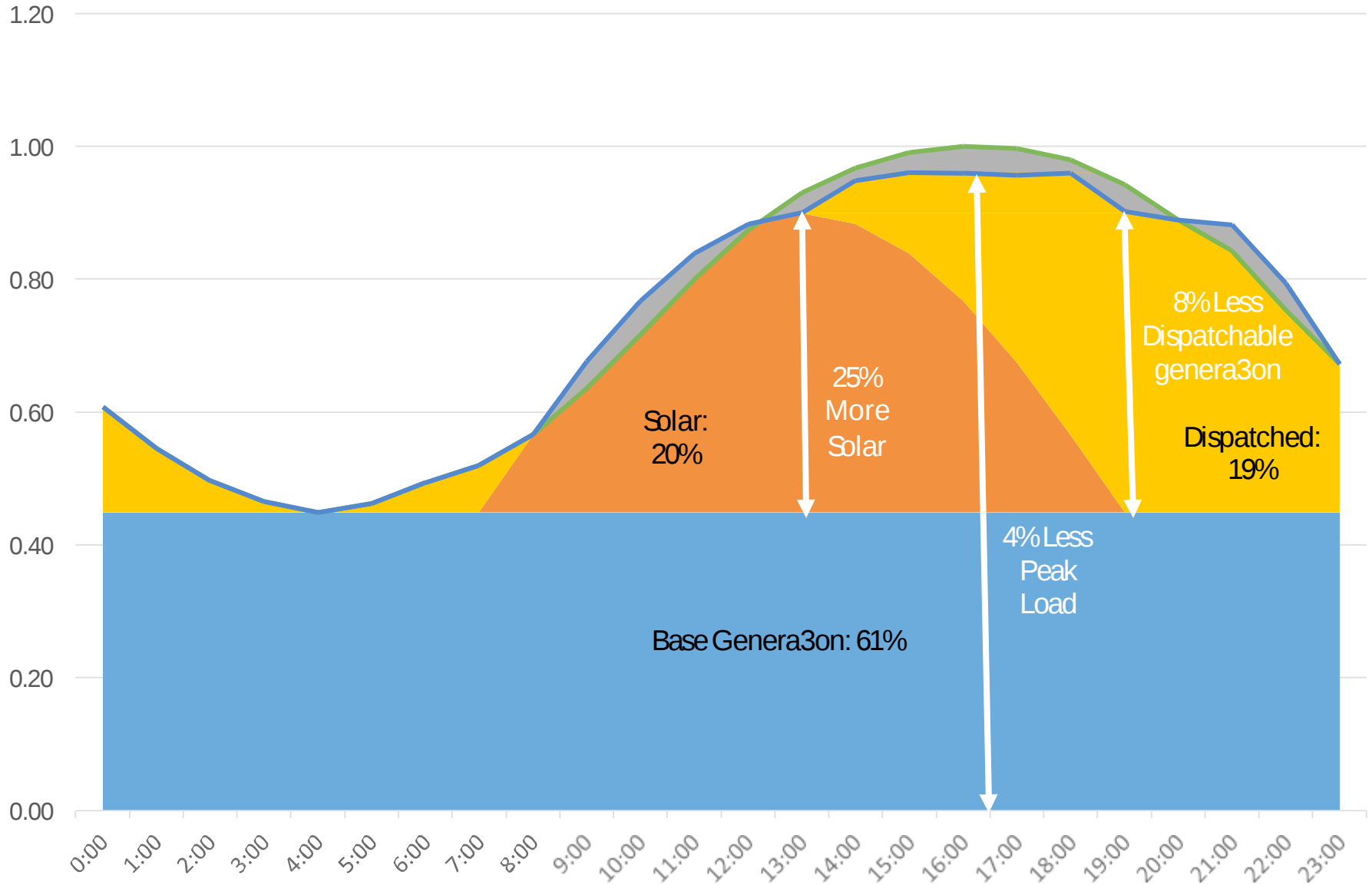
December 2016



No Grid Controlled Water Heaters

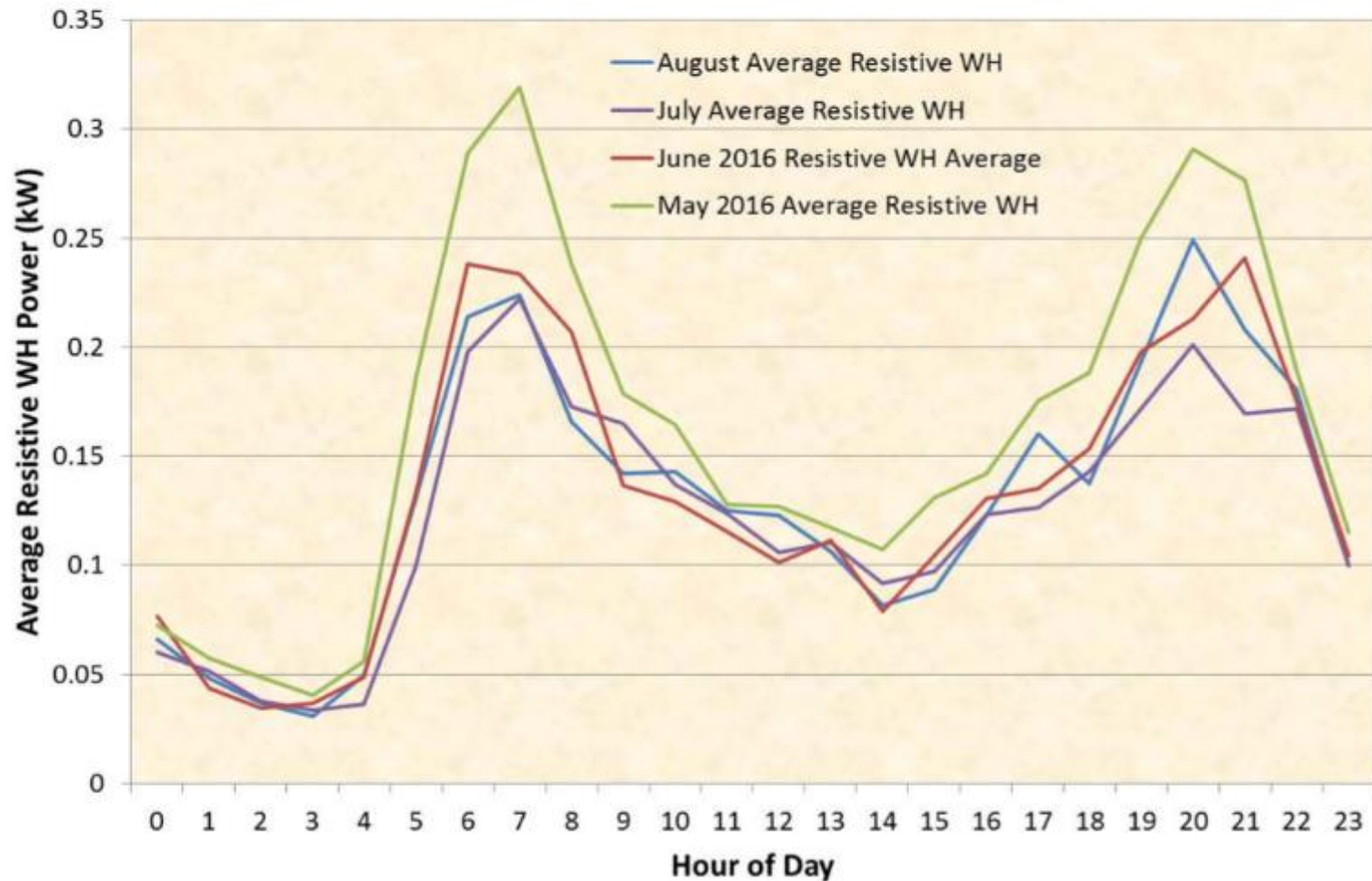


