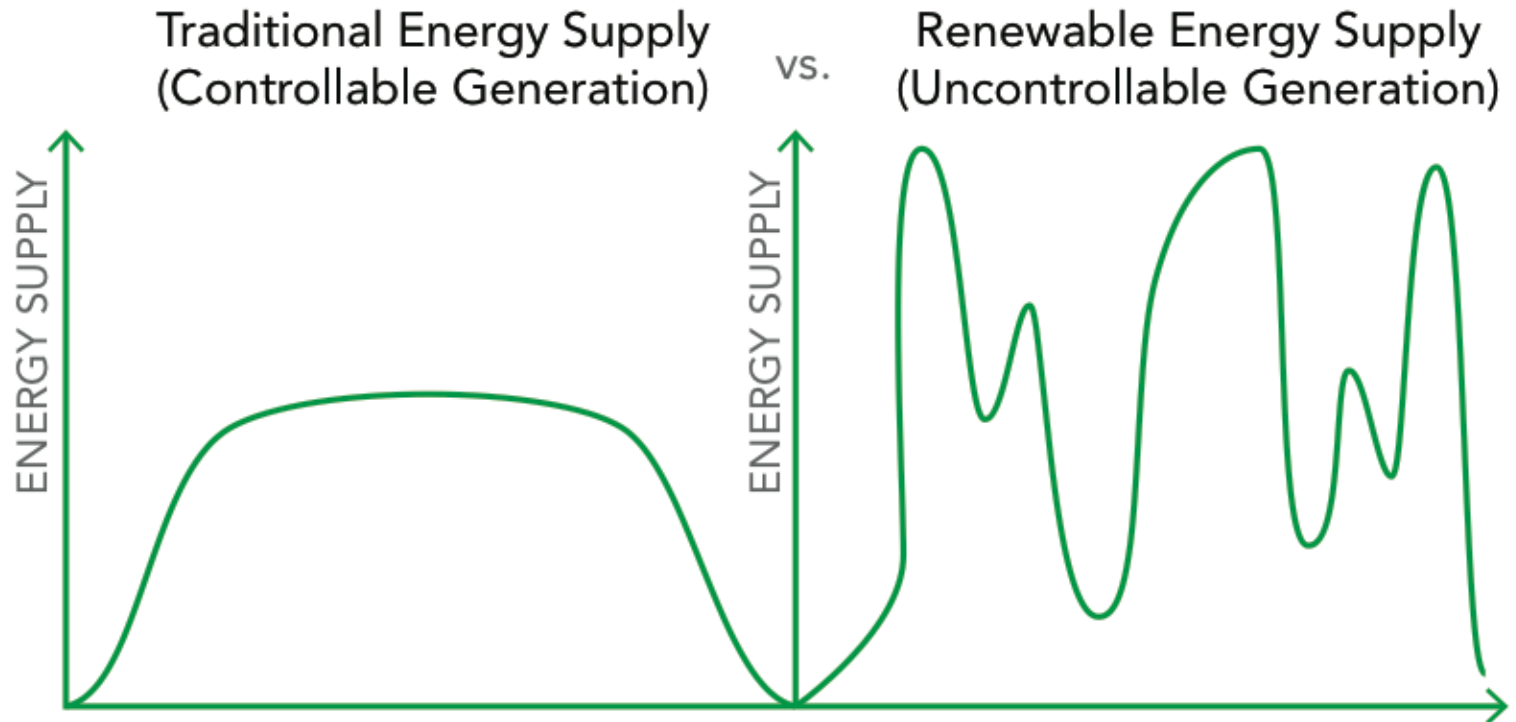




mosaic power

Dan Conant
Director of Sales and Marketing

The challenge for renewables



How do we solve this problem?

