

Crossing the Chasm

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Program Manager

Energy Efficiency

Emerging Technologies (E3T)



Bonneville
POWER ADMINISTRATION

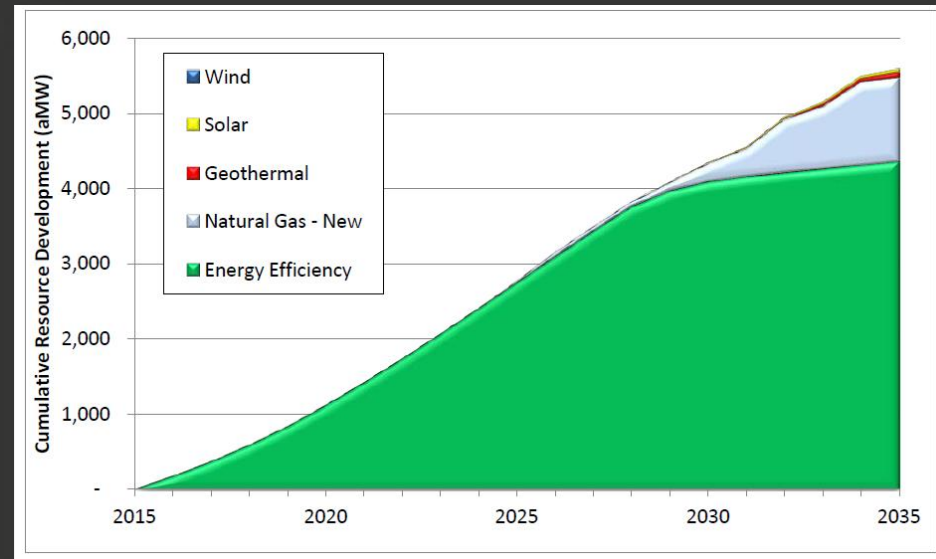


BPA

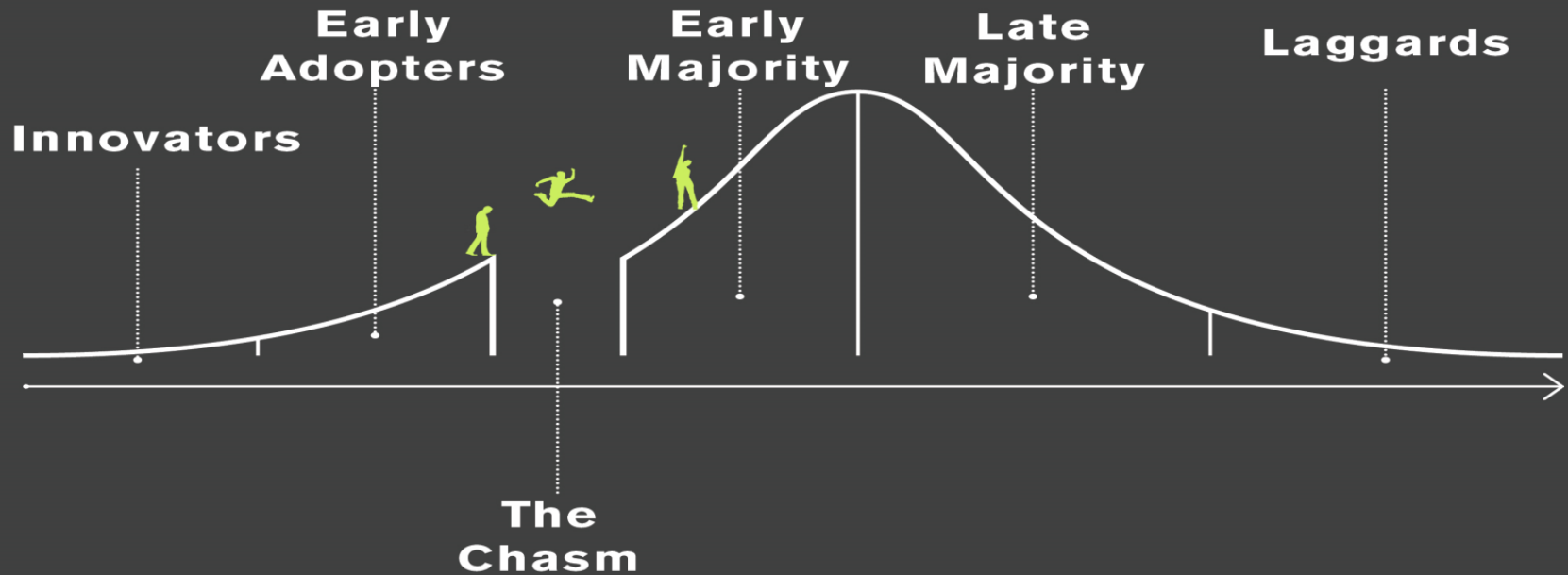


Efficiency is BPA's preferred resource

- No new generation for 20 years
- Conservation equivalent to federal hydro system



ET Program Approach



Technical Assessments Fill
the pipeline

Early MT: Placement, feedback,
installations

Ductless Heat Pumps



Long term market transformation strategy

- 35+ Years
- Multiple stakeholders & barriers
- Multi-faceted strategy