All Grid Controlled Water Heaters



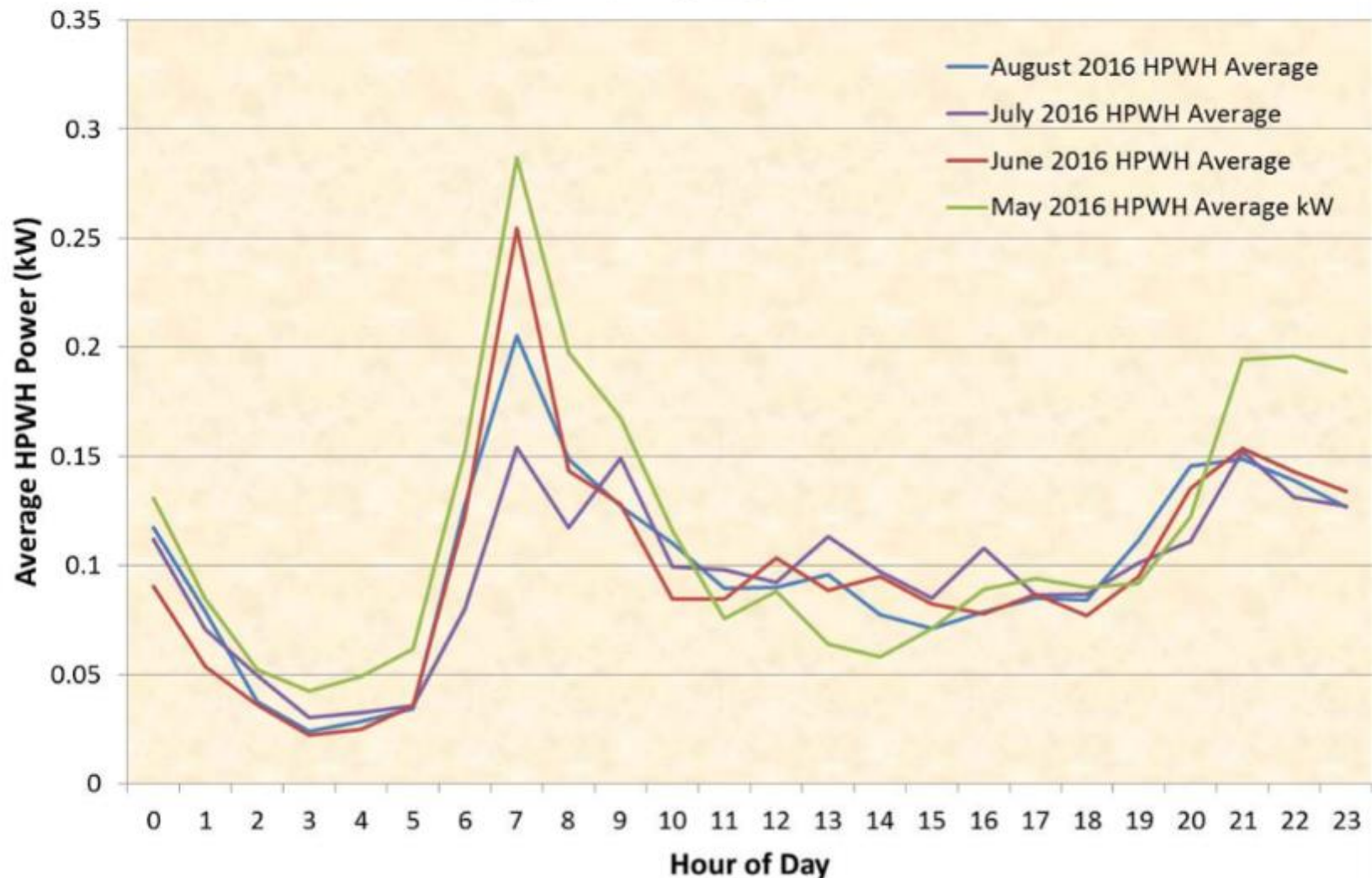
Water Heater Data (Southern US)

