



## Maximizing Energy Efficiency

CPUC Market Transformation Indicator Workshop

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Evaluation

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NORTHWEST ENERGY EFFICIENCY ALLIANCE

# Today's Talk



About Us – a quick  
introduction to NEEA

How does Market  
Transformation fit in the  
NW

Market Transformation  
Indicators –Challenges

Lesson Learned

# About NEEA

## History and Context

### 1980 Northwest Power and Conservation Planning Act

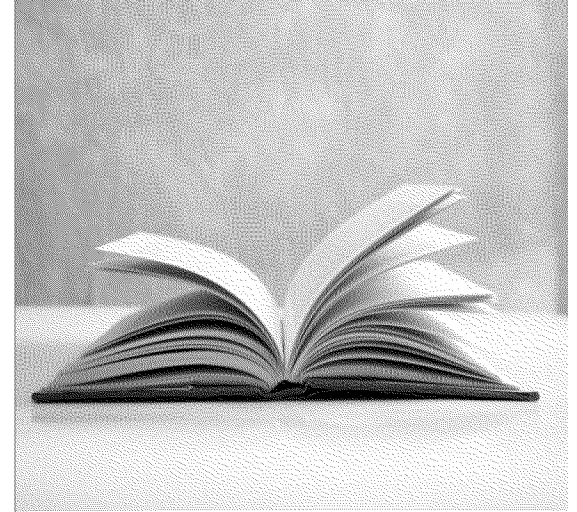
- Authorized ID, OR, MT and WA to form an “interstate compact” (Northwest Power & Conservation Council or “The Council”)
- Council to develop an energy resource plan every 5 years
  - Least cost mix of resources
  - Conservation (energy efficiency) the highest priority resource
  - Public involvement in planning process
  - 20-year planning horizon



# About NEEA

## History and Context

- NEEA established in 1996 as a public interest and utility collaborative
- Industry and region faced deregulation and divestment of energy efficiency programs
- Stakeholders recognized inherent value in market-based and aggregated regional approach as most cost-effective way to accomplish energy efficiency programs

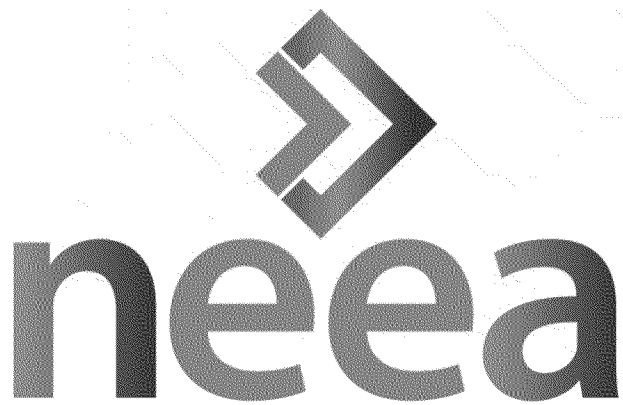


# About NEEA: Founding Model Principles

- Voluntary deal based on perceived value
- Upfront ,multi-year funding (5 years) based on approved Business Plan
- Exchange of support for regional value
- Funded by all NW utilities; a rarity
- Inclusive, interactive, collaborative: Brought IOUs and Publics together for first time. Supported by the 4 state governors. Recommended by NWPCC.
- Autonomous and accountable. Board selects Executive Director only



# About NEEA Today



## Funders

- \$189M for 2010-2014
- Bonneville Power Administration, on behalf of more than 100 utilities
- Energy Trust of Oregon
- Six public and five investor-owned utilities

