



EM&V: Evaluating Market Transformation Programs

Rob Russell
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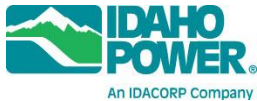
Vision and Mission



Vision: Energy efficiency is a cornerstone of a vibrant sustainable Northwest.

Mission: Mobilize the Northwest to become increasingly energy efficient for a sustainable future.

Fast Facts



Funding

- ~\$192M from 2010-2014
- Bonneville Power Administration (on behalf of ~130 publics)
- Public (Direct Publics): 6
- IOUs: 5
- Energy Trust of Oregon

Board Oversight and Supporters

- State governments
- Energy industry representatives
- Public interest groups

Team

- Deep bench of expertise
- 49 full-time staff
- National and local partners
- Extensive contractor base

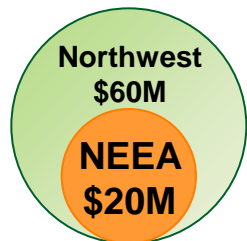
Results

- 1997-2008 – 264 aMW netted
- Enough to power cities of Spokane and Tacoma each year

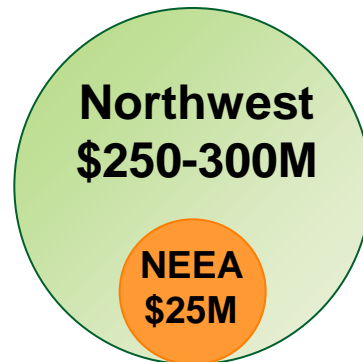
Mission

- Mobilize the Northwest to become increasingly energy efficient for a sustainable future

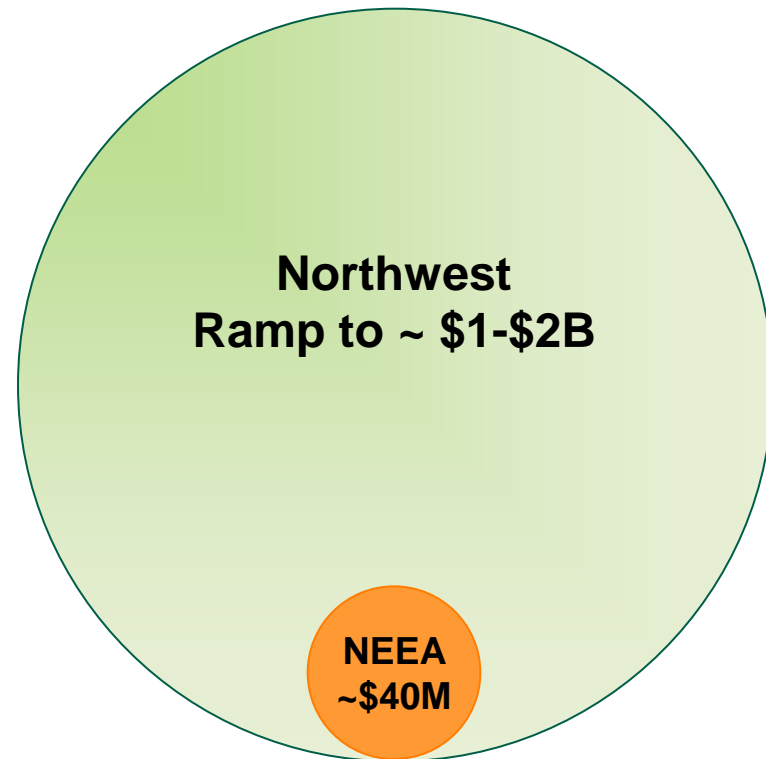
Annual Northwest Energy Efficiency Investment