- Need resources to turn on and off very fast (2 seconds)
- Needs to have significant energy storage
- Won't impact people in their daily lives or hurt equipment
- Fairly low capital cost
- Easy to replicate/copy and deploy

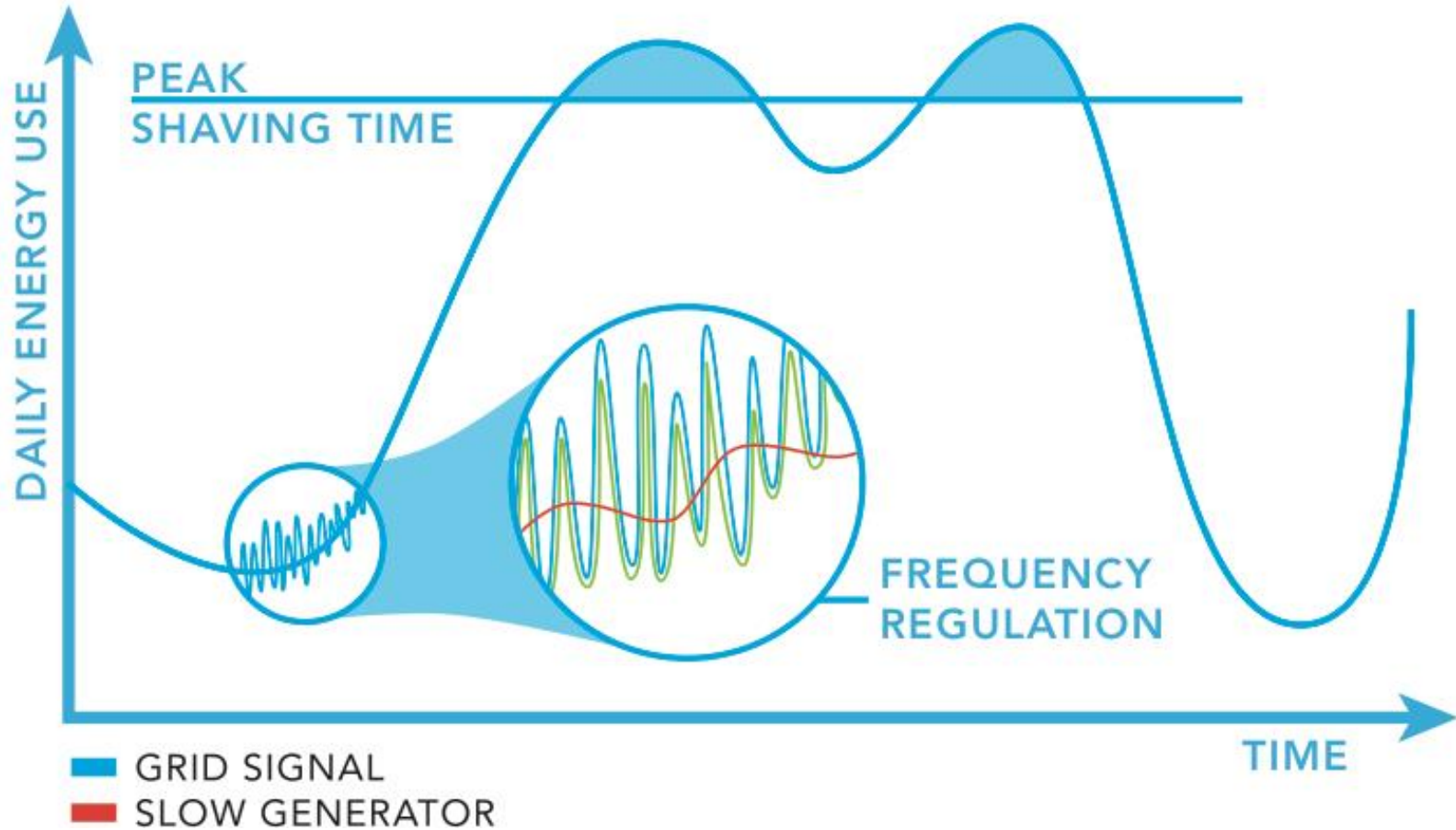
What can do this?

- Residential electric water heaters => already store energy thermally
- Easy to turn off and on – no motors
- 40 million of them in the US

Mosaic Power uses
residential water heaters
to respond to rapid changes
on the electric grid.

