



Cost-effectiveness & Evaluation Advisory Committee Meeting

Northwest Energy Efficiency Alliance

February 28, 2023

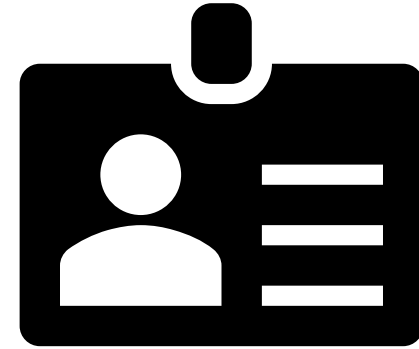
CLASSIFICATION LEVEL: PUBLIC













Introductions

- Name
- Organization
- Question(s) for today?





Agenda

9:00am	Welcome/Agenda Review
9:15	Market Transformation Framework  
9:45	Market Transformation Savings  
10:15	BREAK
10:25	Market Transformation Costs and Benefits  
10:55	MRE Update  
11:20	Wrap Up



Why are we here again?

CEAC Charter

Responsibilities

1. Review and advise regarding NEEA cost-effectiveness and savings information to inform annual reporting.
2. Review and advise regarding market transformation cost and savings measurement and estimation methods.
3. Review evaluation findings that affect cost and savings information to inform annual reporting.
4. Work with your organization to provide NEEA staff with relevant incentive data for regional tracking and reporting purposes.
5. Review and advise regarding new market research and evaluation methodologies.



Efficiency Exchange 2023 - Registration Now Open



EFX23 Early Bird Registration

February 1 – March 28

neea.org/efx23-registration

EFX23 Hybrid Conference

May 2-3 in Portland

In-person + Virtual

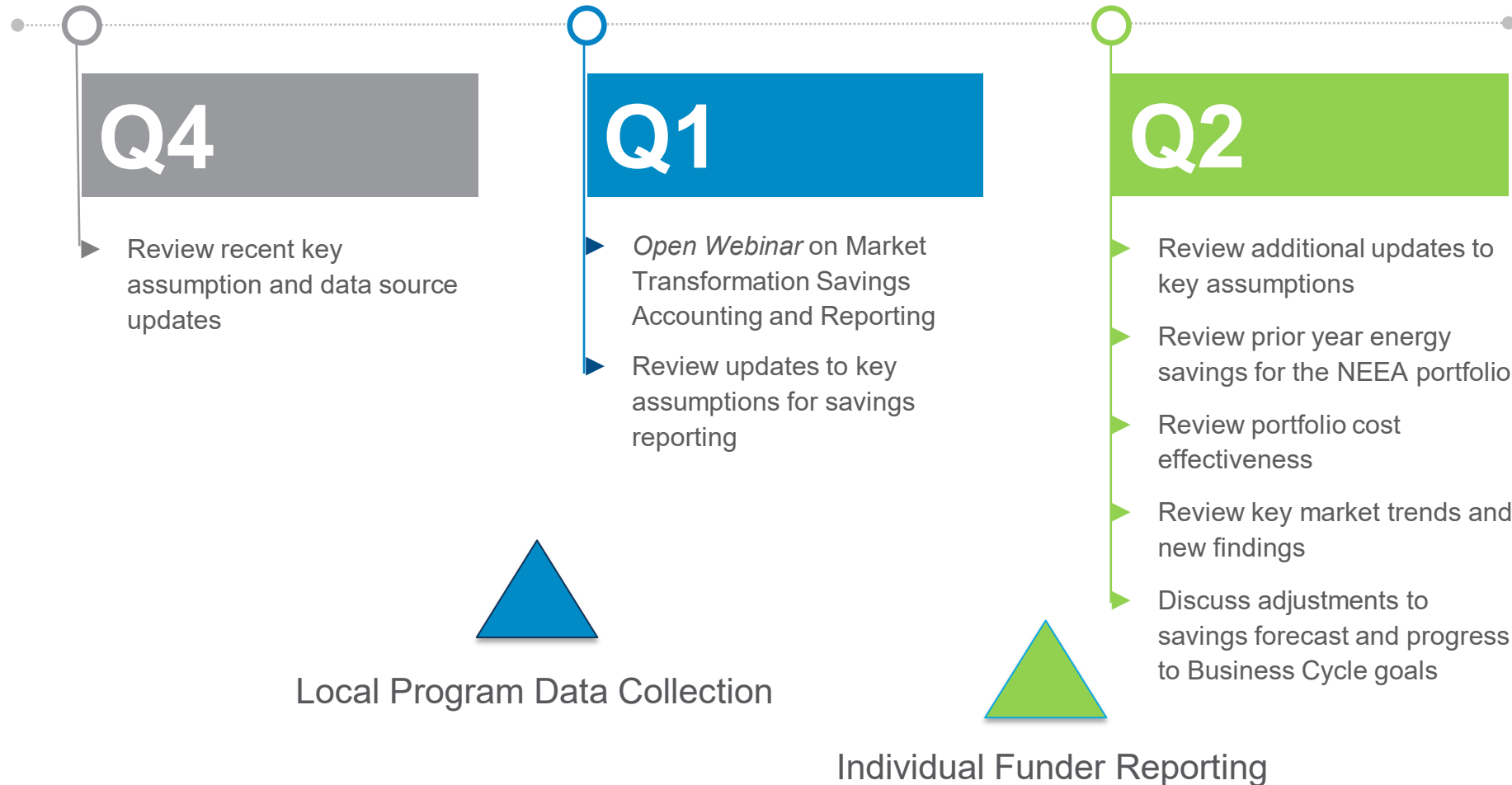
Annual Reporting Introduction

Objectives

- ❑ Inform about the Annual Reporting timeline



Annual Reporting Process and Engagement with CEAC



Market Transformation Framework

Objectives

- ❑ Provide context for more detailed conversations regarding cost-effectiveness and evaluation.



Questions to answer today

- **What** is market transformation?
- **Why** do market transformation?
- **Where** does market transformation take place?
- **How** is market transformation achieved in the Northwest?



What is market transformation?

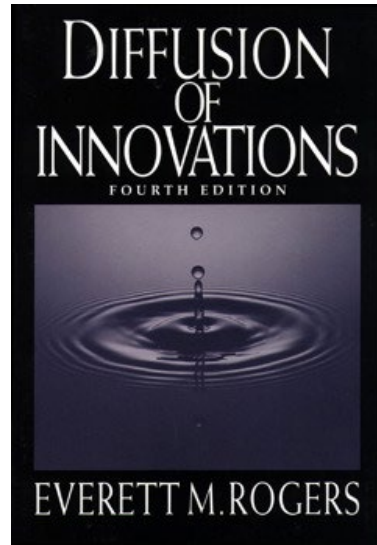
What is Market Transformation?