Resistive WH Average kW by Hour
May, June, July, August 2016



Water Heater Data (Southern US)

HPWH Average Power by Hour
May, June, July, August 2016



More About Open Standards



- CTA-2045 Water Heater Demand Response (SkyCentrics) <https://www.youtube.com/watch?v=baPmqPgQhDE>
- AO Smith SkyCentrics CTA-2045 hardware install - <https://www.youtube.com/watch?v=-oLVHxGaZAM>
- AO Smith SkyCentrics CTA-2045 connect Wi-Fi - https://www.youtube.com/watch?v=B_Yy_zLR17w
- EPRI CEA-2045 Field Demonstration Project (EPRI) https://www.youtube.com/watch?v=BHMssq6_R94
- Alexa voice control of PTAC (SkyCentrics) <https://youtu.be/YSQaxz2tzUM>
- Water heaters, as sexy as a Tesla? (Rocky Mountain Institute) <https://www.rmi.org/news/water-heaters-sexy-tesla/>
- Economic Sizing of Batteries for the Smart Home (NREL) <https://www.nrel.gov/docs/fy18osti/70684.pdf>
- Email me for the white paper on OpenADR and CTA-2045

Questions?

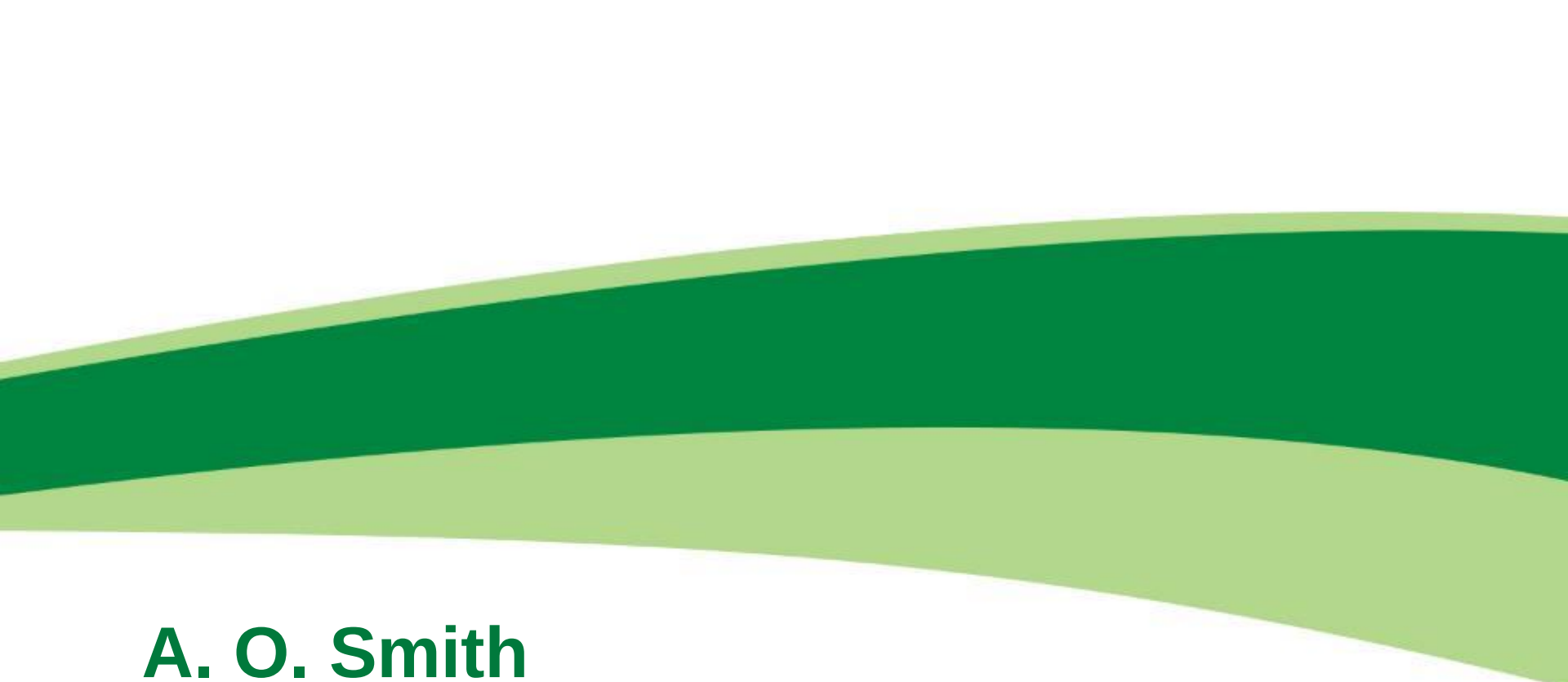


tristan@skycentrics.com

415.962.1505



Francois Lebrasseur
A.O. Smith

A decorative graphic at the top of the slide consisting of three overlapping, wavy horizontal bands in shades of green. The top band is a medium green, the middle is a darker forest green, and the bottom is a light sage green.

A. O. Smith

Heat Pump Water Heaters [HPWH] What You Need to Know Right Now

February 27, 2020

Residential HPWH Product Line

Full portfolio of ENERGY STAR® qualified residential heat pump water heaters. Electronic thermostat; Grid enabled via CTA 2045 port adapter

-Annual EE savings: > 2,500 kWh saved compared to a standard electric water heater of similar performance

-Annual GHG reduction: ~2 metric tons compared to a standard electric water heater of similar performance.

- ❑ 50, 66, and 80 gallon 240V models
- ❑ 10 and 6 year warranty options
- ❑ High efficiency operation **3.45 UEF**
- ❑ NEEA Tier 3 Qualified models
- ❑ All models are allow for flexible ducting options for handling the cooler air being produced by the heat pump



