

GE Appliances and Lighting Home Energy Solutions

Introduction to Devices with Brillion™ Technology



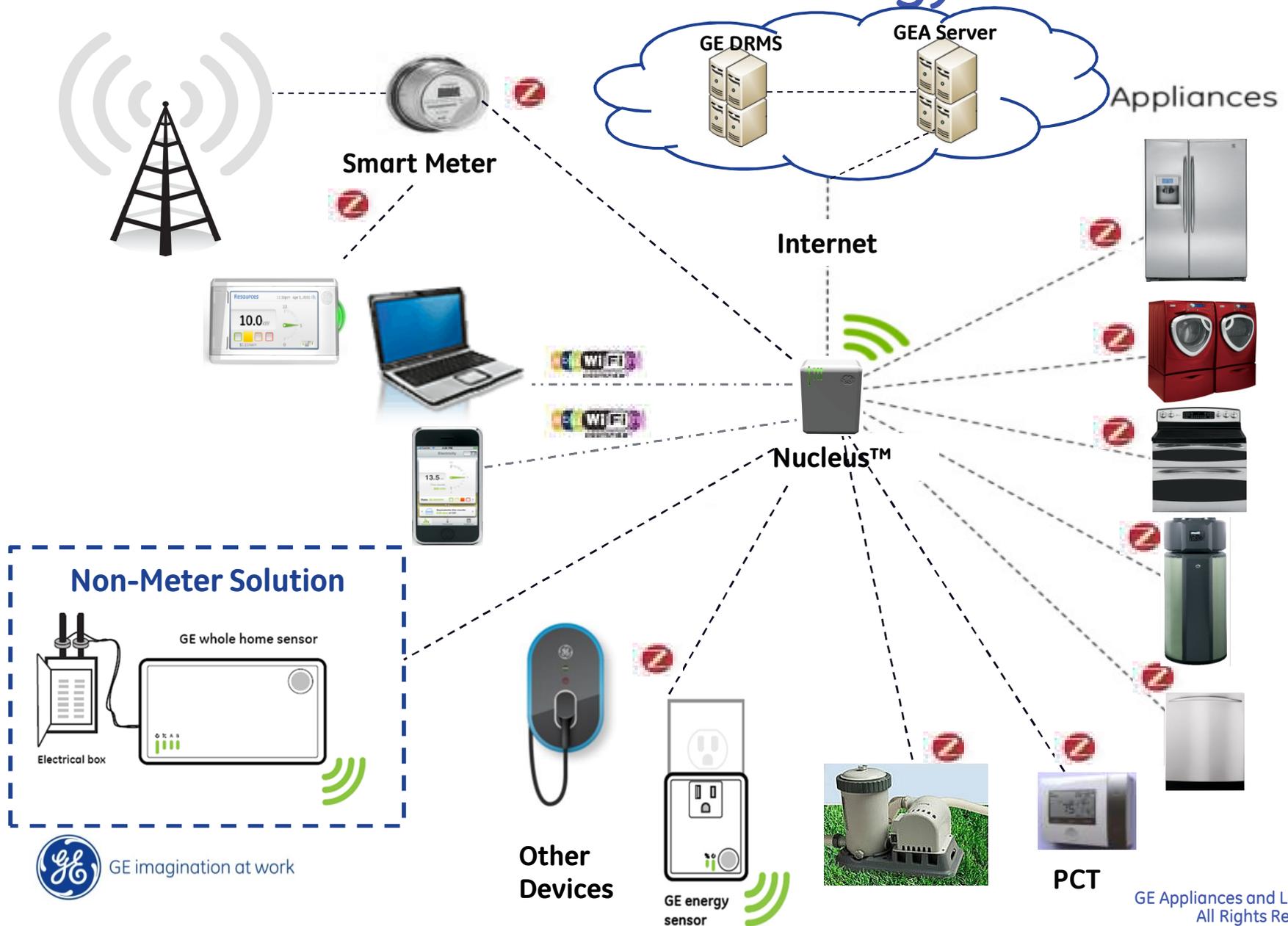
GE imagination at work

Portfolio of Products

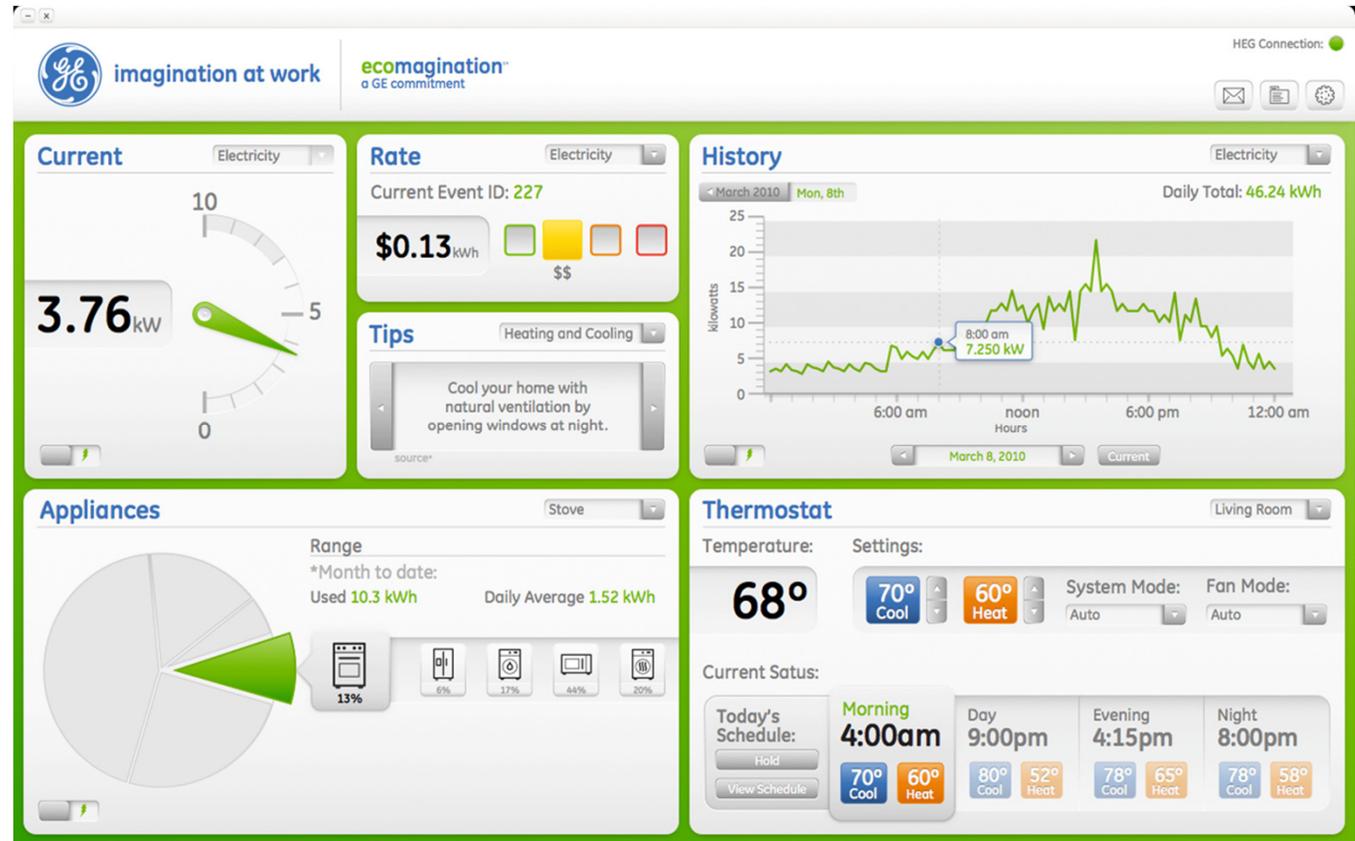


GE imagination at work

Brillion™ Suite of Home Energy Solutions



Nucleus™ energy manager with Brillion™ technology



Consumers can reduce electric usage by an average of 5% per year.

GE Profile Appliances enabled with Brillion™ technology



When coupled with the Nucleus and a TOU rate, consumers can reduce electric usage by an average of 15% per year.

