



American Council for an Energy-Efficient Economy

Intelligent Efficiency Conference

Track A: Integrating Distributed Resources

2A Unlocking Near-Term Load Potential with ICT

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A Utility Perspective – Consumers Energy
Smart Thermostat Pilot for Small Business**

Energy Efficient Thermostats: Energy Savings “Device” or “Opportunity”?

Programmable Thermostats

- Early thermostat studies
- ENERGY STAR Certification status
- Consumers Energy Business Programs – 37,000 programmable thermostats installed 2010-2015



Pilot hypothesis: Can a Smart Thermostat overcome human behavior that makes the Programmable Thermostat “dumb”, and harvest those savings?



2016 Consumers Energy Business Smart Thermostat Pilot

- 400+ thermostats at 174 locations, multiple sectors (office, assembly, small retail, restaurant, etc.)
- DI of small business furnaces and RTUs
- Customer WIFI required
- Older programmable vs. manual thermostats replaced at ratio of 4/1
- No cost to customer
- Participants share usage info for evaluation
- Energy efficiency program – no DR

Savings not yet available, but some notes of success from the field

- **Customers love convenience**, especially remote control smart phone access
- **Improved Usability** with intuitive interface makes features easy to use
- **Reliability** very good with minimal callback rate
- **Enhanced Control** of temperature ranges, holds, lock-out features, vacation settings and alerts
- **Great “EMS”** for small businesses with multiple thermostat buildings/locations
- **High customer satisfaction** is expected

Obstacles to success or customer satisfaction

- **Additional training** necessary for some customers, contractors may have learning curve to overcome
- **Market still testing** and smart features, example, occ. sensor vs. geo-fencing vs. learning thermostat. Customers need to be educated to understand savings mechanism and choose best product to fit
- **Wiring compatibility** excludes some equipment, “C” wire issue adds additional complexity
- **WIFI - Security**, firewalls, signal strength issues
- **Price point** to customer may be obstacle

Re: Market Transformation

- Market maturity and feature consistency needed, customers may prefer simplicity
- ENERGY STAR certification standards – coming in 2017
- Address security, Utility risk factors
- HVAC compatibility – WIFI and “C” wire
- Pricing needs to come down