*The **strategic process** of **intervening in a market** to
create **lasting change***

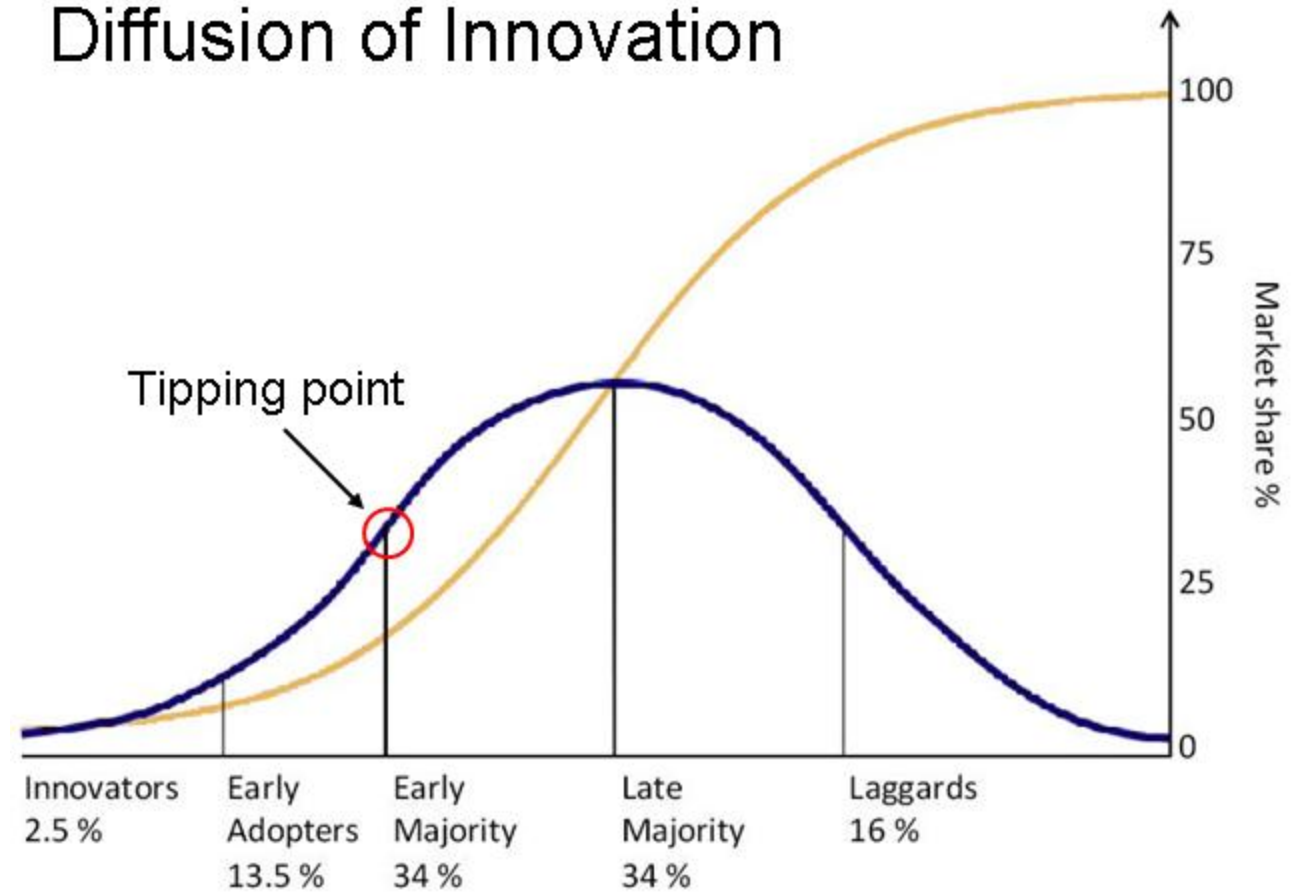
What is Market Transformation?

*The **strategic process** of **intervening in a market** to create **lasting change** in market behavior by removing identified barriers and/or exploiting opportunities to accelerate the adoption of **all** cost-effective energy efficiency as a matter of **standard practice**.*

Market Transformation and Diffusion of Innovation



Diffusion of Innovation





Why do market transformation?



NEEA Purpose

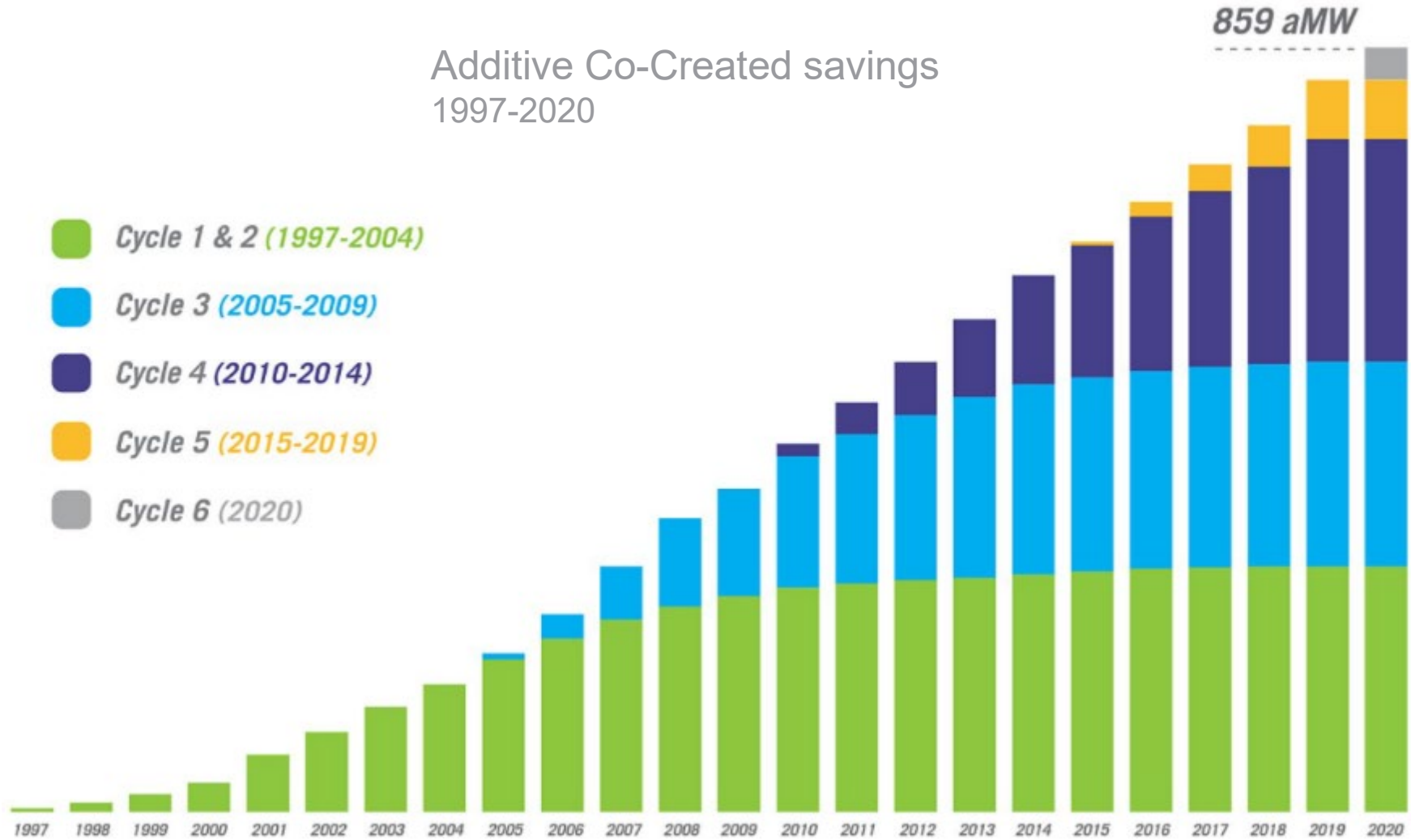
NEEA is an alliance of utilities that pool resources and share risks to transform the market for energy efficiency to the benefit of consumers in the Northwest.