Other Devices with Brillion™ technology



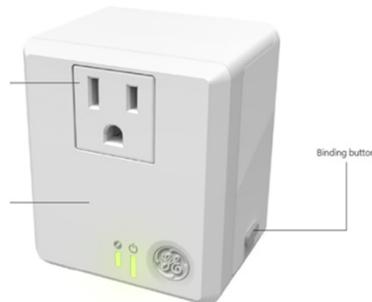
Programmable Thermostat

- ZigBee SEP Thermostat
- Full 7 day program with 4 set point per day
- \$KWh Usage / Instantaneous KWh / \$ Pricing



Energy Display

- Near real time energy usage in kW or \$'s
- Historical energy usage and analysis
- TOU rates
- Utility messaging



Load and Outlet Switches

- 240V/30A DR Switch
- 120V/15A Energy Sensor
- Communicates usage to Nucleus using ZigBee SEP

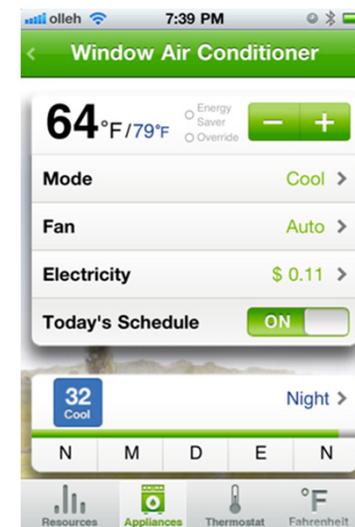
Window Air Conditioner with Brillion™ technology

The GE window air conditioner operates like a normal window air conditioner unit, but provides an opportunity for the consumer to participate in a utility's demand response event or time-of-use pricing program.

The Nucleus™ makes this data available for viewing on your home computer or via a smart phone.

Features

- 10,000 Btu unit
- Max wattage = 930
- Can enable two demand response/TOU responses
 - Mode 1 = reduce wattage to 652
 - Mode 2 = reduce wattage to 465
- Monitors energy usage
- Communicates energy use wirelessly to the Nucleus™
- Indoor use only
- Limited 1 year warranty



Unit can reduce output by 50%.