New....Commercial HPWH CHP-120



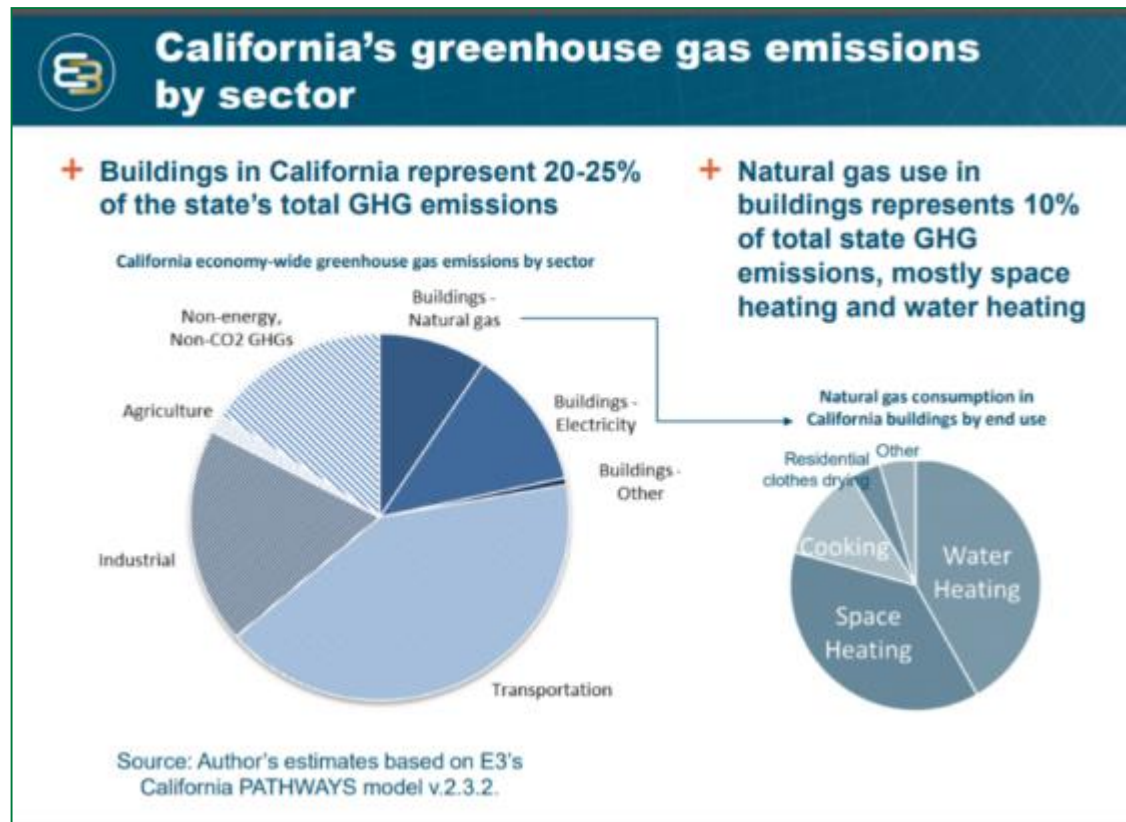
MODEL CAHP 120



- Annual EE savings:** ~20,000 kWh saved compared to a standard electric water heater of similar performance (base 350 G daily water usage).
- Annual GHG reduction:** ~15 metric tons compared to a standard electric water heater of similar performance.

- ❑ Large 119 gallon storage
- ❑ HP + 12kWh resistive for a total input of approximately 20kWh
- ❑ Compact integrated design for ease of installation 31" W X 30" D X 70" H
- ❑ First hour delivery of 150 gallons
- ❑ Applications 100 - 600 gallons per day
- ❑ 3 modes of operation - efficiency (150°F), Hybrid (150°F), Electric (180°F)
- ❑ ENERGY STAR® certified with high **4.3 COP** performance
- ❑ Approximately 1.9 tons of cooling/dehumidification when HP is running

Strategic Tool for EE and GHG Reduction in Buildings



CTA-2045 Grid Connected



Capabilities

Shed Load

Shift Load

Add Load

Regulation

Load Balancing

Renewable Integration

Price Controlled

More.....

