

Testing Promising Technologies: A Role for Federal Facilities

Presented to:

Federal Utility Partnership Working Group

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Presented by:

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BPA Energy Efficiency

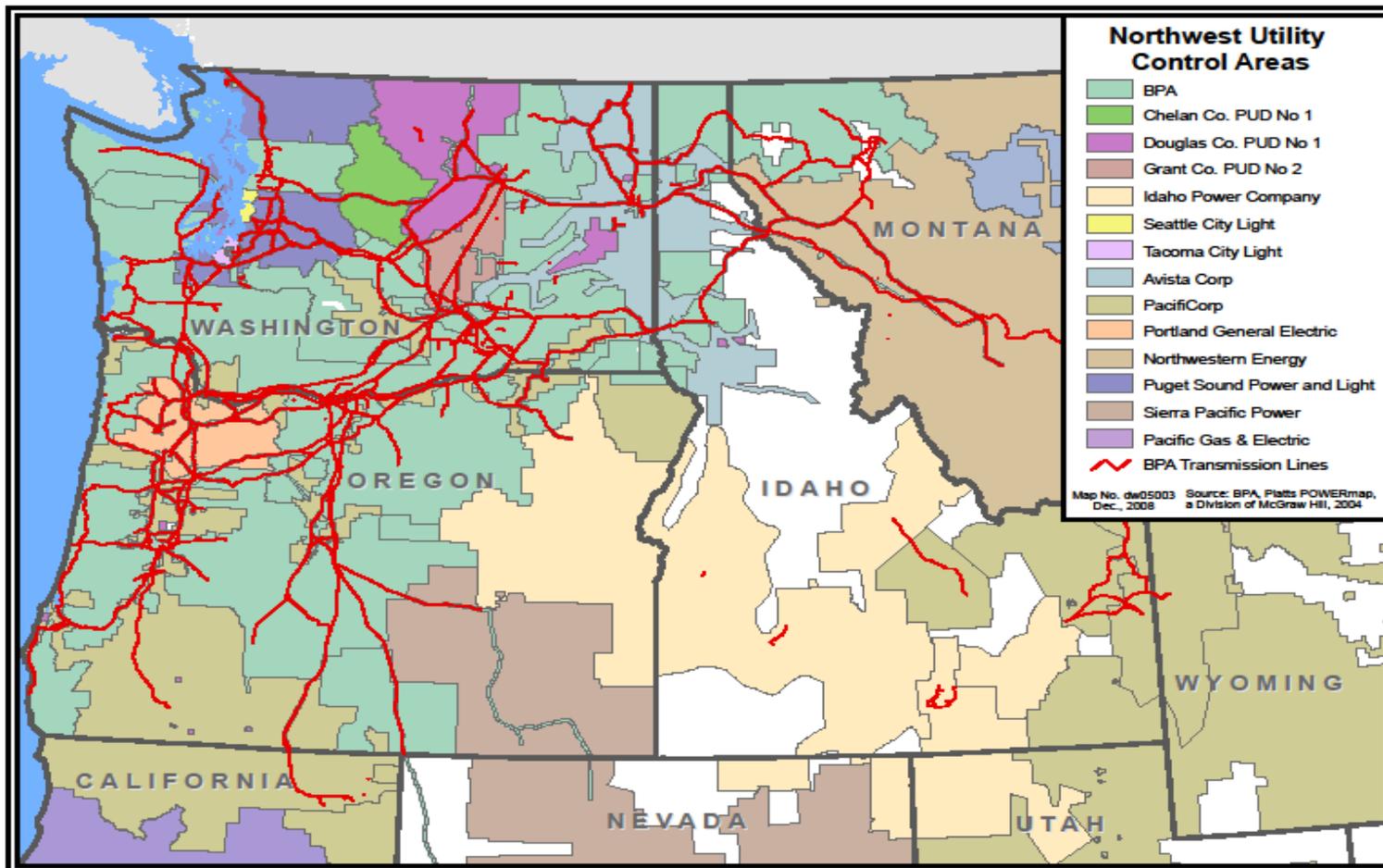
Overview of Presentation

- Overview of BPA's efforts on emerging technologies (E3T)
- Review some technologies
- What BPA provides
- How you can participate