- The grid pays Mosaic Power for smoothing power
- Mosaic Power pays for equipment & installation
- Customers receive \$100/year for participating

Markets for managing the challenge



PJM Market

- \$2 billion spent annually to smooth fast electricity changes
- Problem increases with wind and solar



40 million electric water heaters in the US;
8 million in PJM

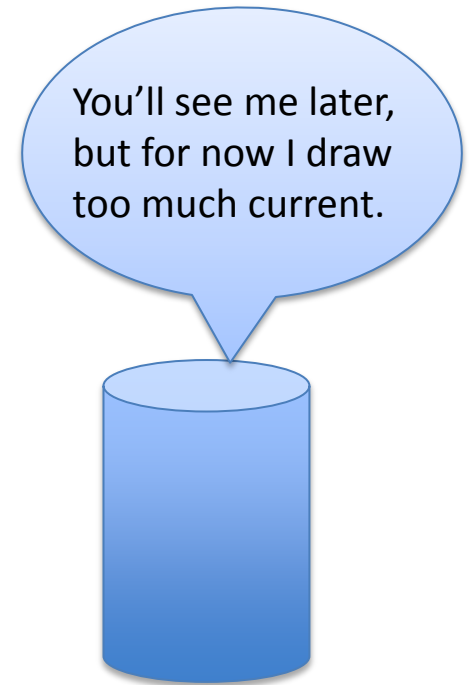
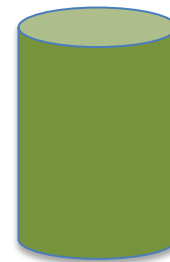
Our water heater profile

YES! – Standard electric water heaters

- No gas
- No propane
- No solar heated
- No smart heaters
- No on-demand
- No heat pumps
- No geothermal