OADR Compatible

IoT App Expansion



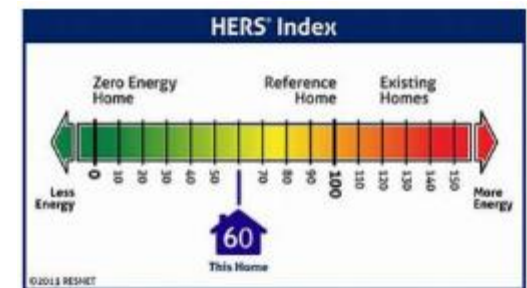
Market Transformation....What it Takes

- ❑ Accurate savings.....Update the TRMs with current UEF/COP performance levels
- ❑ Incentives for HPWH platforms, including > 55 gallon
- ❑ Prescriptive Upstream/Midstream instant rebates for both Residential and Commercial water heaters....Up to 10X more effective than Downstream mail-in rebates
- ❑ Incentives for both Retail and Wholesale channels, including new construction
- ❑ Simple program design, digitize any end user data collection, combine EE/DR incentives
- ❑ Market demand....Pool Ad funds with Manufacturers like A. O. Smith
- ❑ Joint Distributor and Contractor trainings; Leadership from Program Administrators

Help Builders Upgrade to High Efficiency Equipment

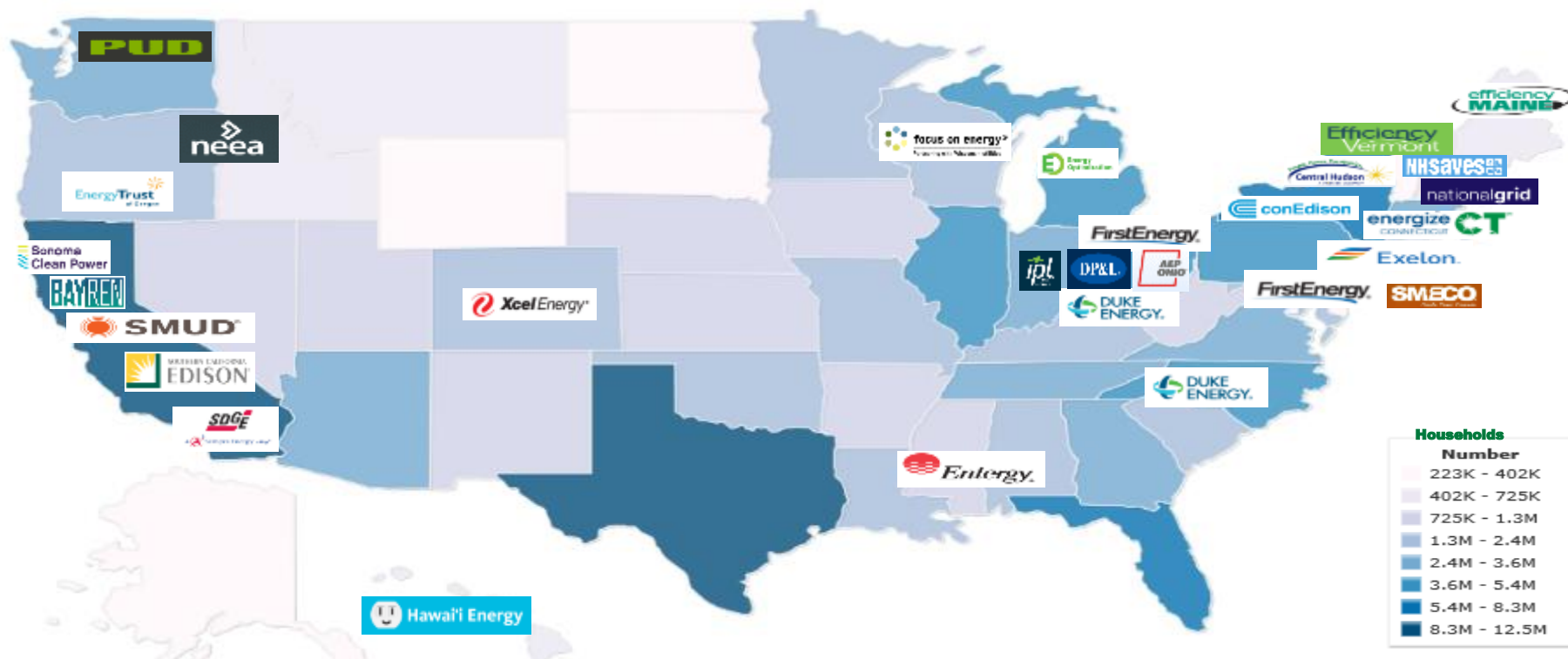
3.42 UEF electric heat pump and 0.93 UEF tankless gas condensing water heaters earn between 3 and 6 HERS [Home Energy Rating System] points across climate zones and home configurations