Pilot Overviews

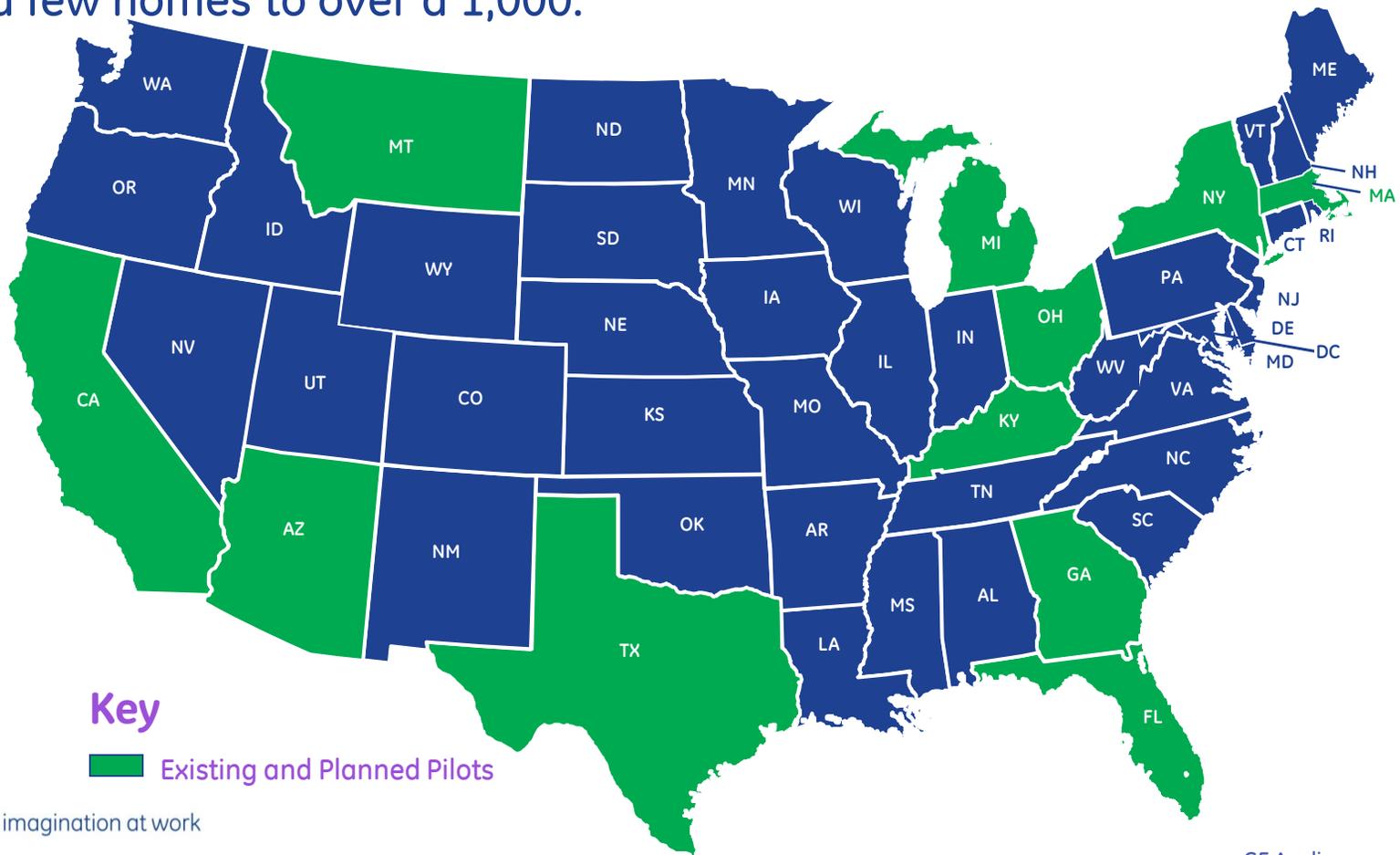


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Pilot Programs

GE has been working with utility partners to better understand consumer acceptance and issues with smart appliances

Utility pilots encompass IOU's, Cooperatives, and Municipals in sizes ranging from a few homes to over a 1,000.



Key

Existing and Planned Pilots



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GE Brillion™ suite for pilot programs ...

Nucleus™



Thermostat



In home Color display



Appliances



- Consumer installable
- Phone and web support
- PC Client software application

- Electrical installation

- Plug in wall supply

- Standard delivery and installation



Products are UL/CSA/FCC/and Zigbee certified.

Pilot benefits

Technical Validation

- Technically savvy customer
- Rigorous technical testing
- 4 other competitors
- GE Nucleus best overall solution

Comprehensive GE Solution

- Nucleus, PCT, Display, Appliances
- GE Energy demand response software
- Hosted service for rate info to home

Peak Reduction

Peak time kW reduction per home

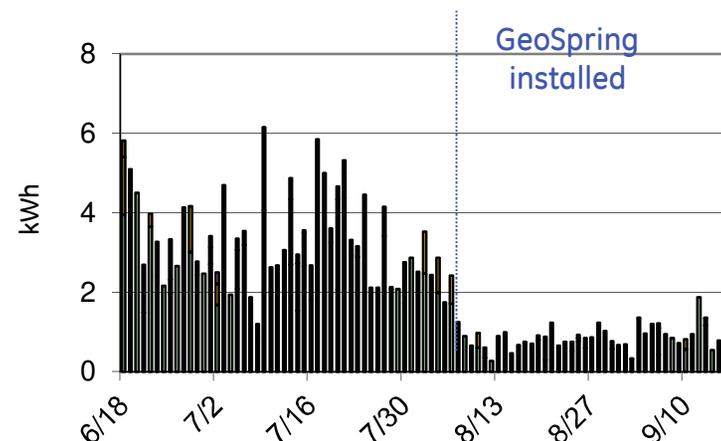
T-stat, Add Smart

	<u>Load Ctrl⁻²</u>	<u>Appliances</u>	<u>Difference</u>
1 st hour	1.0	1.8	91%
2 nd hour	0.9	1.6	79%
3 rd hour	0.6	1.0	82%
4 th hour	0.6	1.3	119%
5 th hour	(0.4)	(0.1)	83%