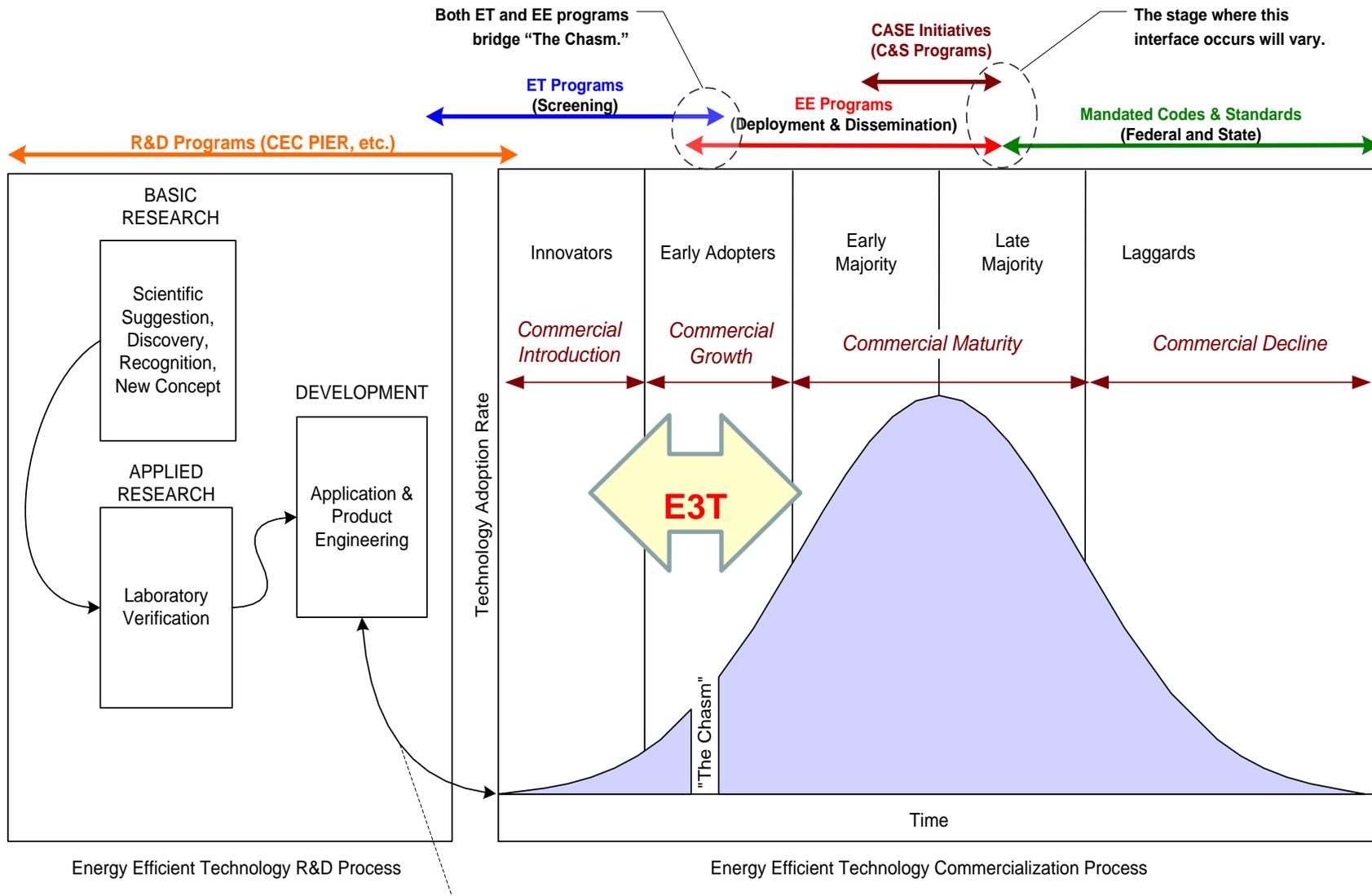
Who is Bonneville...

- Markets and transmits power generated from the Federal Columbia River Power System (FCRPS).
- Serving 140 public utilities (PUDs, Munis, Co-ops, Tribes), 6 IOUs, 7 Federal Agencies
- BPA Energy Efficiency provides customers with a variety of reimbursements and initiatives to help achieve conservation targets
- Emerging Technology group identifies and assesses new technologies (E3T)

BPA region



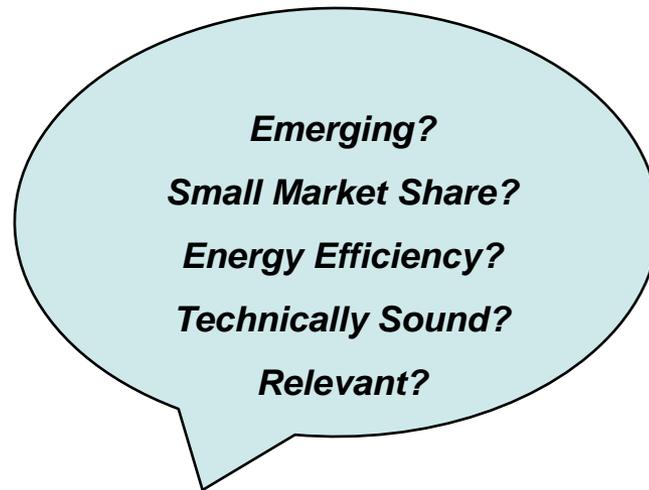
Role of Emerging Technology Programs (PG&E 2005)