Sustained savings

Additive Co-Created savings
1997-2020

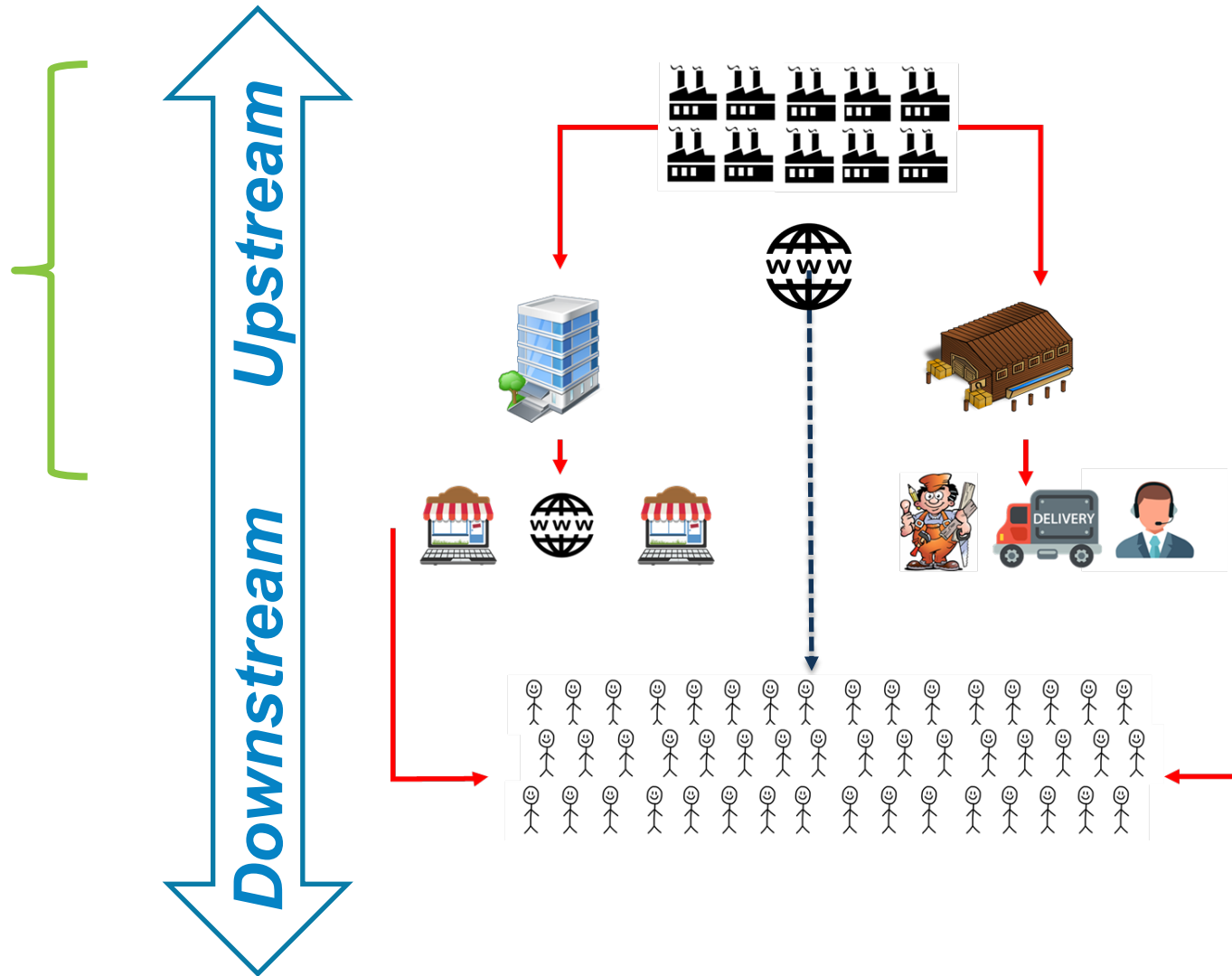




*Where does
market
transformation
take place?*



Mostly up here

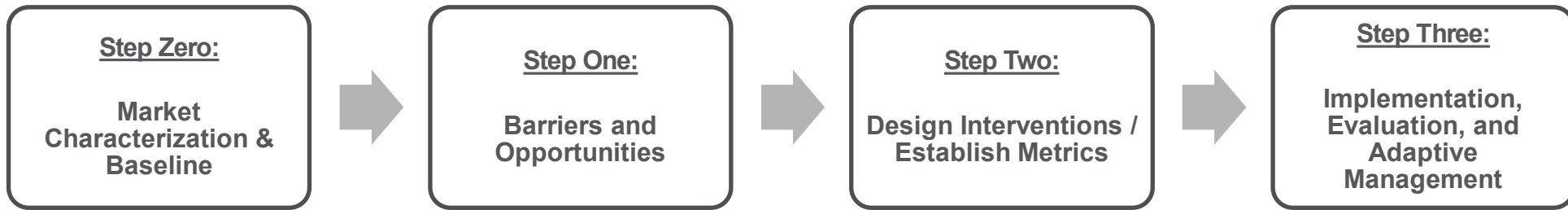




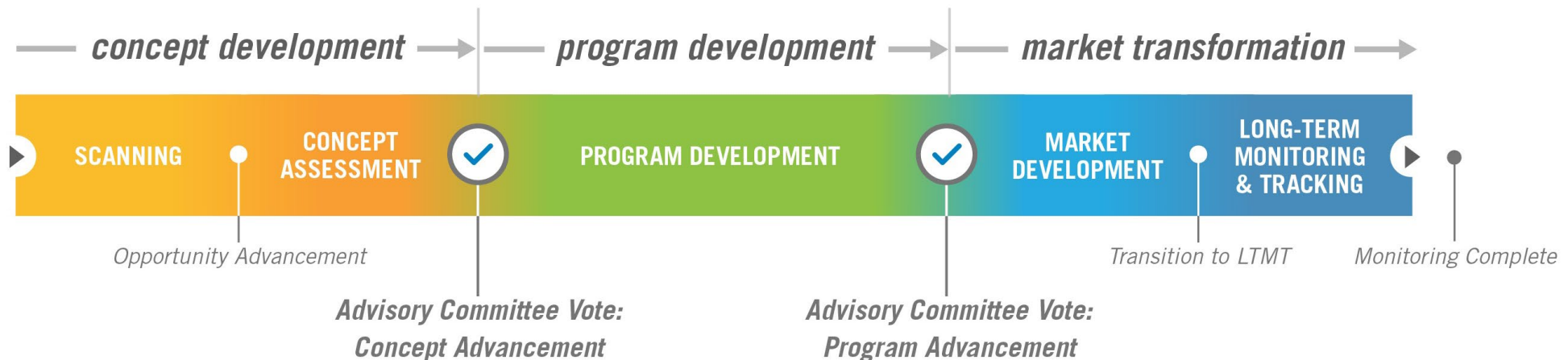
How is market transformation achieved in the Northwest?