## Team Breadth

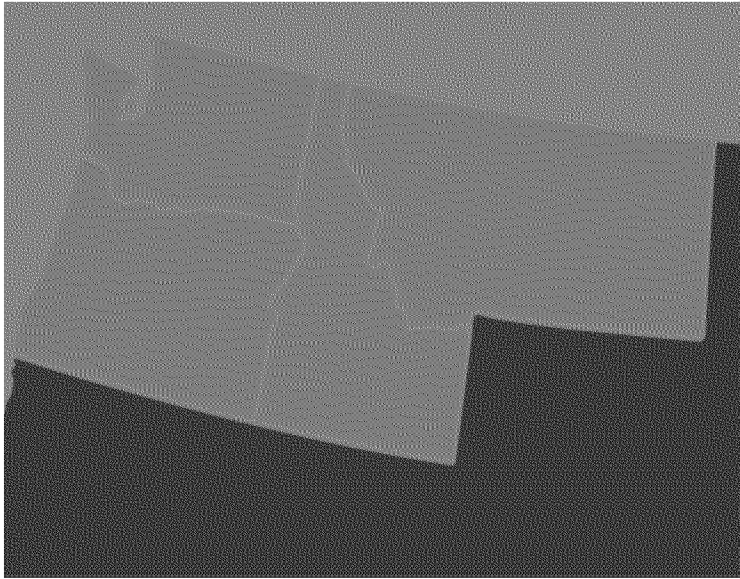
- 59 staff with deep expertise
- Strong market partner & contractor base
- Advisory committees, regional work groups

## Board Governance

- Funding utilities (13 Primary and 130 secondary)
- Alternating state representation: 2 year terms for WA/ID, OR/WA
- Public interest representative



# NEEA's Unique Value



Accelerates market adoption  
of energy-efficient products,  
services and practices

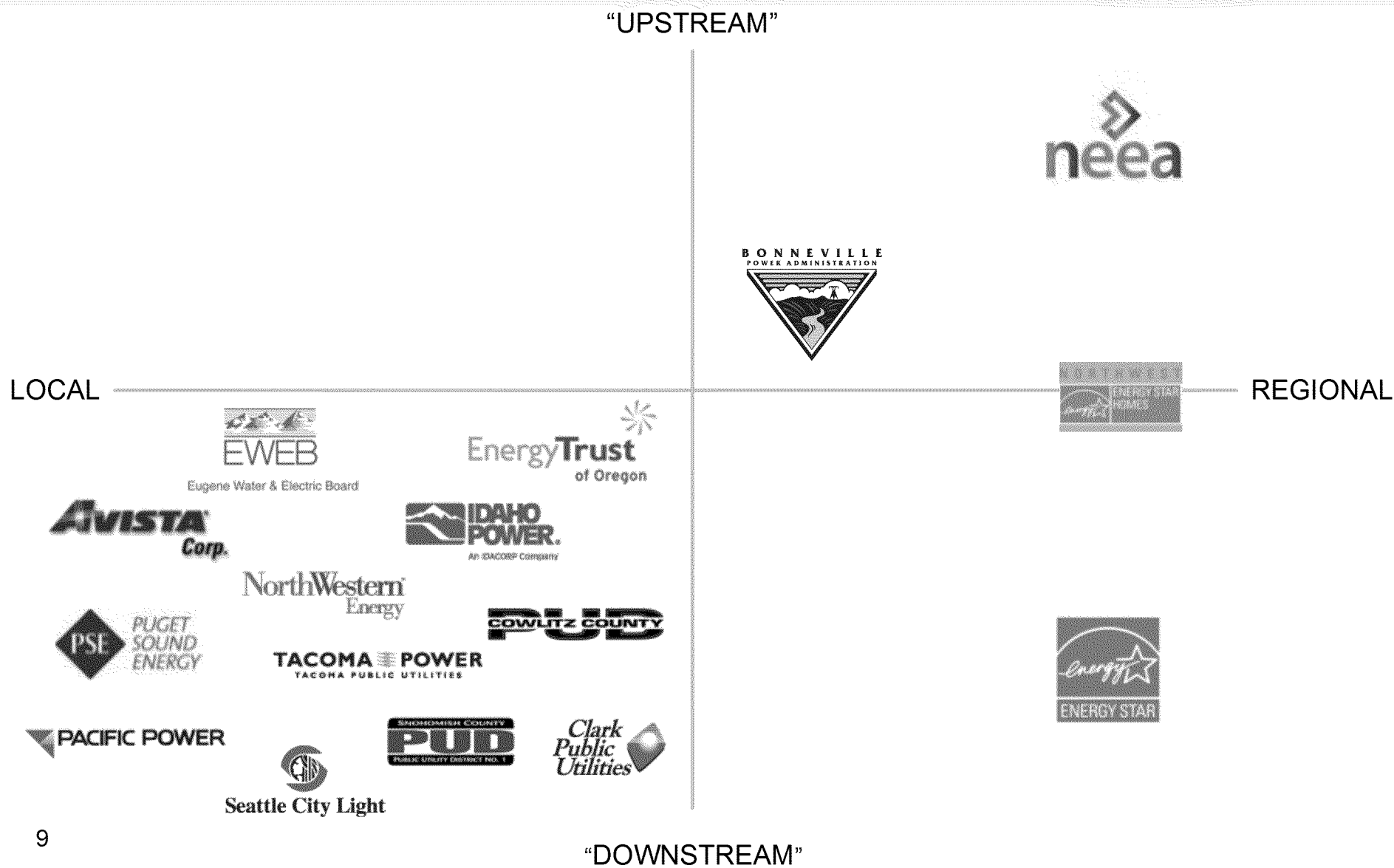
Leverages regional advantage  
through shared resources,  
economies of scale, reduced risk