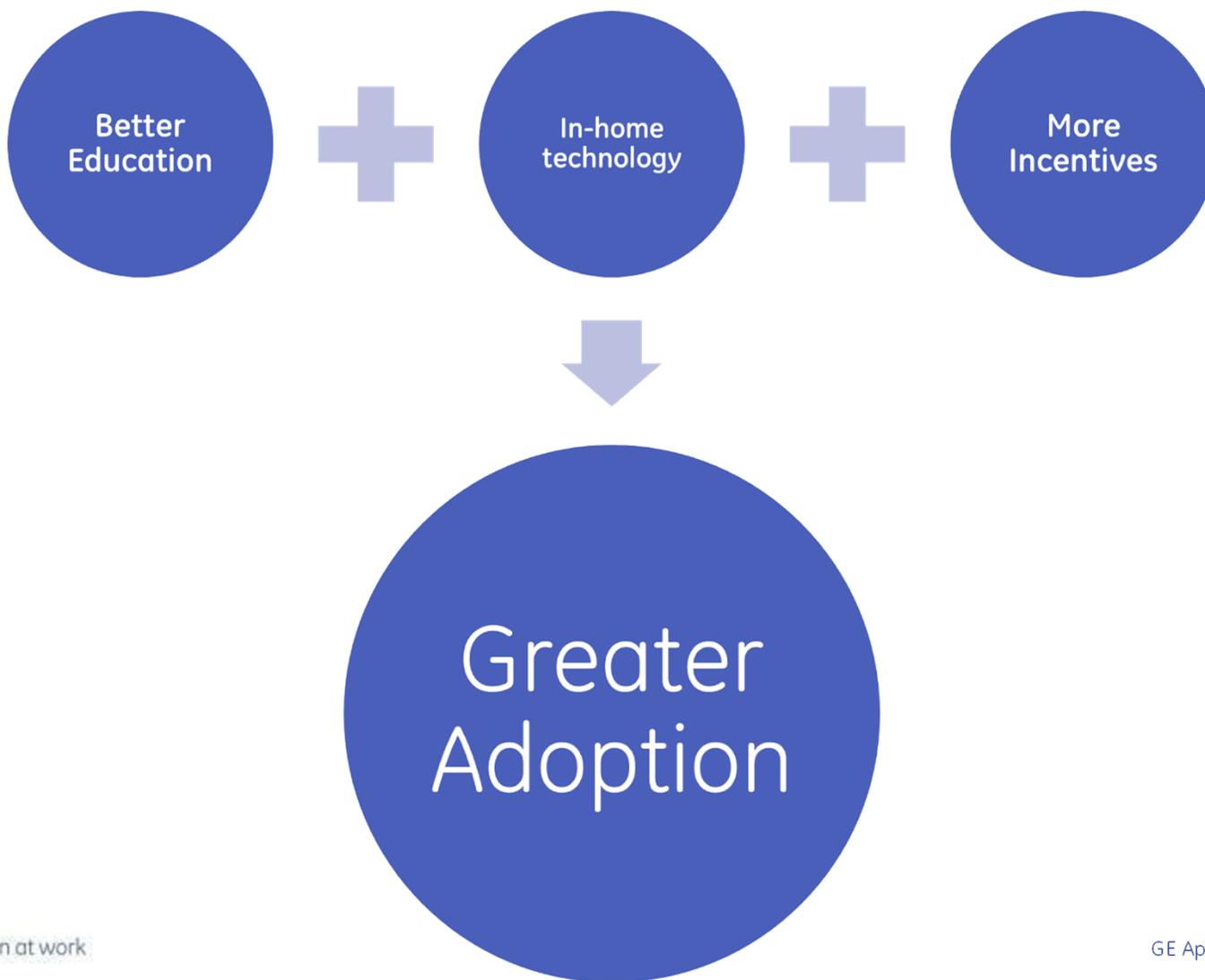
Smart appliances nearly double the benefit

2) Load control device installed on water heater

Energy Savings



Key Takeaway From Research and Pilots...