.....More HERS points than an HVAC system upgrade from 14 to 15 SEER and 8.2 to 9 HSPF

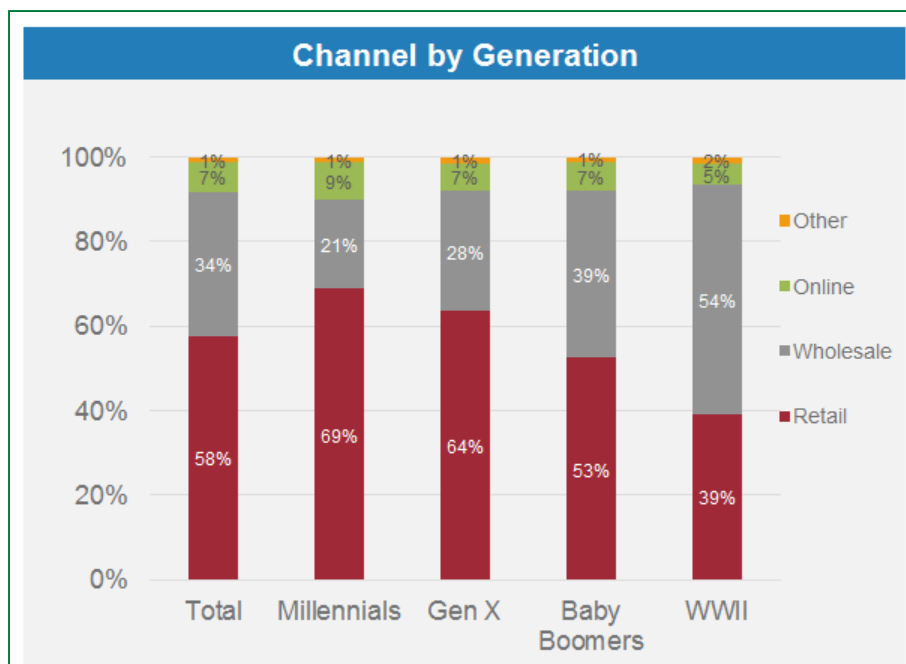


Water heaters....Low upgrade cost/HERS ratio

Existing Homes 2020 Instant Rebate Programs



Create Market Demand For Both Retail and Wholesale Channels



Source: KeyStat water heater purchases YE4Q18 sample size n=5,310

Markdown





Save more with an A.O. Smith® Electric Heat Pump Water Heater and your local utility company.

*Eligible model must purchase order of all. See our website for additional details. The cost of energy efficiency programs are received through customer rebates in accordance with the California Act (2014-2016). The amount of rebate is based on the model of the water heater being purchased. Rebates are given, given and no rebate for the same. Rebates are given for 100% of the rebate.