Fills the energy efficiency pipeline,  
championing innovation, driving  
emerging technologies

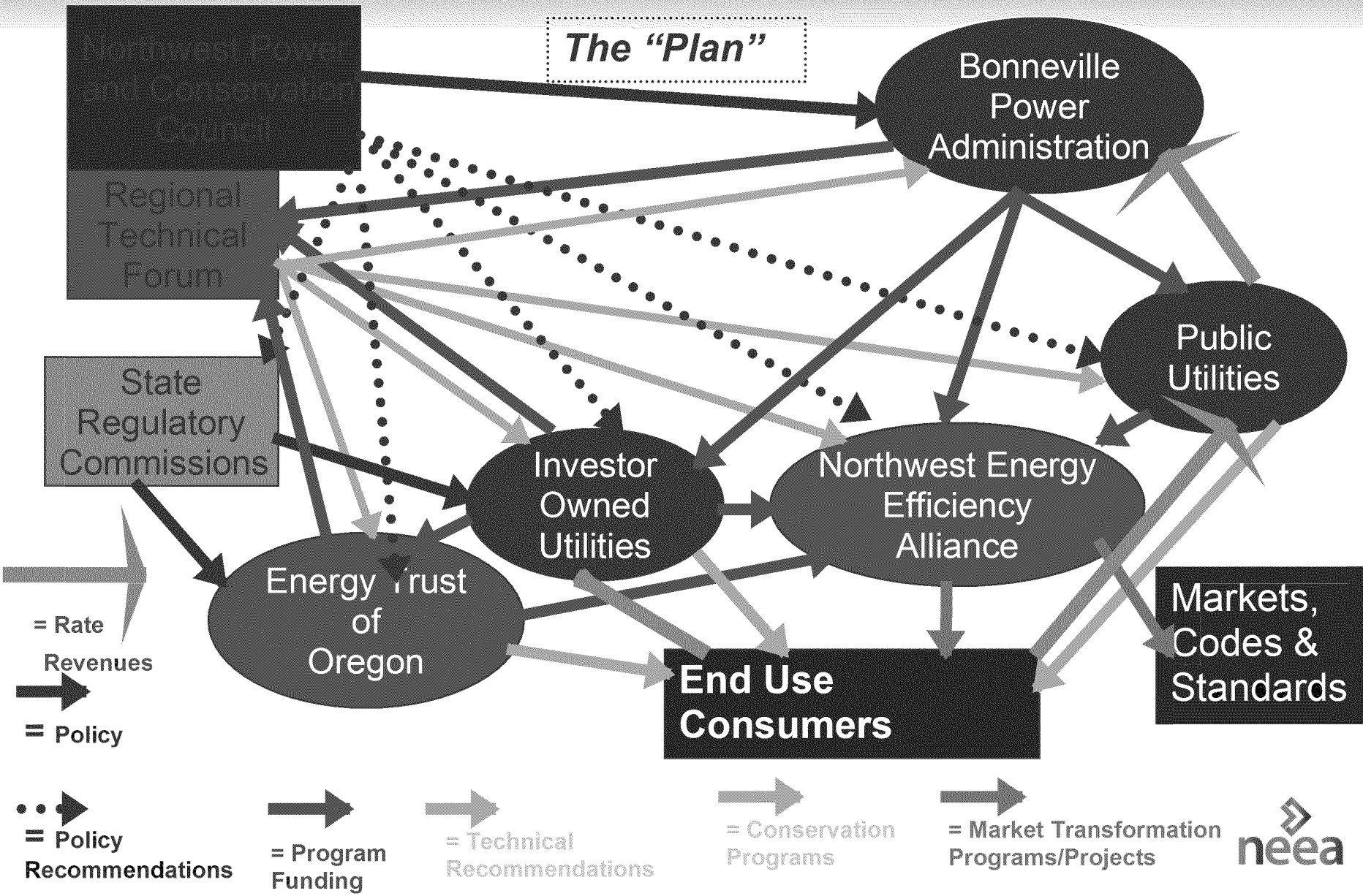
# HOW DOES MARKET TRANSFORMATION FIT IN THE NW?