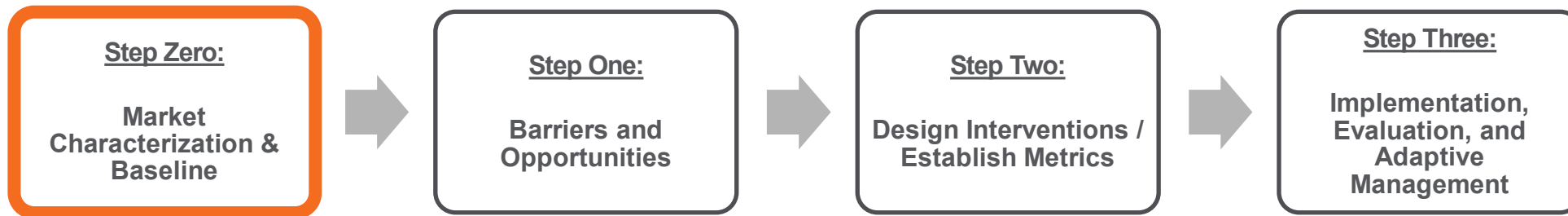


Implementing Market Transformation Step by Step



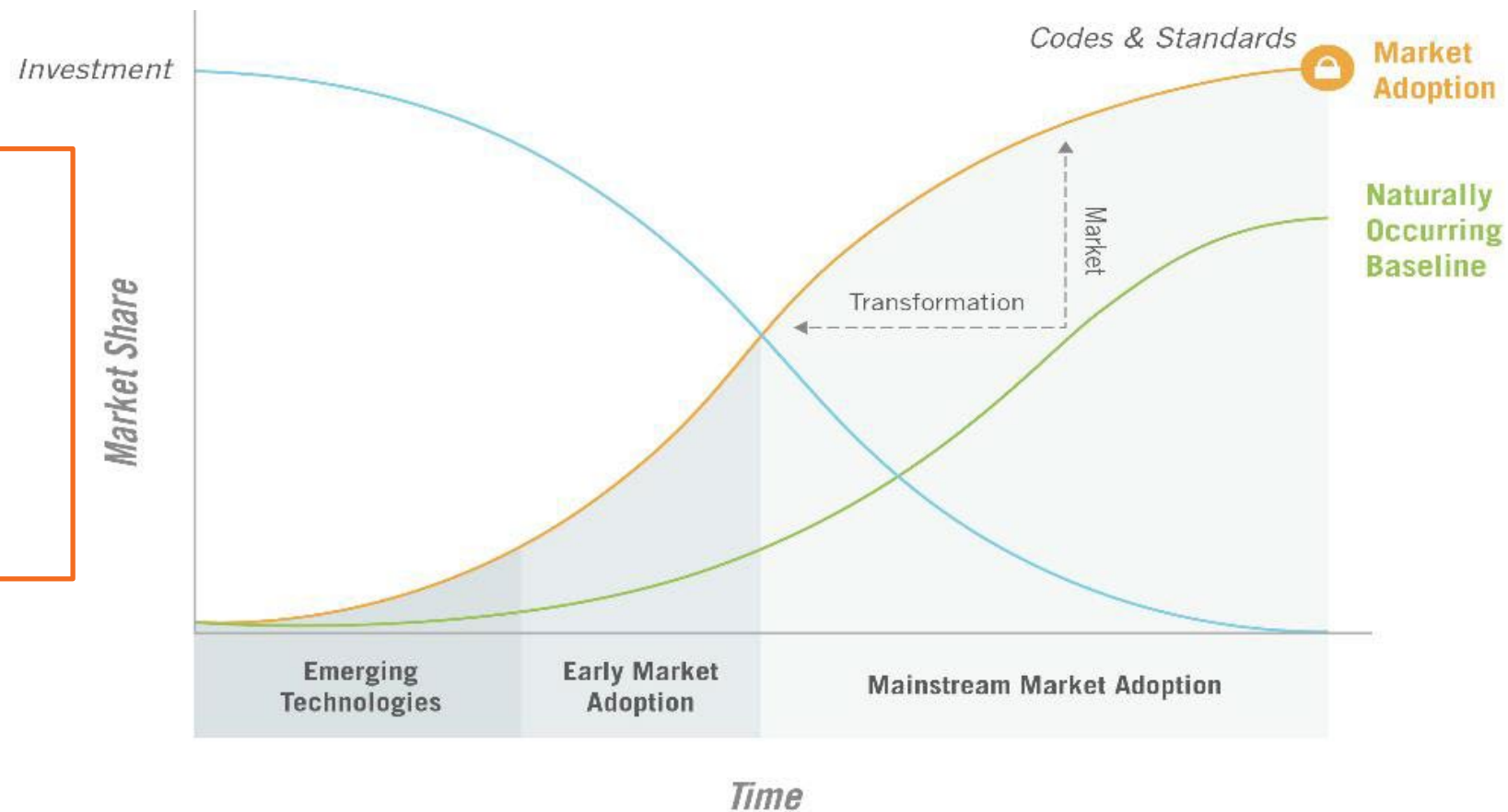
Initiative Lifecycle





Key Objectives

- Market Characterization
- Baseline Development:
 - Pre-intervention Market Conditions
 - Forecast





Step Zero:
Market
Characterization &
Baseline



Step One:
Barriers and
Opportunities



Step Two:
Design Interventions /
Establish Metrics



Step Three:
Implementation,
Evaluation, and
Adaptive
Management



Availability?



Supply chain?



Awareness?

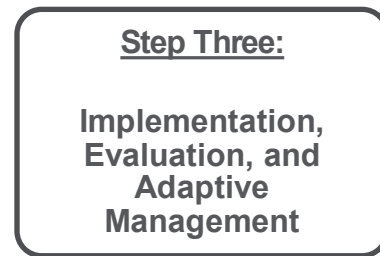
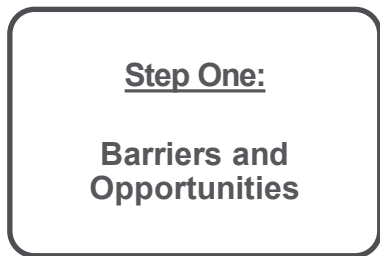
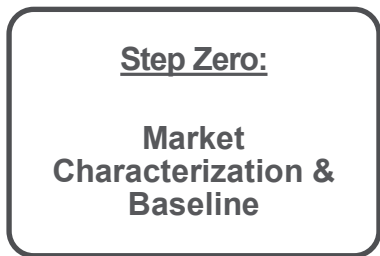


Confusion?

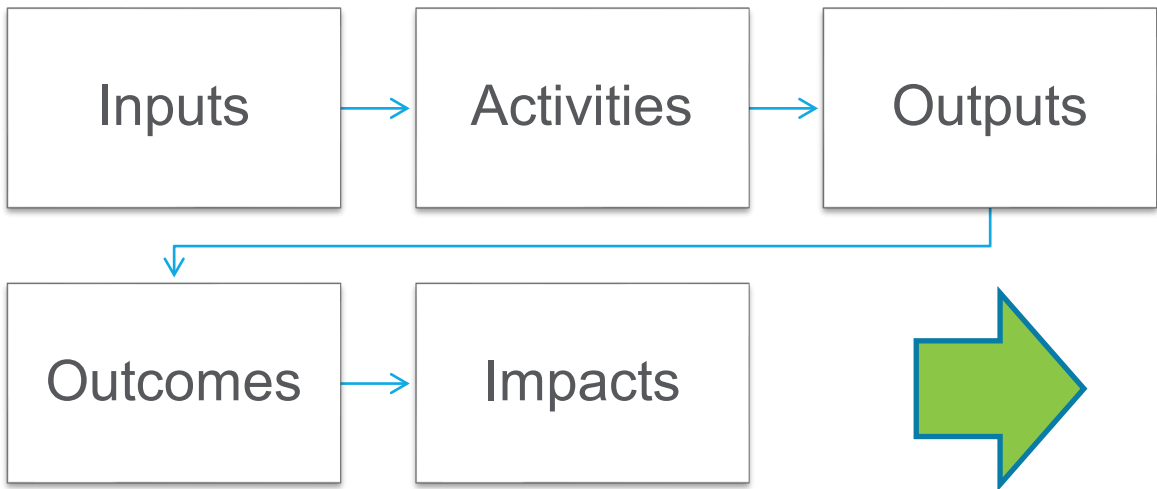


Price?