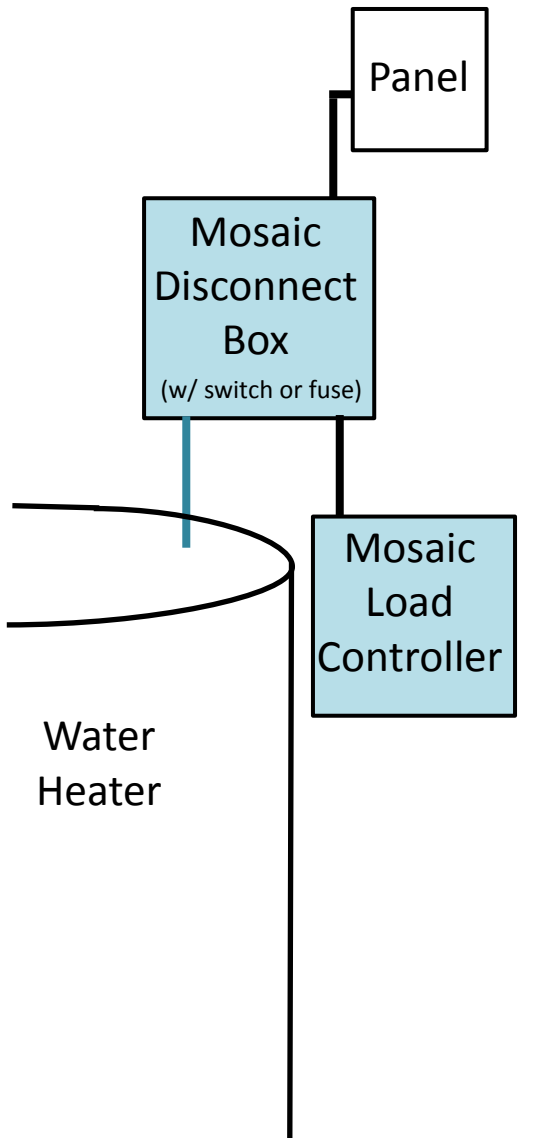
Up to 30 amps

40+ gallons

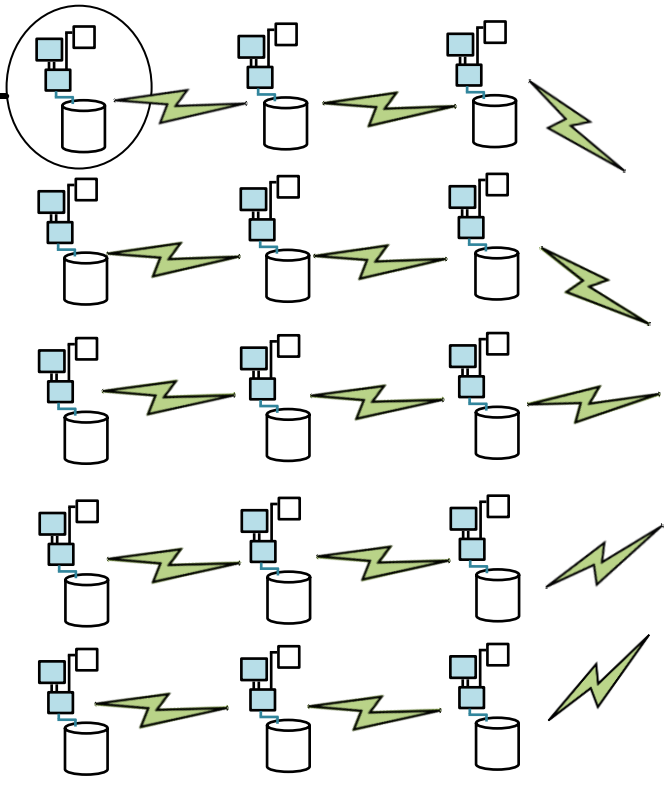


Apartment Complexes

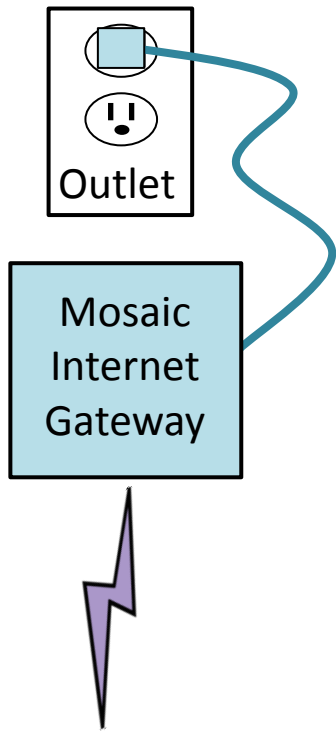
1 Load Controller per Apartment (Water Heater)



12-15 Load Controllers per Gateway (Zigbee Communication)



Gateway located in stairway or equipment room. AT&T cell coverage (at least three bars) required.