1995
Deregulation

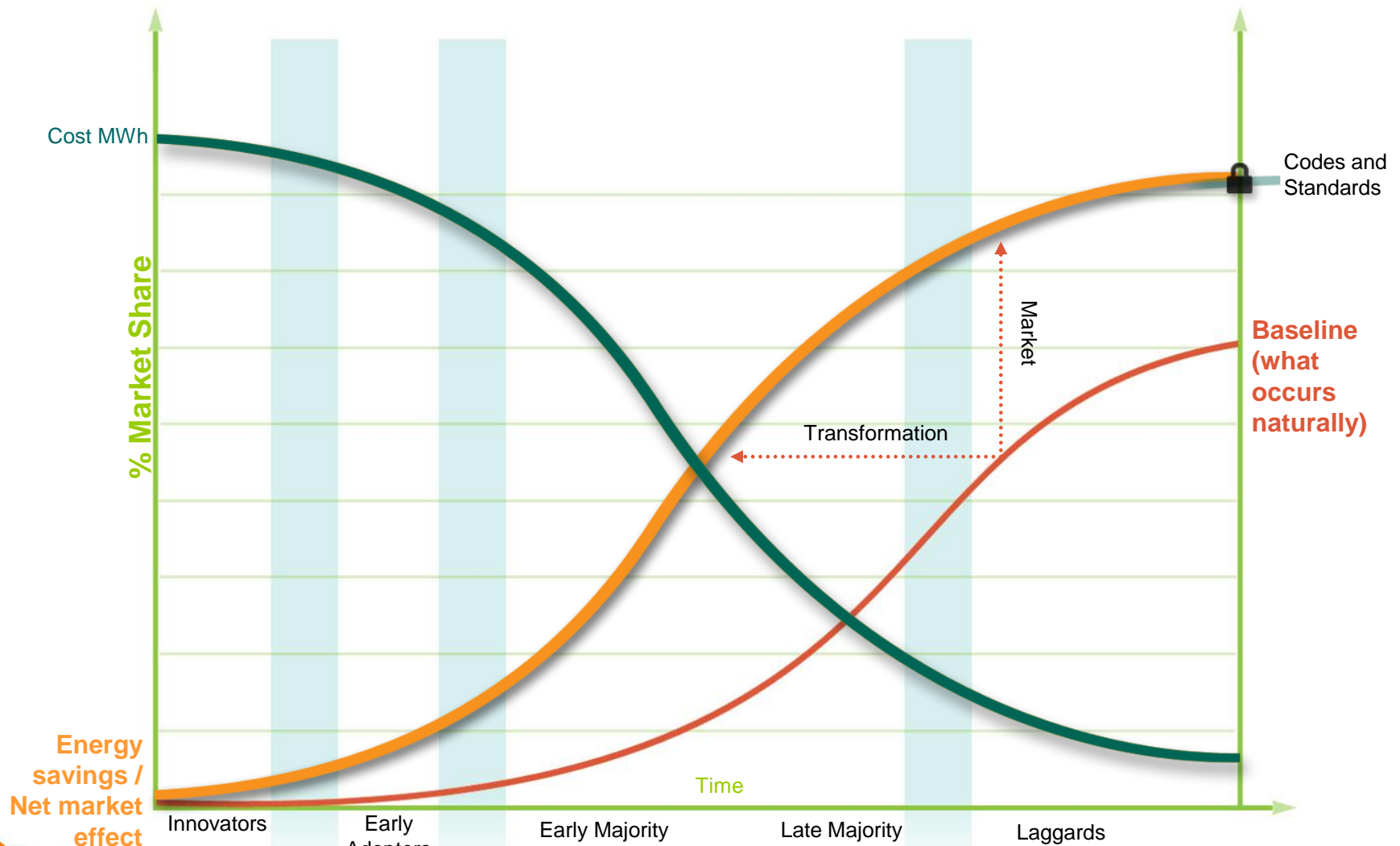


2005-2009
Codes and standards accelerate
Climate change awareness



2010-2014
Economic Challenge
Climate Change
Increased EE Investment and
Awareness

Diffusion curve: market adoption



The Goal of Evaluation:

Provide unbiased, independent, empirically-based information to decision-makers.