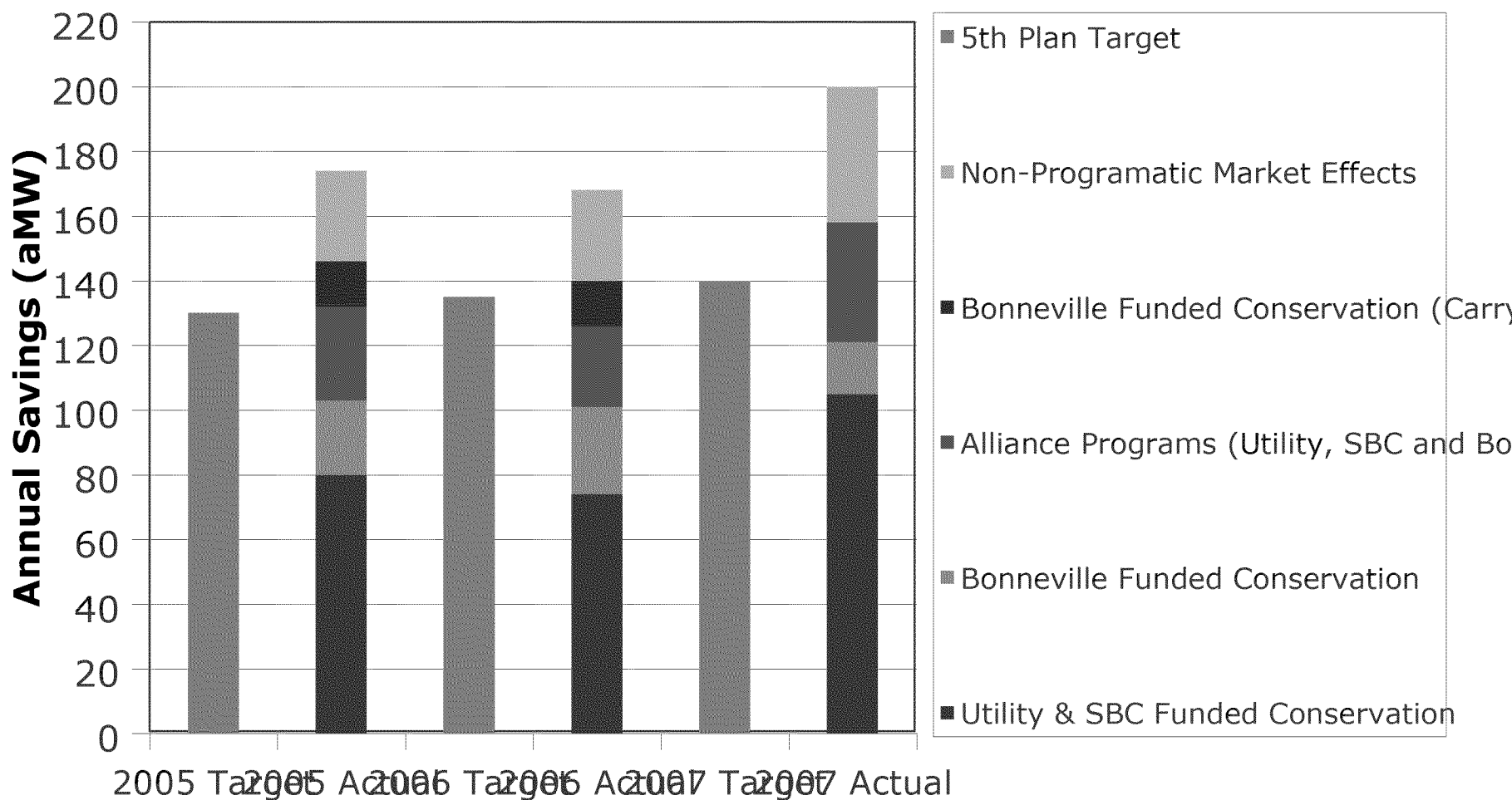
# NEEA's Role in Regional Partnership



# How it all fits together



# Previous Cycle MT Savings in the Northwest



slide 11

# MARKET TRANSFORMATION INDICATORS – CHALLENGES



# Market Transformation Indicators

- Challenge #1: choosing the right indicators
  - A comparison to Resource Acquisition
  - Market Transformation Theory
  - Expressed in terms of Supply and Demand
- Challenge #2: changing indicators over time
- Challenge #3: misleading indicators
- Examples:
  - Ductless Heat Pumps
  - Energy Star Homes
  - Ultra-High Efficiency Clothes Washers



# Challenge #1: choose the right indicator

- A comparison to Resource Acquisition
- Market Transformation Theory
- Expressed in terms of Supply and Demand
- Business Results vs. Market Transformation

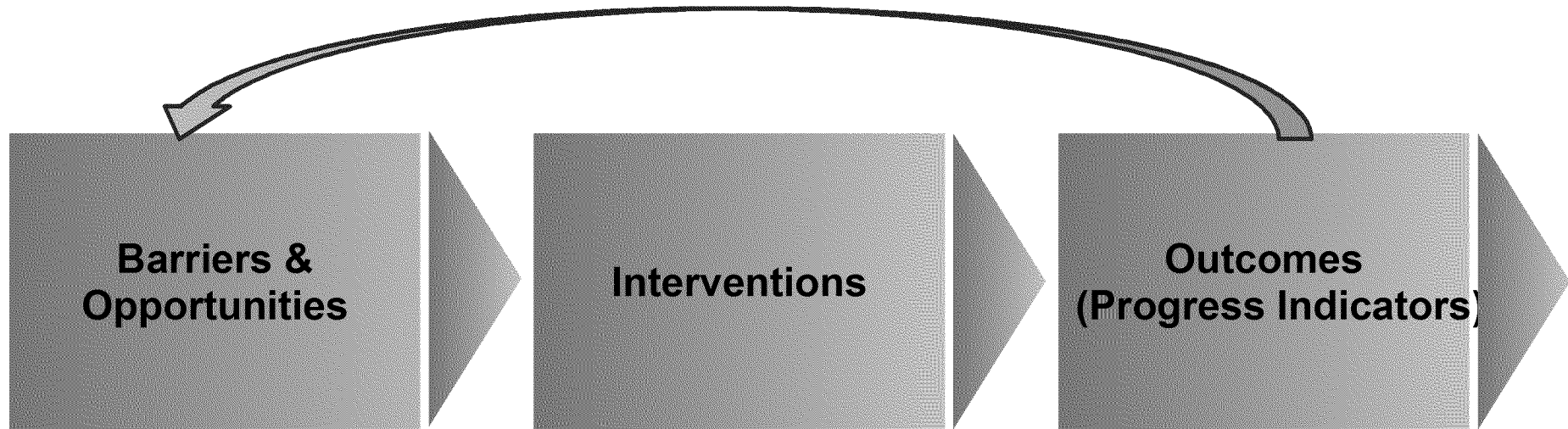


# MT and RA Program Evaluation

	<b>Resource Acquisition</b>	<b>Market Transformation</b>
<b>Approach</b>	Save energy via customer participation	Save energy by mobilizing widespread market adoption
<b>End-User Characteristics</b>	Participants/ enrollees are known & recruited directly	Adopters are not known (aside from early partners/ demonstrations)
<b>Savings Estimation</b>	Summation of site-by-site savings	“Deemed”/ average savings value must be calculated in order to project savings to market
<b>Implications</b>	<ul style="list-style-type: none"> <li>▪ All savings based on verifiable results</li> <li>▪ Success of program judged on short-term results, and easily determined.</li> <li>▪ No logic model needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Savings based on market projections using accepted &amp; replicable techniques</li> <li>▪ Success of initiative based on long-term outcomes.</li> <li>▪ Theory of change with specific market progress indicators required to validate progress</li> </ul>

# Market Transformation Theory

## Market Transformation Indicators



- Which barriers are we trying to remove/overcome?
- What are the points of market leverage?
- What are other market opportunities?