- Potentially replicate for CO2HPWHs



2007



2009

- * Northern Climate Spec NCS
- * First Product
- * Compliance testing

2013

- * NCS V2
- * New product
- * Incentives
- * Utility Incentives

2015

- * DOE/EPA Adopt NCS Test



Airflow Management

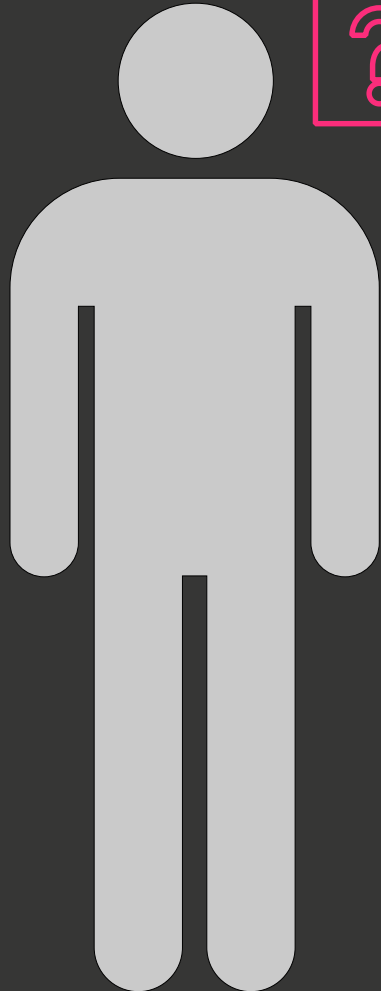


Quick, direct opportunity to tackle barrier

- **2+ Years**
- **Few stakeholders**
- **Proven technology**
- **Proven tools**
- **Lack of information for implementation**



Engine Generator Block Heater



- Outreach engineer
- Local utility white paper “Pump driven block Heaters”
- Custom project proposal at a Casino
- **Hmm.**

