Background

Workshop hosted at Argonne

Sponsored by DOE BTO

April 29-30, 2015

34 Attendees

Government Labs Industry NGOs Academia

Engineering Behavioral Science Policy Marketing Data Analysis
Types of Consumer Change

- **Forced Change**
  - Regulations and Standards

- **Voluntary Change**
  - Stop watering lawn

- **Behavioral Change**
  - Change shower routine
Uji Showerhead

http://ujishower.com/
ShowerStart Thermostatic Valve

http://thinkevolve.com/products/showerstart-tsv/
Characteristics for Behavioral Change

- Access to information on demand
- Active feedback
- Social interactions and peer accountability
- Measurable goals and gamification
- Seamless integration
Barriers to Behavioral Change

- Water is too cheap
- Poor data availability
- High segmentation
- Utility revenues are tied to sales volume
- Low consumer awareness
- Outdated technologies and infrastructure
Research Pathways

Technological
- Improved data collection
- Next-generation appliances
- Leak and defect detection

Enabling Reforms
- Water rate reform
- Regulatory and institutional aggregation
- Integrated water and energy efficiency programs

Behavioral
- Consumer education and communication
- Behavioral science
Improved Data Collection

Next Generation Water Meters

• Plug-and-play
• Real-time
• Wireless communication
• Affordable
• Regulations and Standards

Management Software

• Controls
• Data analysis
• Communication
Next Generation Appliances

Programmable showerheads and faucets
- Unique user temperature and flow profiles

Smart toilets
- Detects how much water to flush

Smart landscaping
- Moisture sensors, weather forecast integration

Distributed water treatment
- Reduce distribution losses

Improved messaging
- Focus on lifestyle benefits
Water Rate Reform

- Higher Rates
  - Consumers

- Increasing Block Structure
  - Encourage efficiency from largest users

- Revenue Decoupling
  - Utility supported conservation programs

- Forward Thinking Investments
  - Those setting rates often have short-term outlook
Communication

Improved Data Delivery
- Intuitive, more frequent home water reports

Water as a Finite Resource
- Fundamental change in public perception

Standardized Metrics
- GPM is not part of public awareness (watts, MPG etc.)

Change Messaging
- “Save Water” too broad, need actionable information
Human Behavior, Sociology and Psychology

Consumer Perception
- Tricks to improve consumer experience

Gameification
- Contests within homes or neighborhoods, with incentives

Limiting Choices
- Too many options leads to inaction

Emotional Connection
- Tie water savings to something tangible that people care about
Questions?

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