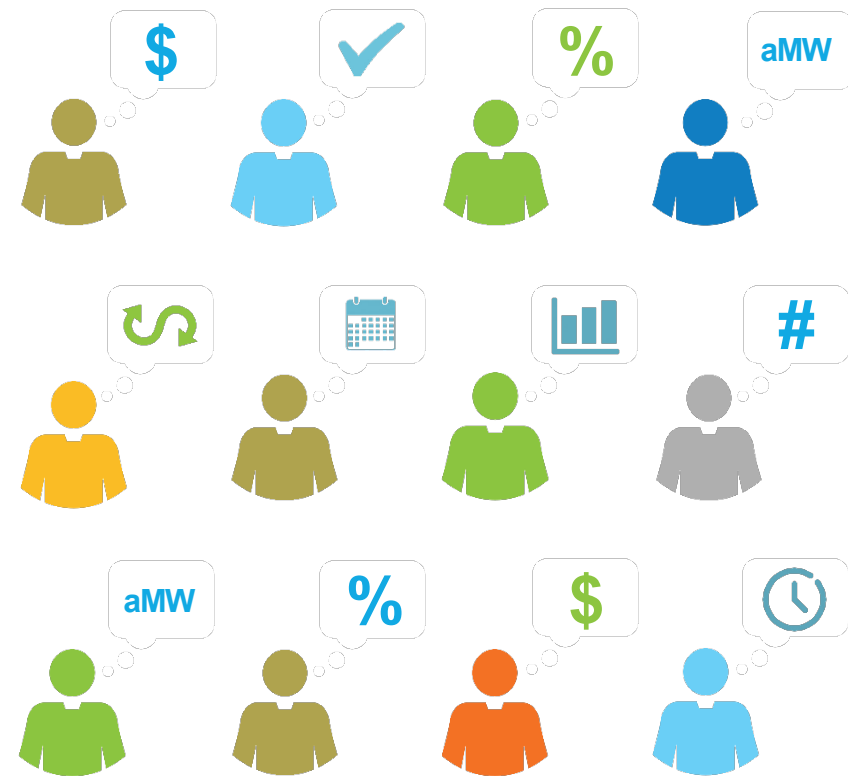
Logic Model



Key Objectives

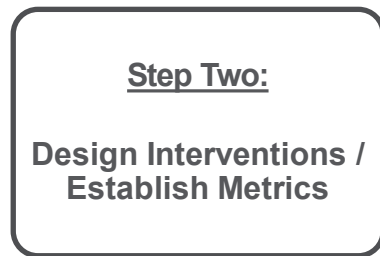
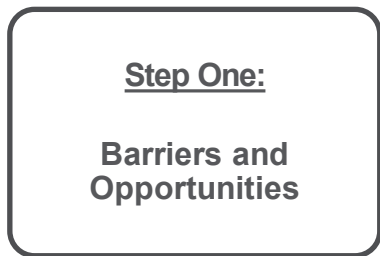
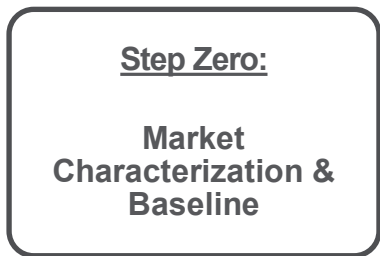
- Develop Market Progress Indicators

Market Progress Indicators

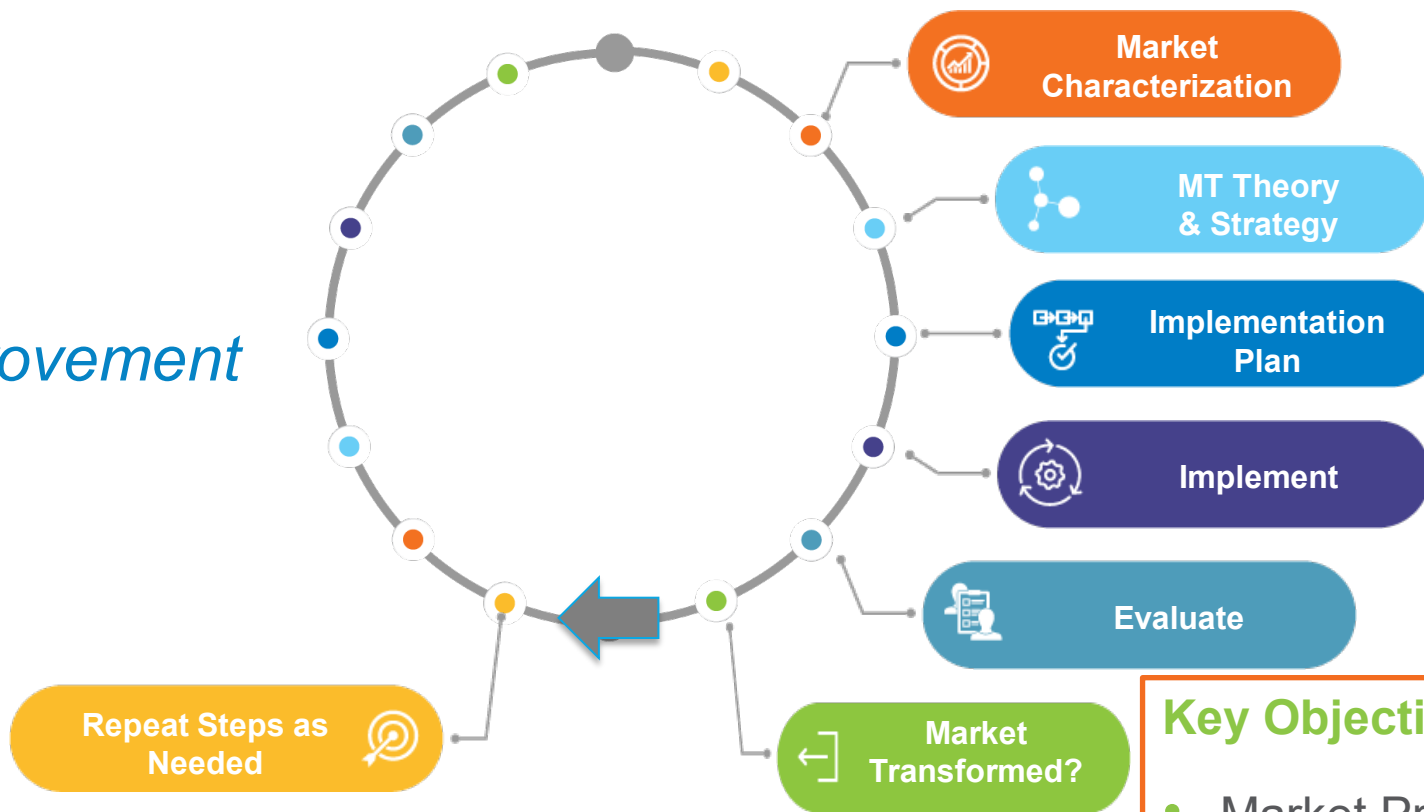


Examples: Outcome → MPI

<p>Logic Model Outcome</p>	<p>Installers choose the efficient approach</p>	<p>Manufacturers have commercialized products available in the market</p>	<p>ENERGY STAR adopts the specification</p>
<p>Market Progress Indicator (MPI)</p>	<ul style="list-style-type: none"> • Trained installers report installing more of the efficient product than in previous years. • The general population of installers install the efficient product more than in previous years. • Distributor sales of the efficient product increases year-over-year 	<ul style="list-style-type: none"> • The number of manufacturers that have commercially available products increases or does not decline year over year. • Categorizing manufacturers by market share into low, medium and high, the number of high-volume manufacturers that offer the product increases, or does not decline, year over year 	<ul style="list-style-type: none"> • ENERGY STAR adopts the specification