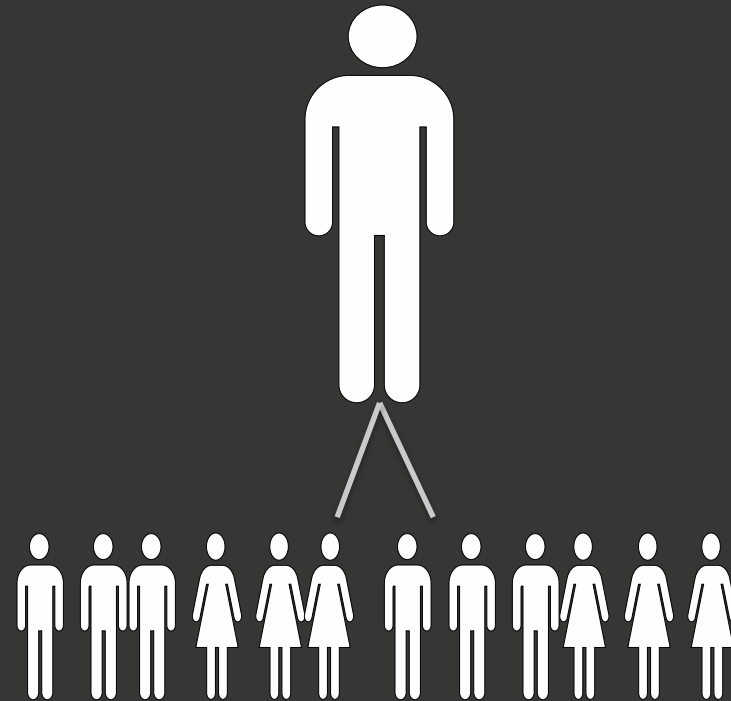
- *How much potential savings are there? Is there consistent reliable savings?*

Engine Generator Block Heater



BPA Field Assessment 2012-2013

- **Technical Assessment of savings**
- **Develop a strategy**
- **Identify non-energy benefits**
- **Understand potential market channels**
- **Very close collaboration**
- **Over 80 installations**
- **Developed installation certification program**



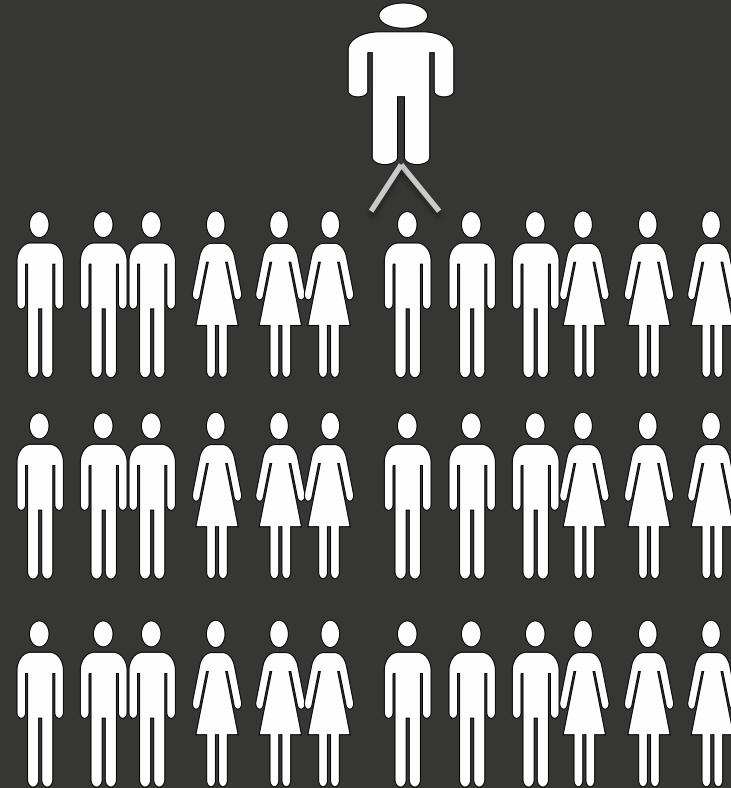
**Custom
to
Broad Application**

Engine Generator Block Heater



Existing Network Provides Opportunity to Scale

- Wholesale electrical distributor deepens its sales channels
 - Existing customers
 - Installers
 - Supply chain
- Experience w conservation program



But wait...there's more

“

As the saying goes, the Stone Age did not end because we ran out of stones; we transitioned to better solutions. The same opportunity lies before us with energy efficiency and clean energy.”

-- Steven Chu

Thank you

Questions

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Q&A, Discussion