BPA's Emerging Technology Criteria

Emerging	Not yet assessed for nor included in BPA programs or measures
Small Market Share	Commercially available with only a small market share in the Northwest Region.
Energy Efficiency	Significant potential to provide quantifiable, reliable, and cost effective electric energy savings for end-use consumers in the Northwest region.
Technically Sound	Reasonable certainty that it will perform as intended.
Relevant	Performance-related features readily identifiable and related to BPA identified program or R&D gaps.

Name that Emerging Technology



Compact Fluorescent Light



Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?

LED street lights



Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?

Packaged Terminal Heat Pump



***Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?***

Ductless Heat Pump (mini-split)



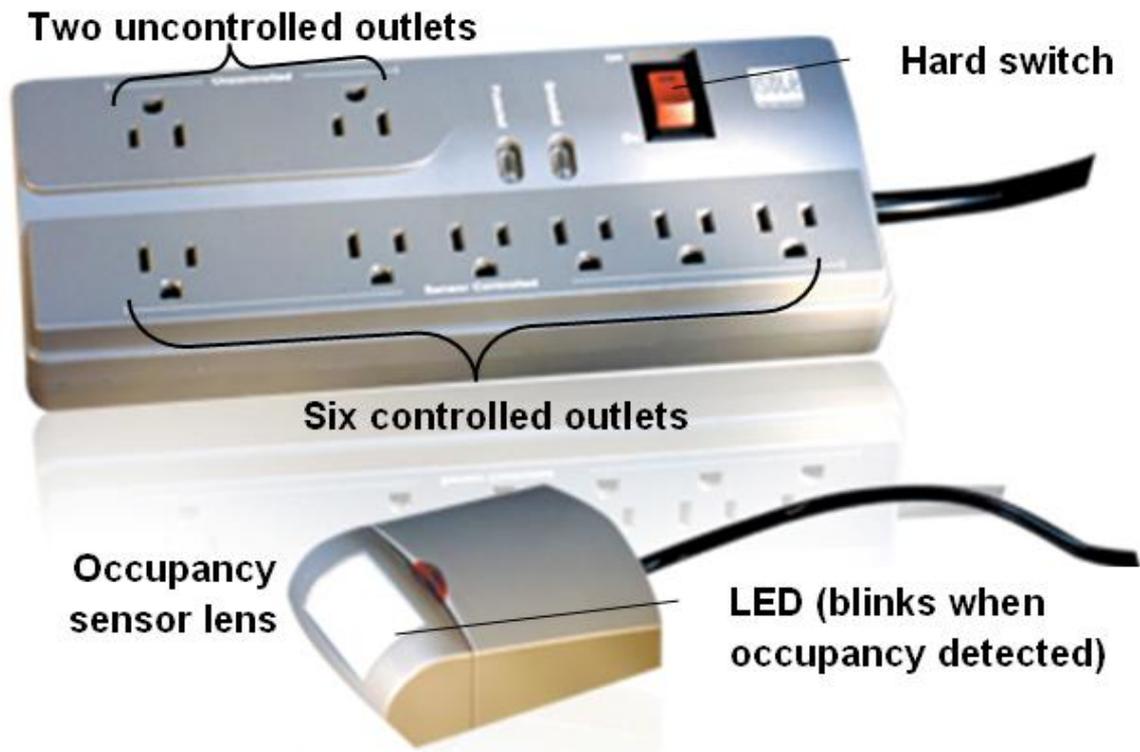
***Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?***

Motor Voltage Controller



Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?

Smart Plug Strips



Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?