Market Transformation and Resource Acquisition

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

Northwest Accomplishments



1997: Efficient washers. 50% market share today - highest in the nation.



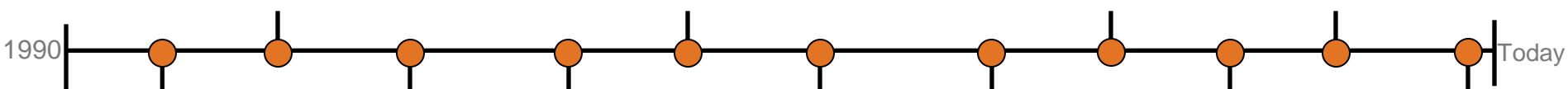
2001: Market share for ENERGY STAR windows hits 75%.



BETTERBRICKS
Bottom line thinking on energy.

2005: BetterBricks healthcare focus – today 30% of region's beds have adopted a SEMP.

2008: NW Food processing industry commits to 50% reduction goal



1991: Design labs concept launched

1998: BacGen reduces wastewater treatment energy use by up to 50%.

2000: VFD cold storage fans reduce energy use by 61-86%.

2002: 80 PLUS. computer power supplies could save NW 8.5 million kWh annually.



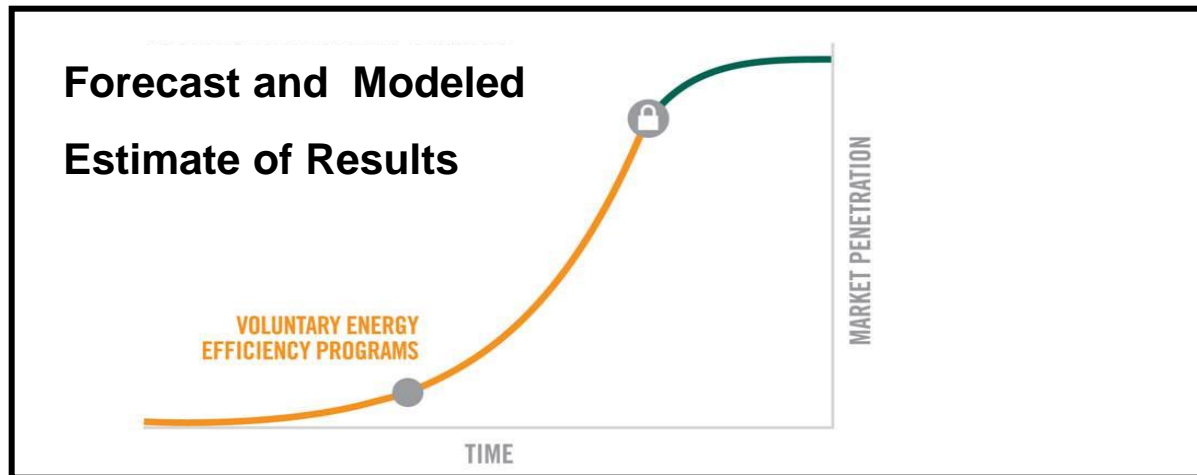
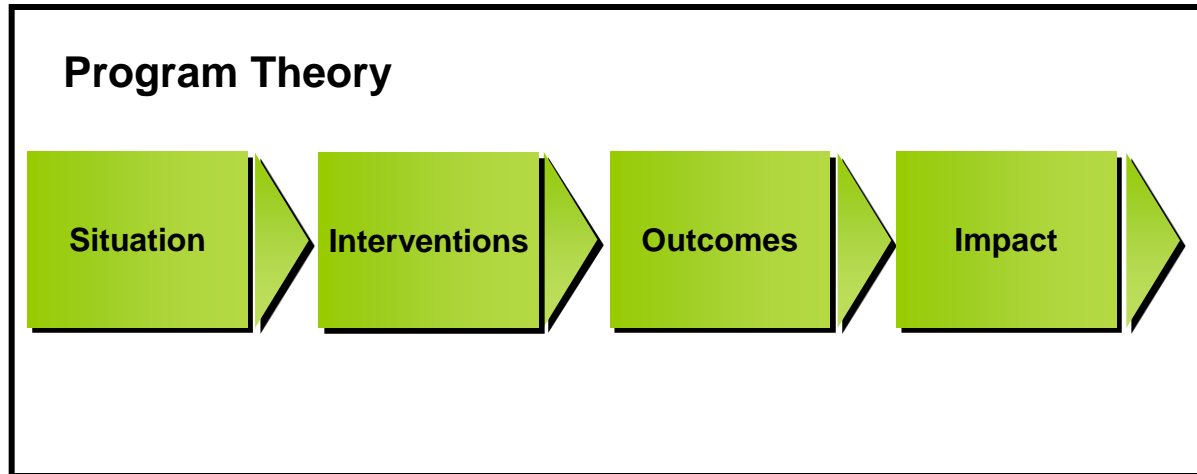
2004: Northwest ENERGY STAR new homes spec – 15% more efficient than code.