Implementation:
*A continuous improvement
process*

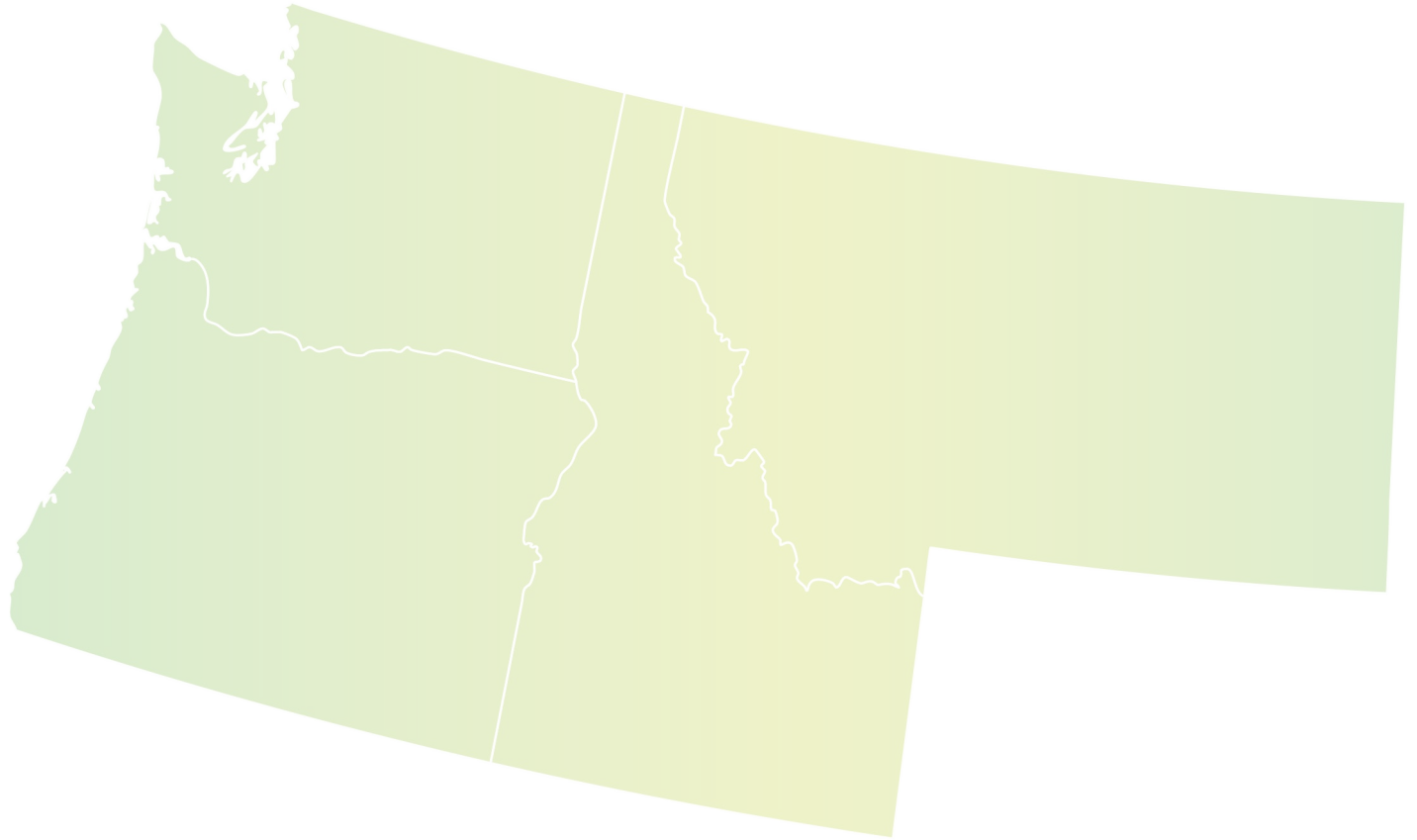


Key Objectives

- Market Progress Evaluations
- Long-term Monitoring and Tracking Reports



Questions?



How did we do?

Objectives

- ❑ Provide context for more detailed conversations regarding cost-effectiveness and evaluation.

Market Transformation Savings

Objectives

- ❑ Provide background context for committee members to understand the values they will see in funder savings reports as well as NEEA's corporate-level savings reporting.



Evaluation Supports Savings Reporting



Savings are important, but not how progress is measured



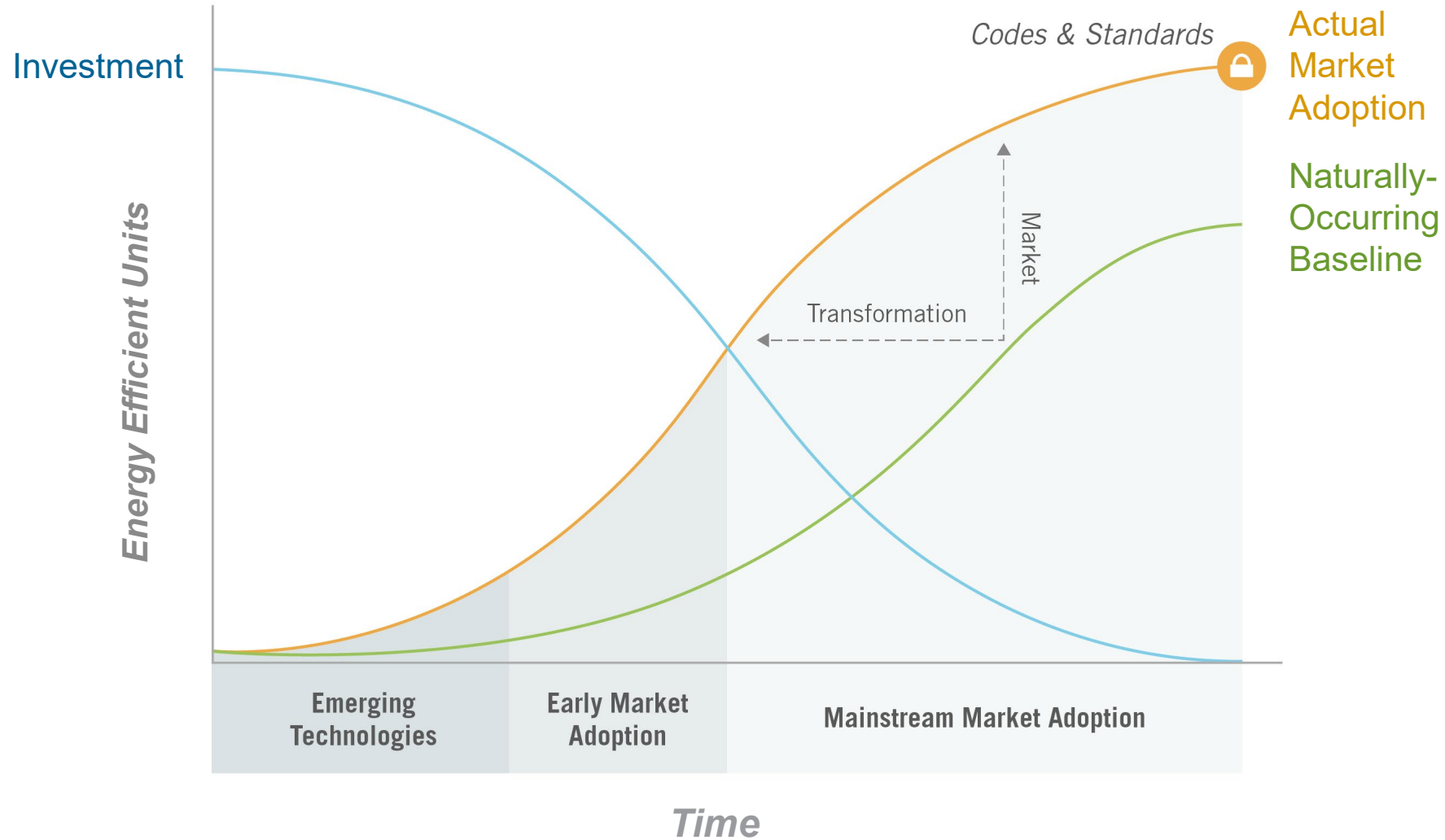
Progress is measured through evaluation of logic model



Evaluation enables savings reporting at the market level



Market Transformation





Market Transformation Baseline

Definition

- Market adoption and/or energy use forecast without market intervention

Purpose and Importance

- To track the progress of Market Transformation efforts

Development

- Rationale developed internally
- Based on program logic
- Third party reviewed/verified



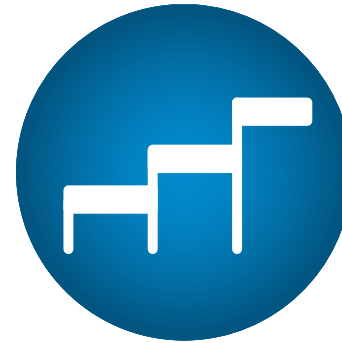
How Does NEEA Report Savings?