- What are the interventions you believe will:
  - overcome those barriers?
  - exploit those points leverage and opportunities?

- How will we know we're making progress toward our long-term objective?
- What do we need to observe to be confident that the MT theory and strategy are sound?



# MTI's should relate to market barriers

## Supply

- Lack of Product
- Product Quality/Performance
- Lack of Product Availability
- Lack of Market Capacity/Capability
- Perceived Lack of Value for Cost
- Regulation, Code or Standard

## Demand

- Lack of Awareness of Product
- Perceived Lack of Value for Price
- Lack of Information about Product
- Lack of Product Differentiation
- Price
- Lack of Financing



# The Language of Business Results

11.5% of new homes certified Northwest ENERGY STAR

Hospitals representing 30% of beds have a SEMP

20% energy intensity reduction in food processing plants

60,000 desktop computers with 80 PLUS power supplies

\$.01 per kwh

4 aMW in 2010



# The Language of Market Transformation

Worked with manufacturers to increase market availability of DHPs and the capability of contractors to sell and install

Aggregated the collective market power of the NW to increase availability of higher efficiency flat-screen TVs. Influenced California to adopt a higher efficiency standard for retailer incentive program

Partnered with national and local retailers to increase promotion and awareness of ultra-efficient flat-screen TVs via training and promotional tools

Influenced EPA to incorporate 80 PLUS efficiency for power supplies in new ENERGY STAR specification

Partnered with NWFPA to promote and expand industry commitment to continuous energy improvement

Partnered with AIA to incorporate integrated design into training curriculum/path to 2030 challenge





# Challenge #2: changing indicators over time

## Early Outcomes (1 to 2 Years)

- Initial product availability
- Increased awareness and knowledge
- Introduction of new capacity/capability

## Intermediate Outcomes (3 to 5 Years)

- Increased perceived value for cost/price

## Later Outcomes

- Increased market share leads to lowered price
- Increased market share leads to wide spread capacity/capability
- Entry of new products and market players



# Challenge #3: Market Transformation Indicators

. . . that can be misleading:

- Awareness
  - as a long-term indicator
- Energy Savings
  - as an indicator of early market change
- Market Share
  - as an expression of initiative influence


(Should be put into proper context using a logic model)

# Examples to Consider: DHPs

<b>Business Results</b>	<ul style="list-style-type: none"><li>▪ Installed 3,491 units by end of 2009 in 59 utility territories, exceeding goal of 2,500 units</li></ul>
<b>Market Transformation</b>	<ul style="list-style-type: none"><li>▪ Expanded market capability by training 592 HVAC contractors; 292 contractors installed units in 2009.</li><li>▪ Partnered with 59 utilities to exceed regional goal of 2,500 DHP installations.</li><li>▪ Utility incentive programs together with NEEA's work to increase product availability and contractor training resulted in 3,491 installations.</li></ul>



# Examples to Consider: ENERGY STAR Homes

<b>Business Results</b>	<ul style="list-style-type: none"><li>▪ Ended 2009 at 11.5% certified homes in region due to the effect of rapidly advancing codes. Actual market share is 34% of new homes built at original standard.</li><li>▪ Secured two additional NW builders with expected additional 1.5% impact in 2010.</li></ul>
<b>Market Transformation</b>	<ul style="list-style-type: none"><li>▪ Worked with EPA to approve an innovative NW-specific ENERGY STAR standard—15% above codes.</li><li>▪ Delivered training and technical support to 19% of the region's builders that increased market capability to build energy ES homes.</li><li>▪ Developed regional marketing campaign in partnership with utilities that helped increase consumer awareness of ES homes from 19% to 51%</li><li>▪ Participated in codes adoption process to influence OR and WA adoption of new codes similar to the NW ES standard.</li><li>▪ Utility incentive programs together with NEEA's work to increase consumer demand and builder capability has resulted in 11.5% market share of ES-certified homes and 34% of homes built to original NW standard.</li></ul> 