FirstEnergy

Midco • Pacifi • New York • Pacifi • Pacifi

\$500

Instant Rebate Included In Price*

Validated Instant



XCEL ENERGY CUSTOMERS: WATER HEATER INSTANT REBATES NOW AVAILABLE

\$70-\$450 instant rebate on select models, plus up to \$330 in annual savings*

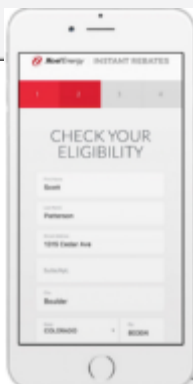
Claim your instant rebate by following these simple steps below:

STEP 1: Check your eligibility at [xcel.com/WaterHeater30](#)

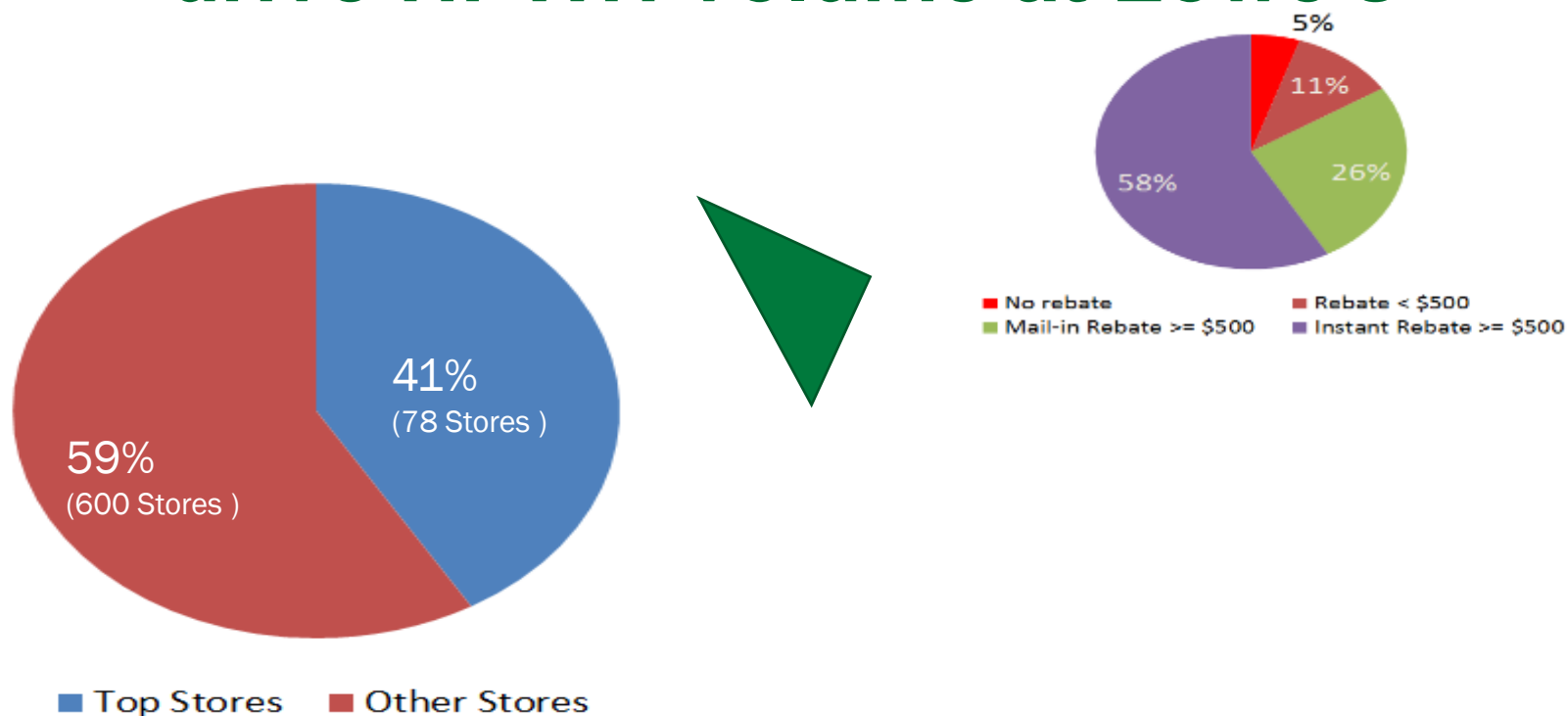
STEP 2: Choose your preferred qualifying water heater type and download your coupon.

STEP 3: Find a Customer Service Representative to help complete your purchase.

Xcel Energy
EXCELLENCE IN SERVICE



Rebates $\geq$ \$500 (instant especially) drive HPWH volume at Lowe's



January to September 2019 HPWH Unit Sales at Lowe's

Bring Consumers to Retailers, Promote Instant Rebate + \$300 Federal Tax Credit

nationalgrid

Heat Pump Water Heaters use less than half the energy of standard electric water heaters.

Save More Money

- Save a total of **\$900** with a **\$600** instant rebate from National Grid and a **\$300** Federal Tax Credit**
- Save around **\$570** every year on your electric bill**

Get the same reliable hot water you're accustomed to. That means no surprises, only savings.

HUGE SAVINGS!
\$900
With an instant rebate from National Grid and a Federal Tax Credit.

** For information on the Federal Tax Credit, go to <https://www.irs.gov/credits-deductions/credits-deductions/energy-credits>.
*Based on 2017 EPA estimates of energy usage for standard electric water heaters. Actual savings may vary based on usage and local utility rates. **Based on 2017 EPA estimates of energy usage for standard electric water heaters. Actual savings may vary based on usage and local utility rates. ***Based on 2017 EPA estimates of energy usage for standard electric water heaters. Actual savings may vary based on usage and local utility rates.