Two different baseline methodologies:



MARKET TRANSFORMATION APPROACH

Uses the Naturally Occurring
Baseline



POWER PLAN APPROACH

Uses a
Frozen Efficiency Baseline



How Does NEEA Calculate Savings?

Fundamental approach:

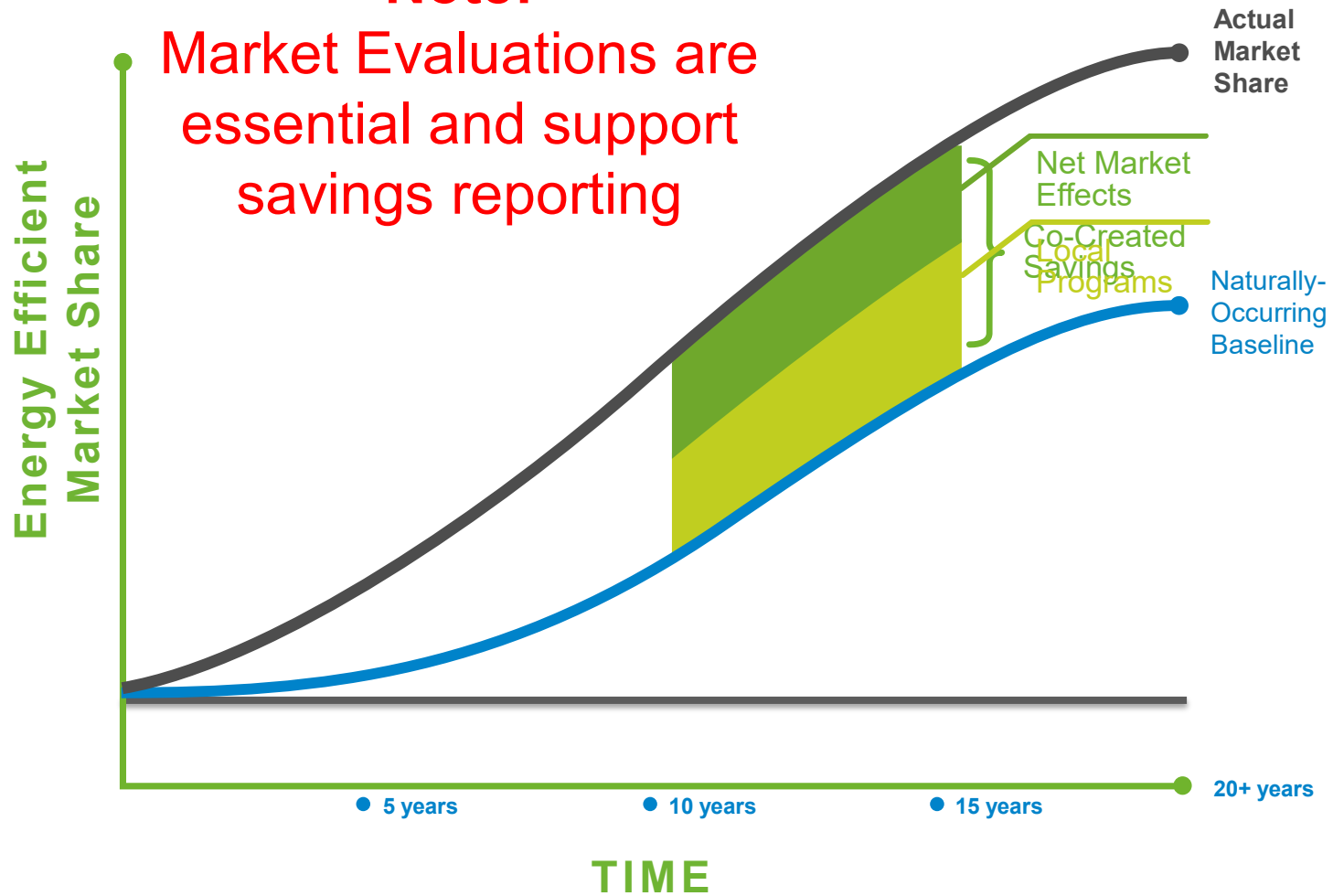




Market Transformation Approach

Note:

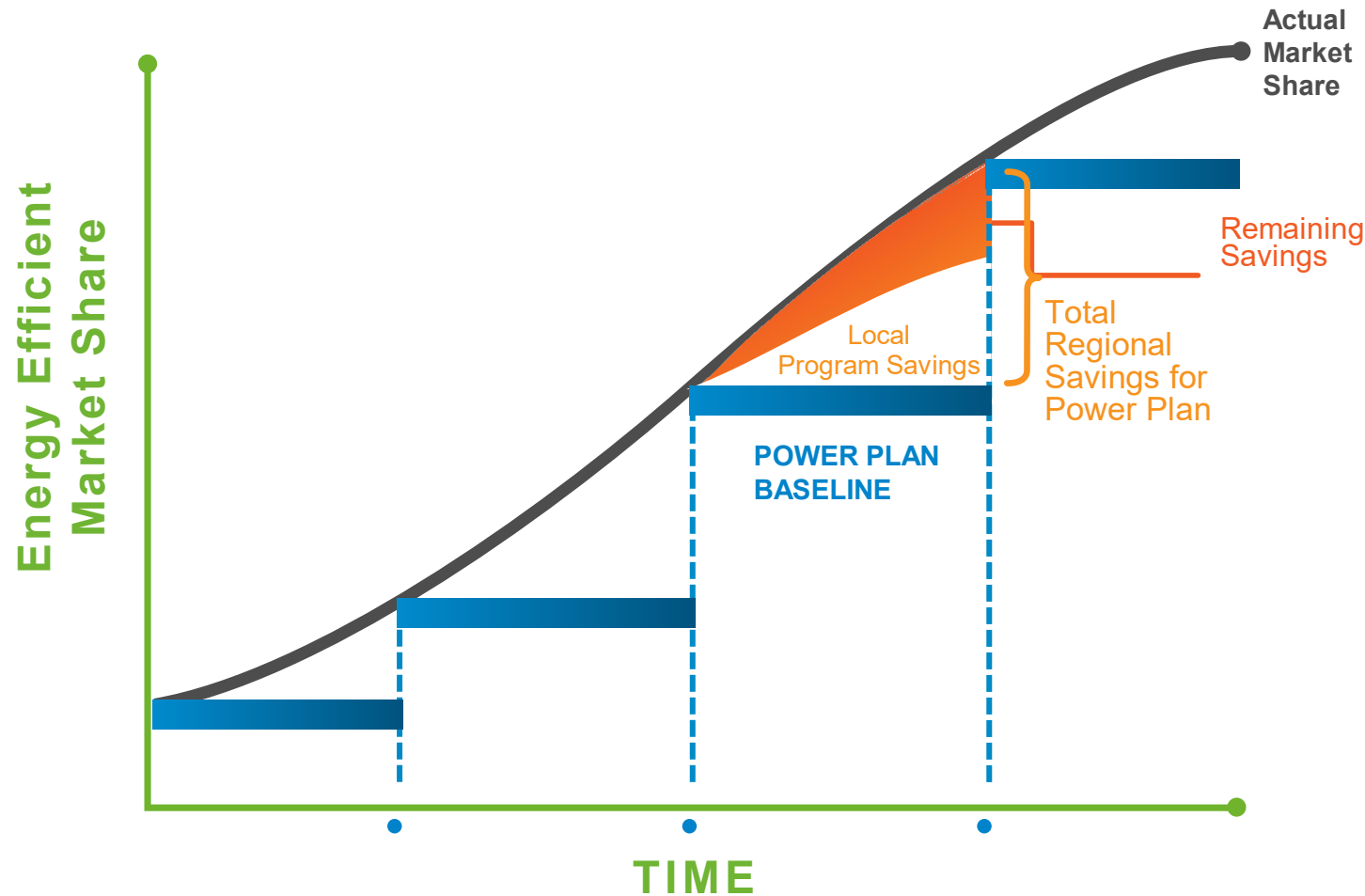
Market Evaluations are essential and support savings reporting