# LESSONS LEARNED



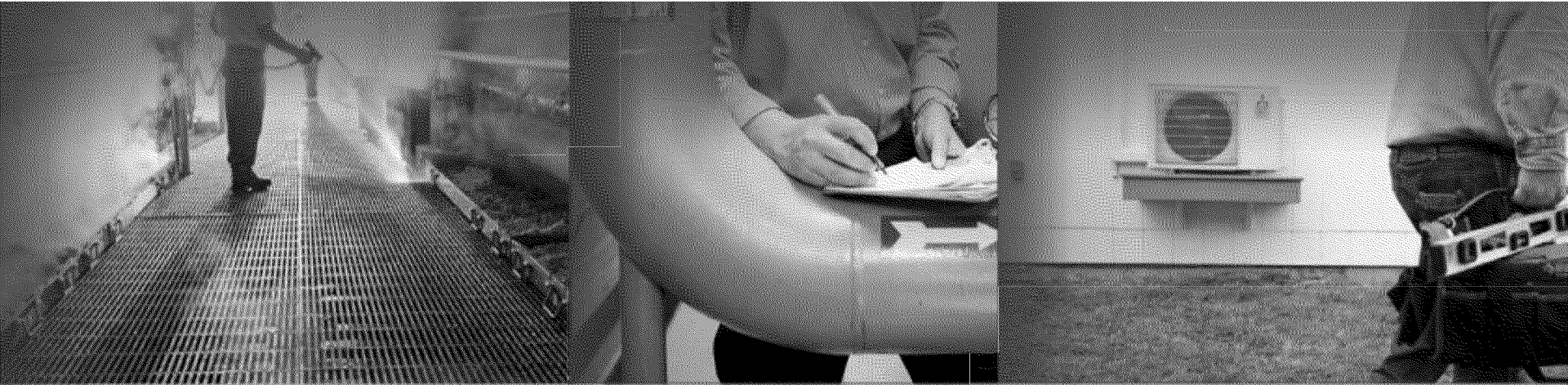
# NEEA's "difference"

Define the "difference" you intend to make before you develop MTIs

- Your difference should relate to market barriers that you intend to remove

The "difference" will define your baseline and your tracking requirements

- Once you identify the market barriers that you intend to remove, the next step is to plan for the data collection necessary to compare actual with intended outcomes



Questions or Comments

Thank You!

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# Example: Ultra-High Efficiency Clothes Washers

## Long-Term Objective:

Increase market share to 30% of clothes washers with MEF  $\geq 1.8$

## Market Assessment

<b>Market Barriers</b>	<ul style="list-style-type: none"><li>▪ Limited availability</li><li>▪ Higher price</li><li>▪ Low consumer awareness</li><li>▪ Low salesperson awareness</li></ul>
<b>Market Leverage Points</b>	<ul style="list-style-type: none"><li>▪ ENERGY STAR partner network</li><li>▪ Manufacturers &amp; retailers</li><li>▪ CEE</li><li>▪ Utility incentive programs</li><li>▪ State energy offices</li></ul>
<b>Other Opportunities</b>	<ul style="list-style-type: none"><li>▪ Upcoming ENERGY STAR spec revision</li><li>▪ Upcoming DOE federal standard revision</li></ul>