2007: CFL sales top 18 million



2009: Ductless heat pump pilot begins

Two Areas of Focus



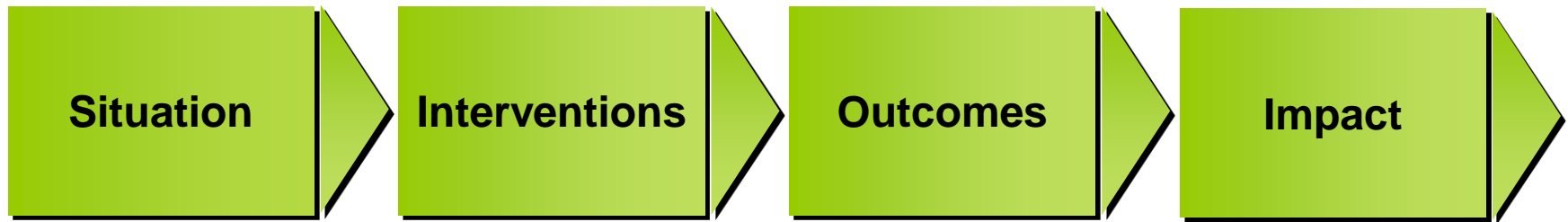
Evaluation



Market Research & Evaluation can also support market strategy and tactics

Evaluation Design Follows Program Theory

Program Theory

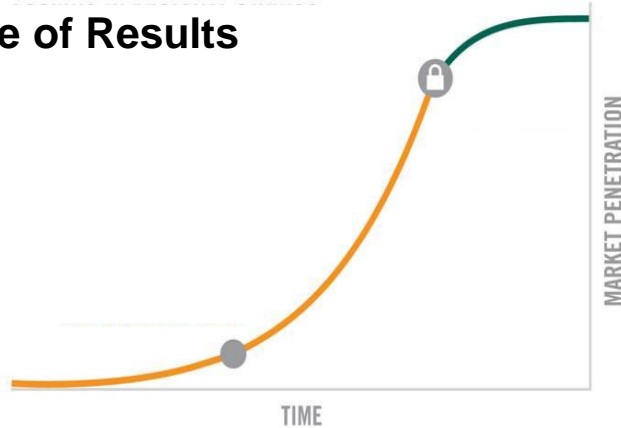


Evaluation Questions

- What is the market situation? Has it changed?
- What is market progress (per agreed upon indicators)?
- If progress lags expectations, why?
- Is the theory valid?
- If not, why not? (Insights for how to adapt)

2nd Area of Focus: Model Assumptions

Forecast and Modeled Estimate of Results



aMW

Evaluation Questions:

Are the assumptions reasonable/correct?