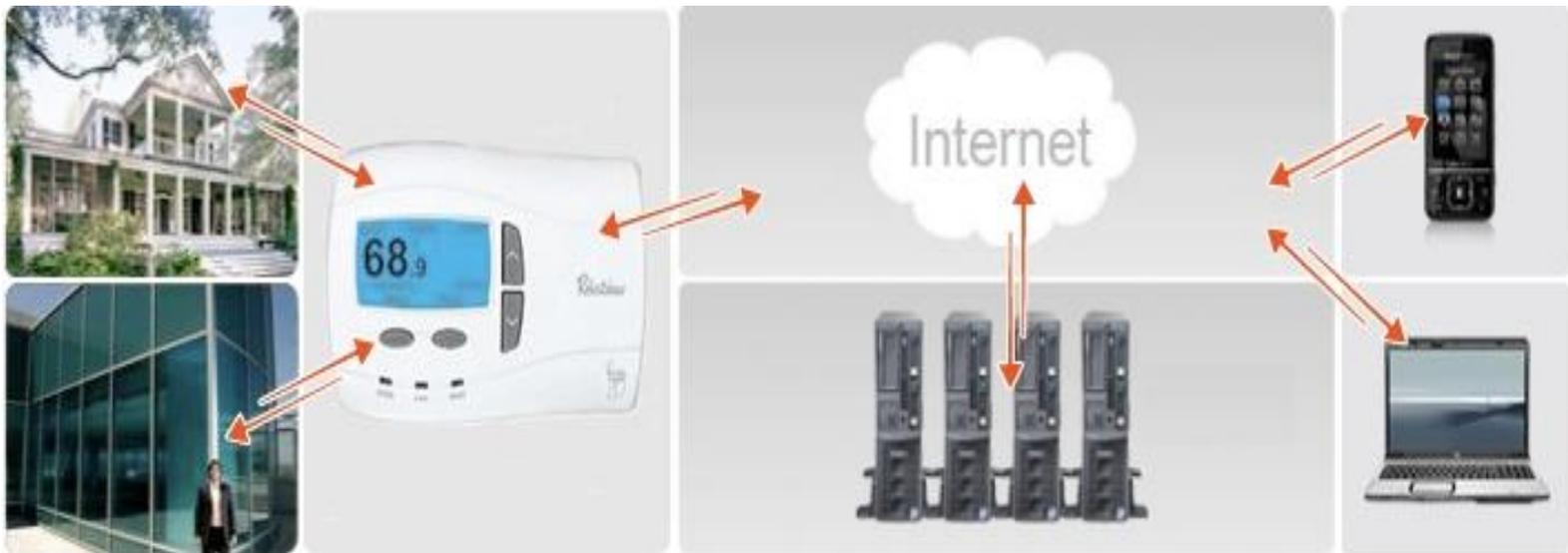
Programmable Thermostat

Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?



Web Enabled Programmable Thermostat

*Emerging?
Small Market Share?
Energy Efficiency?
Technically Sound?
Relevant?*



Name that Emerging Technology

And the winners are...

Current BPA Emerging Technology Assessments



Residential
Heat Pump
Water Heater



Web-Enabled T-stats



LED Down lights



PTHP with
Occupancy Control



Bi-Level Lighting
Controls



LED Street lights



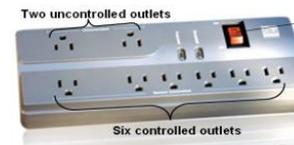
Premium
Demand Controlled
Ventilation



Ductless Heat
Pump



VRF Systems



Smart Plug Strips

More Emerging Technologies of Interest

- Ductless Heat Pumps and Variable Refrigerant Flow systems in:
 - Commercial Applications – Office, retail,
 - Cold Climate Applications
 - Multifamily
- LED Streetlights
- Bi Level w/ Lighting Occupancy Sensors for
 - Parking Lot
 - Parking Garage
 - Stairwell and Corridors and Walkways
- Municipal Water Control Optimization
- Air Side Economizers for Data Centers

Looking for Good Assessment Projects

- ✓ Address a gap in current knowledge
- ✓ Answer a specific research question
- ✓ Have a good cost/benefit/risk balance
- ✓ Support from advocates and partners

Technology Field Tests:

Validate and add findings for NW applications

- ❖ Provide NW test installation
- ❖ Quantify energy savings
- ❖ Document occupant acceptance
- ❖ Produce case studies

Technology Demonstration Pilots: *Scaling Up Promising Technologies*

- ❖ Achieve pilot-scale savings,
and
- ❖ Provide data to support or confirm savings potential across BPA region.
- ❖ Determine best practices for implementation and program delivery.

How Federal Facility Managers Can Help

- ❑ Identifying emerging technologies
- ❑ Proposing ET assessment projects
- ❑ Hosting field tests and participate in pilots
- ❑ Participating in Technical Advisory Groups
- ❑ Sharing your stories: “*been there, done that*”

Thank You!

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BPA reports and studies can be found at

http://www.bpa.gov/energy/n/emerging_technology/projects.cfm