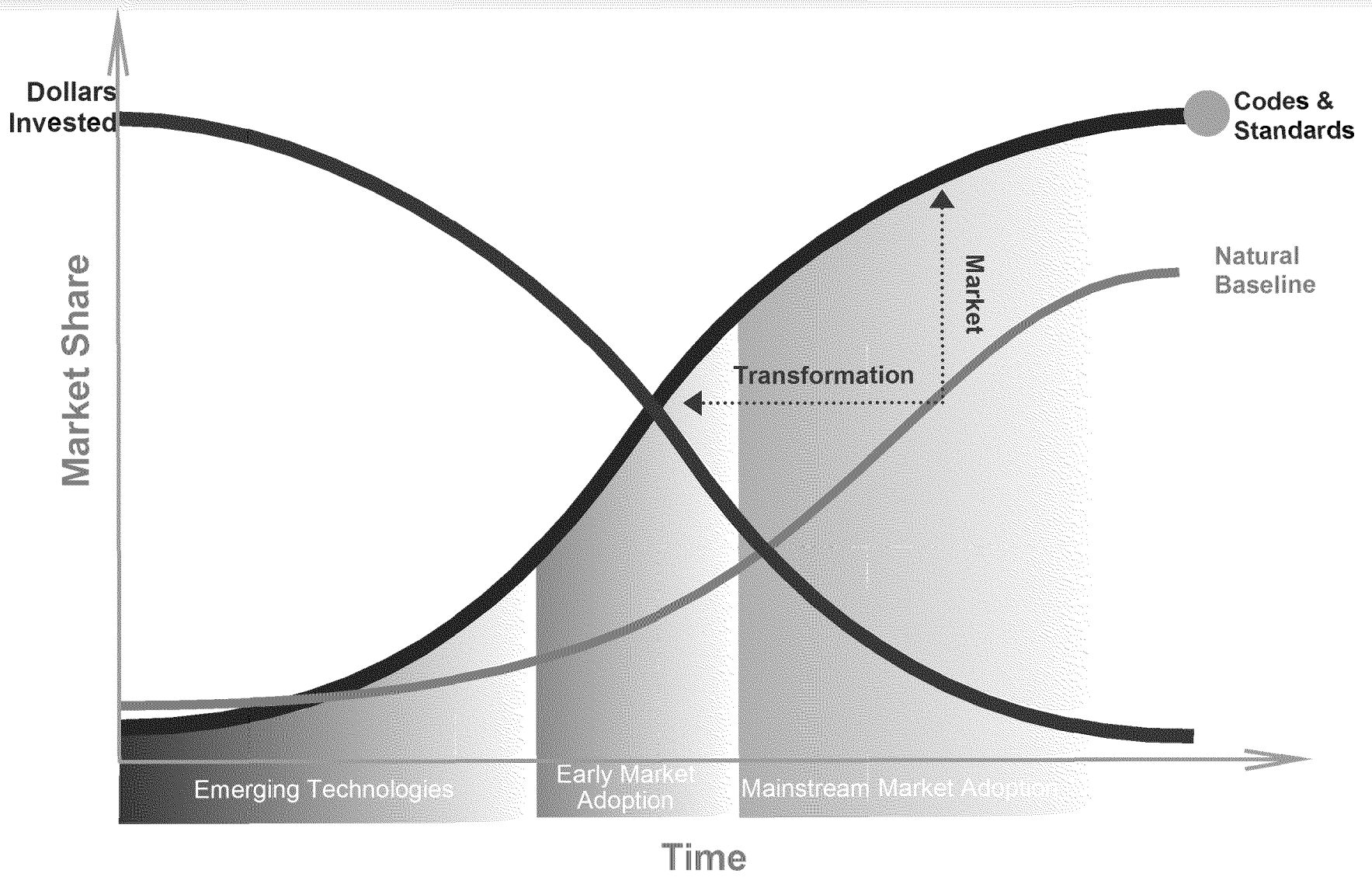


# Example: Ultra-High Efficiency Clothes Washers

<b>Barriers &amp; Opportunities</b>	<b>Interventions</b>	<b>Outcomes (Progress Indicators)</b>
<ul style="list-style-type: none"> <li>▪ Limited product availability</li> <li>▪ Price</li> <li>▪ Consumer Perceptions</li> <li>▪ Low consumer and salesperson awareness of benefits</li> <li>▪ CEE voluntary standards</li> <li>▪ Upcoming ENERGY STAR spec revision</li> <li>▪ Utility programs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Build manufacturer relationships</li> <li>▪ Retailer program                             <ul style="list-style-type: none"> <li>▪ Sales training</li> <li>▪ POP materials</li> </ul> </li> <li>▪ Coordinate with utilities—tiered incentive program (Double Your Savings)</li> <li>▪ Work with DOE to influence next ES spec</li> </ul>	<ul style="list-style-type: none"> <li>▪ Next ENERGY STAR spec increased to 1.8 MEF</li> <li>▪ Increase “floor space” of Ultra-High Efficiency Clothes Washers to X</li> <li>▪ Increase ability of sales people to recite benefits of UHE clothes washers</li> <li>▪ Increase consumer awareness of benefits</li> <li>▪ Lower price differential between efficient and non-efficient units</li> </ul>



# How We Work



# Moving Markets: Clothes Washers