- Baseline
- Market penetration/growth
- Savings per “unit”
- Other C/E factors

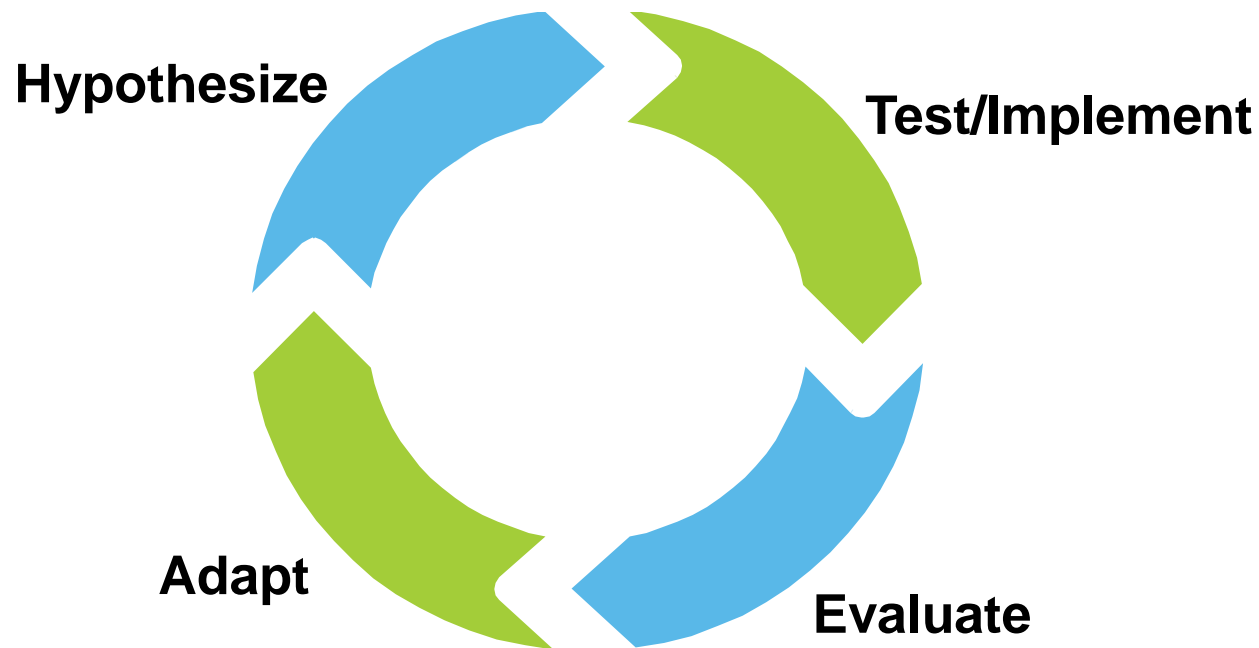


**Validates
Assumptions**

Data Collection Techniques Depend on Learning Objectives

Data Collection Technique	Mkt Char.	Mkt Penetration	Availability, Price	Barriers	Messaging	Causality/ Behavior Change from Intervention	Savings per Unit
On-site Data Collection			●				●
Quantitative Market Surveys	●	●	●		●	●	
Interviews	●		●	●	●	●	
Focus Groups				●	●		
Marketing Collateral/Advertising			●			●	
Automated Energy Consumption Data							●
Energy Consumption Metering							●
Self-reported data (to be validated)							●
Secondary Sources	●	●	●	●	●		●

Evaluation Critical for Adaptive Management (a.k.a., Learning Organization; Continuous Improvement)



Final Thoughts

- How much does it cost?
 - What do you want to know?
 - How certain do you want to be?
- What is the role of an evaluator?
 - Skeptic . . .
 - . . . Not a Cynic
 - Analyst . . .
 - . . . Not an Auditor
 - Data Collector . . .
 - . . . Not a Detective

Thank You

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