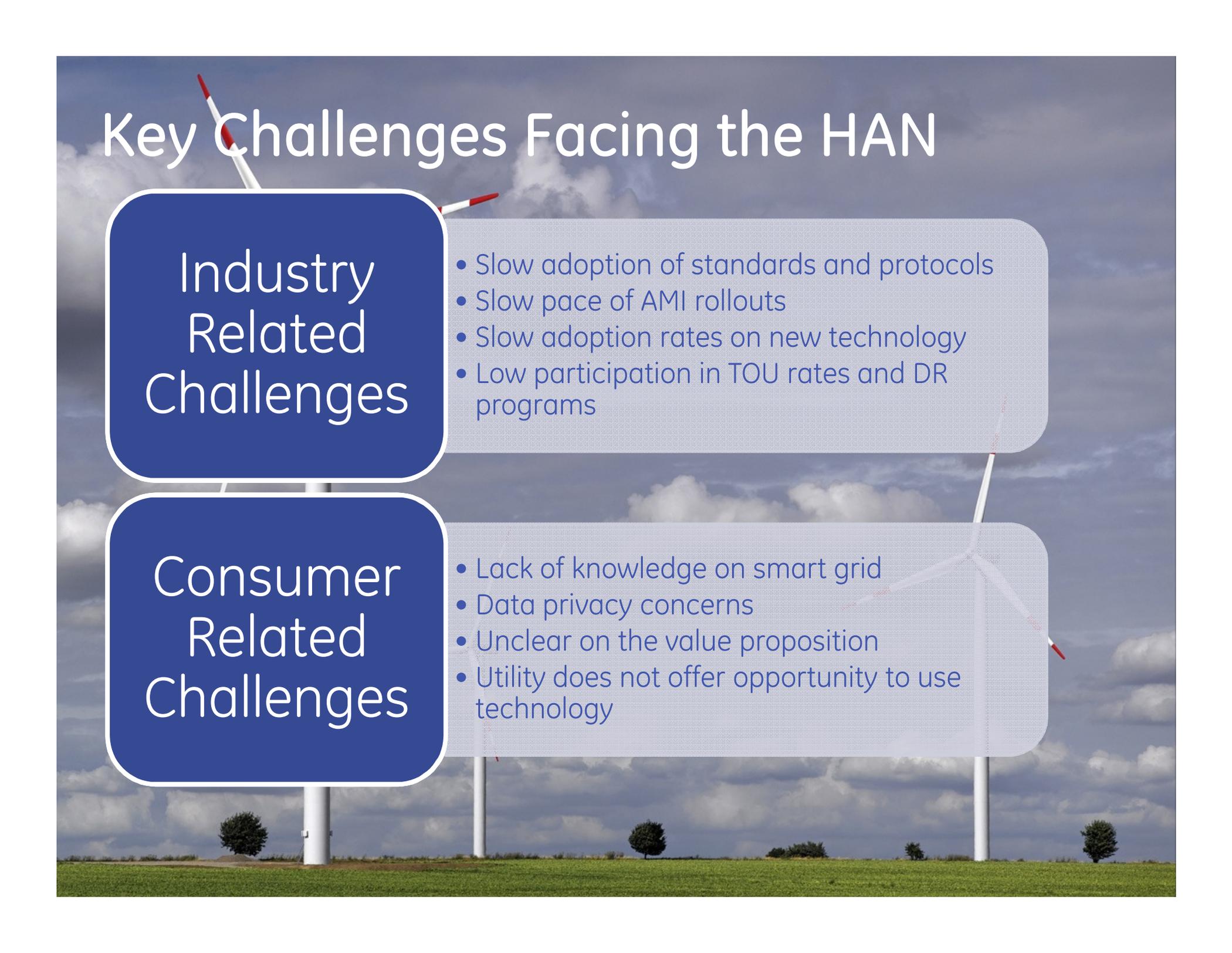
Where do we go from here?

- ✓ Continue to work with utilities in various consumer pilots.
- ✓ Place the products in retail stores.
- ✓ Builder/Contract channel.



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Key Challenges Facing the HAN



Industry Related Challenges

- Slow adoption of standards and protocols
- Slow pace of AMI rollouts
- Slow adoption rates on new technology
- Low participation in TOU rates and DR programs

Consumer Related Challenges

- Lack of knowledge on smart grid
- Data privacy concerns
- Unclear on the value proposition
- Utility does not offer opportunity to use technology



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