- ☐ Screaming deal
- ☐ Utility attribution
- ☐ Proactive replacements
- ☐ General market awareness
- ☐ Price transparency

Wholesale channel....A. O. Smith and State ENERGY STAR Hubs



<https://aosmith.mymarketingbench.com/>

☐ Promotional tools for Distributors and Contractors



<https://state.mymarketingbench.com/>

☐ Product and Sales Training Material

Sales/Training/Advertising Tools

Counter Display



Dimension
s 8.5"x14"

Heat Pump Shells



Product Training



Consumer Brochure/Tearpads



Contractor Rewards



Consumer Advertising



Bring Leads to Contractors AOS Spring Campaign

- 6x11" Postcard
- 6x11" Magnet Postcard
- Table Tent
- Poster
- Digital Banner Ads



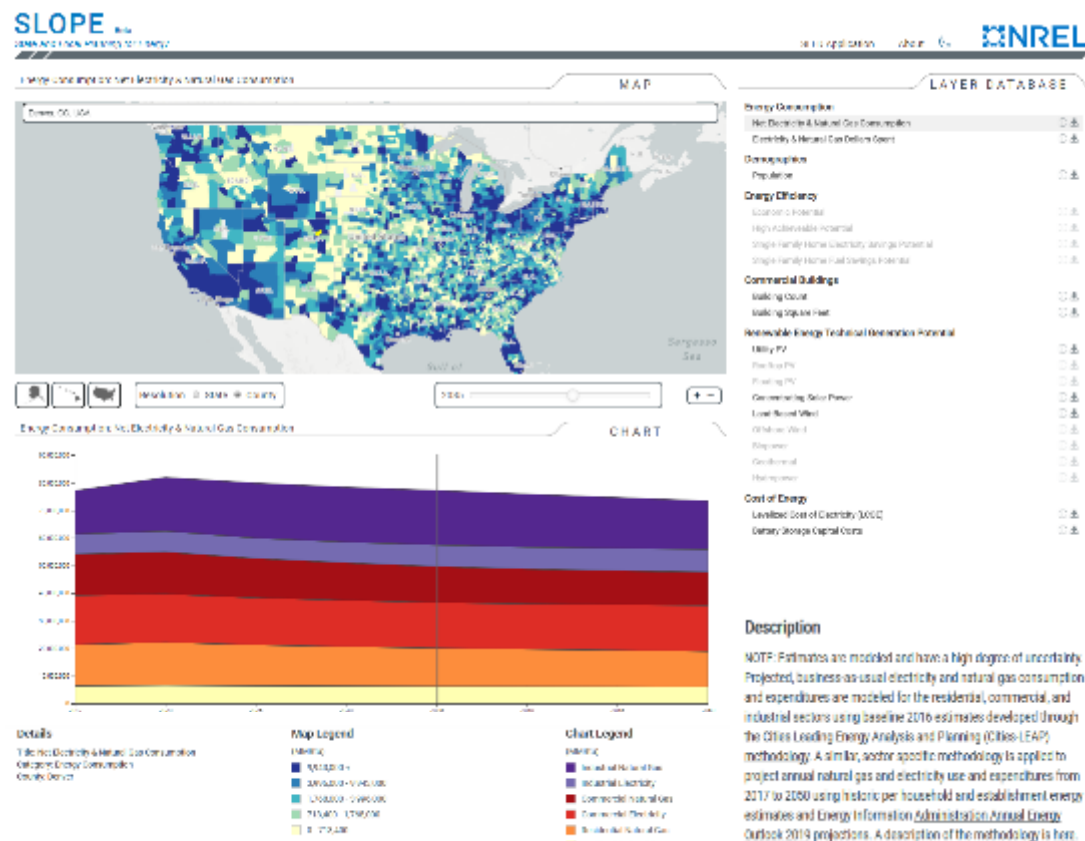
SLOPE Platform

A DOE-led collaboration between NREL and 8 EERE technology offices to create a *dynamic, comprehensive energy planning platform* of integrated, localized data for state and local decision makers

- **Phase I:** Beta version launched (Jan. 2020)
- **Phase II:** Adding transportation and generation mix data; enabling user-saved settings (under development in 2020)

Access the Platform:
<https://gds.nrel.gov/slope>

Comments or Questions?
slope@nrel.gov



Additional Resources

- [HVAC SAVE Case Study](#)
- [Air Source Heat Pump Installer and Consumer Resources](#)
- [ENERGY STAR Verified HVAC Installation Program](#)
- [Earning HERS Points for Quality HVAC Design & Installation](#)

Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- [Handbooks](#) - explain *why* and *how* to implement specific stages of a program.
- [Quick Answers](#) - provide answers and resources for common questions.
- [Proven Practices](#) posts - include lessons learned, examples, and helpful tips from successful programs.
- [Technology Solutions](#) **NEW!** - present resources on advanced technologies, **HVAC & Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.



<https://rpssc.energy.gov>

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Please send any follow-up questions
or future call topic ideas to:
bbresidentialnetwork@ee.doe.gov