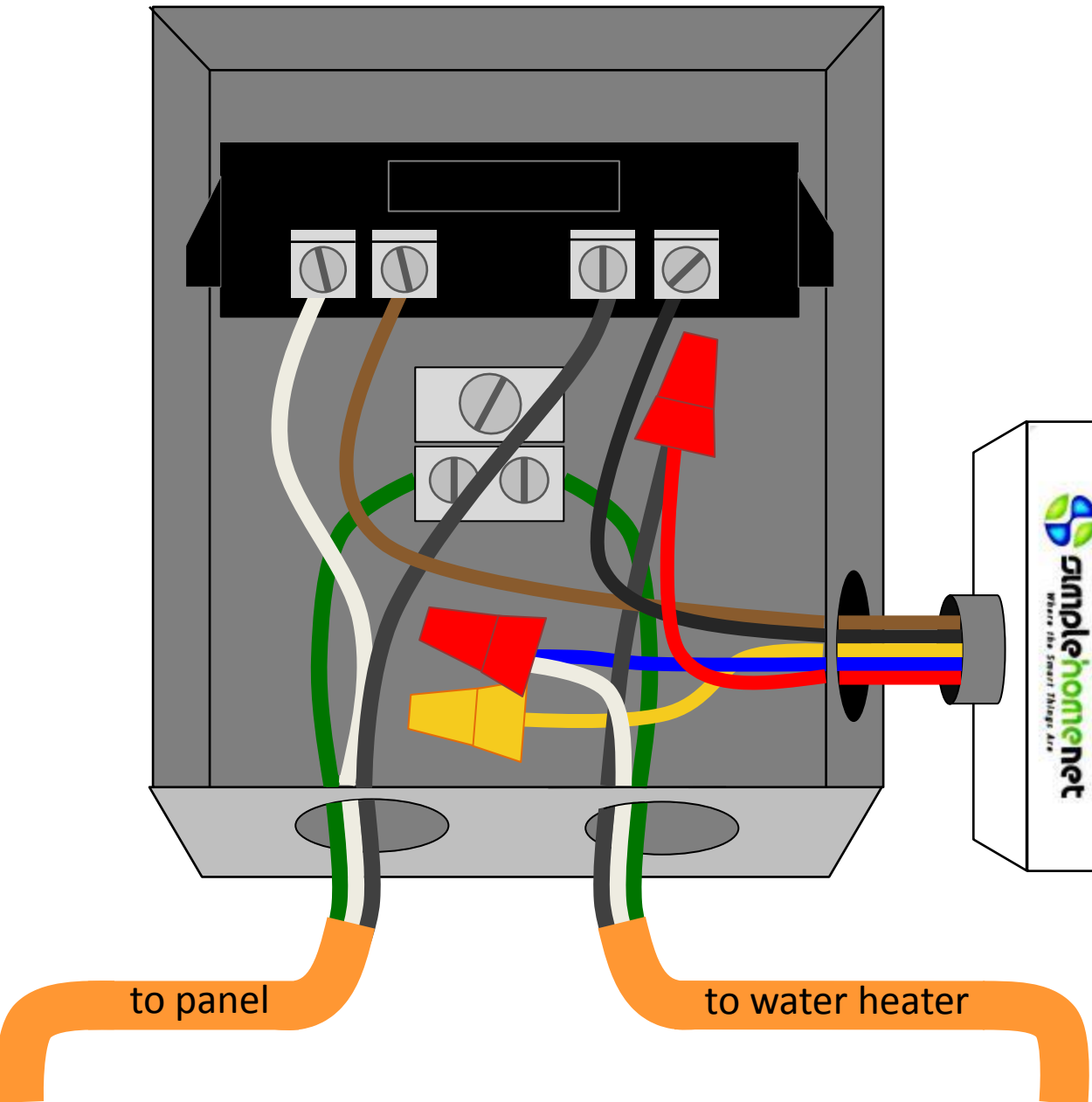


Cellular communication to the Internet

In real life...



Wiring Set-Up (Inside Disconnect Box)



Metering Dual Load Controller
ZBMLC30 Model - 4040B

LOAD STATUS

SET

MAC Address:

Conforms to ANSI/UL STD 916
Certified to CSA STD C22.2 #14
Input: 120-240VAC, 40mA (No Load) 50/60 Hz
Output (Red): 30A 120-240VAC Resistive, 1 1/2 HP
Output (Yellow): 30A 120-240VAC Resistive, 1 1/2 HP
Raintight for Indoor/Outdoor Use

FC
Contains FCC ID: T70205148M4
Contains IC ID: 7498A-CV05148M4

Caution: Shock Hazard. Disconnect power to this switch before servicing equipment. Attention: Danger of arc flash/arc flash protection de-ice transformer switch is dangerous
Connect to a 30A main breaker with 12AWG or larger wires rated for at least 105°C (221°F)

Manufactured:

simplehomenet
Where the Smart Things Are

Made in USA

ZigBee
Certified product

Intertek
3101636

ETL
US

Milestones Achieved

- Residential pilot has been running 22 months
- 370 units installed
- 15 cold showers reported over 2 years
- First revenue – October 2013
- Closed SBA loan in January
- 2 apartment management groups have installed
- Provided crowdfunding for largest community solar project in West Virginia

Competitors

- Old technologies:

	<u>Operation speed</u>	<u>\$ to deploy</u>
– Gas generators	slow	\$
– Hydroelectric	moderate	\$\$\$
- New technologies:

– Batteries	fast	\$\$\$
– Flywheels	fast	\$\$\$
– Other aggregators*	fast	\$\$

*Other aggregators supply through local utilities

Contact Information

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