Purpose:
Report savings associated with market transformation



Power Plan Baseline



Purpose:
Report savings
against Power
Plan baseline



Key Takeaways



NEEA takes a regional perspective



Market baseline tells the story of transformation



Market Transformation and Power Plan methods not comparable



Evaluation process supports Market Transformation savings reporting



We work with each funder to suit their reporting needs where possible

How did we do?

Objectives

- ❑ Provide background context for committee members to understand the values they will see in funder savings reports as well as NEEA's corporate-level savings reporting.

Market Transformation Costs and Benefits

Objectives

- ❑ Committee feels informed on NEEA's approach and has opportunity to ask questions.



Core Principles

- Alignment with NW Power and Conservation Council
- Regional-level analysis
- Market transformation approach
- Full supply chain scope
- Symmetry of costs and benefits
- Transparency
- Hard-to-quantify impacts



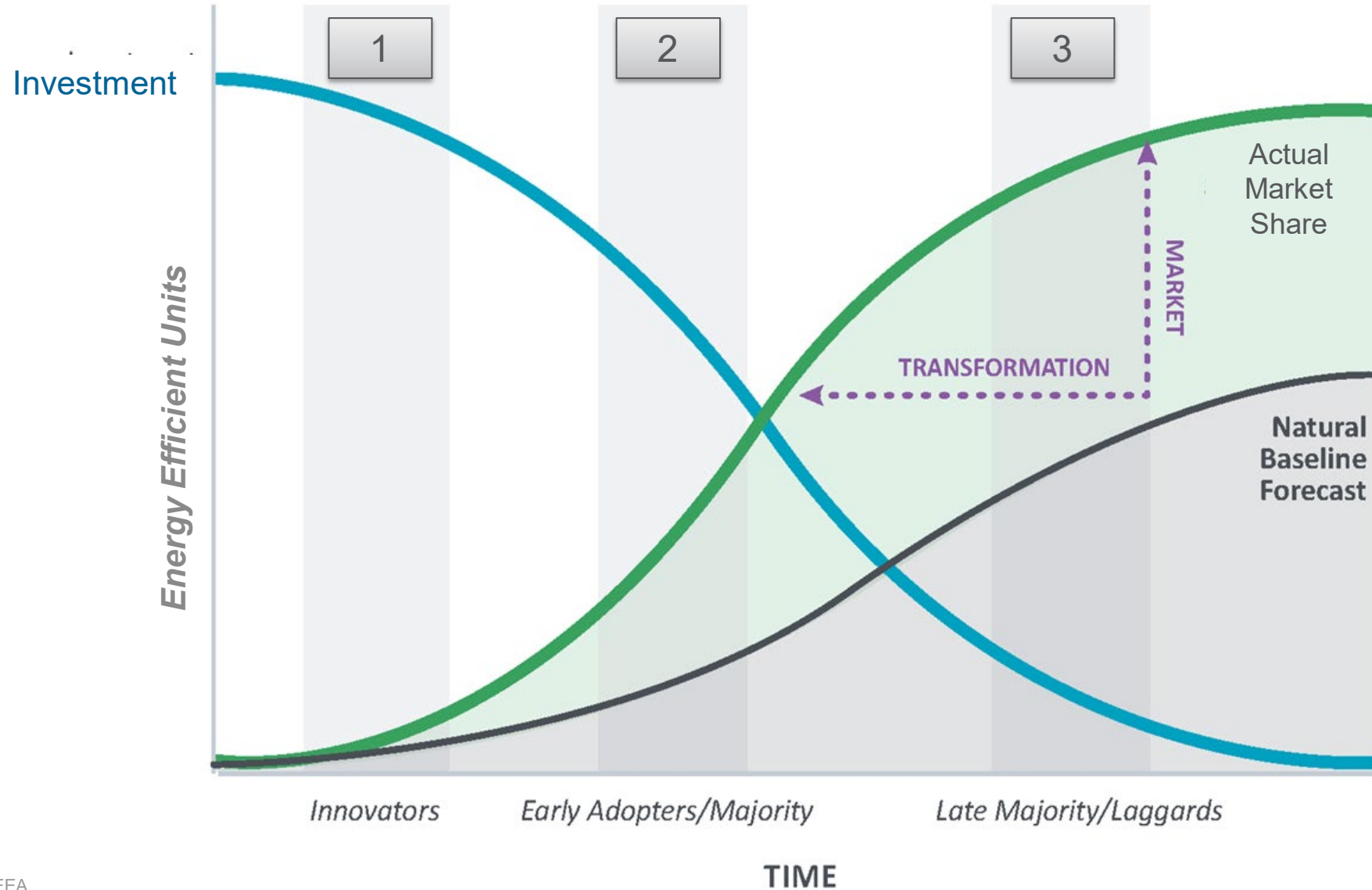
Perspective

- Total Resource Cost
- Regional
- 20-year horizon





Anything less than 20 years yields misleading results





Metrics NEEA Calculates

- Benefit/Cost Ratio
 - *“Do benefits outweigh the costs?”*
 - Used for portfolio decision-making
 - Each NEEA program above 1.0
- Levelized cost
 - *“How does the cost compare to alternatives?”*



Inputs - Benefits

Regional Benefit		Source	
		Electricity	Natural Gas
Energy Benefit	Commodity price of resource	Power Plan	Power Plan
	Risk mitigation regarding supply adequacy		Weighted average of utility values
	Deferred transmission, distribution, and generation capacity costs		Weighted average of utility values
Avoided GHG emissions			Power Plan
Production, storage, transmission and distribution loss			Avoided cost filings, IRPs and discussions with utility staff
Conservation of other fuels			Measure dependent
Quantified non-energy impacts			
Regional Act Credit		NW Power Act	





Inputs - Costs

Regional Cost	Source	
	Electricity	Natural Gas
First Cost	Measure dependent	
Operations & maintenance costs		
Replacement Cost		
NEEA direct costs	NEEA finance system	
NEEA administrative costs	20% of direct program spending	
Local Program administrative costs	20% of estimated total rebate dollars	
Other costs associated with market change	<ul style="list-style-type: none">• Measure dependent• 20% of governmental tax benefits given	





The Tool



Regional
Technical Forum

ProCost

- Council's tool
 - Regional perspective
 - Life-cycle view of costs and benefits
- ProCost computes
 - Levelized cost of savings (\$/kWh)
 - Regional cost-effectiveness
 - Many additional cost, savings, and carbon parameters

Files

- Analyst Inputs
 - ProCost Engine
 - Measure Assessment Template
- Reference files
 - Marginal Cost and Load Shapes
- Documentation
 - User Guide
 - Load Shape Viewer

[ProCost | Regional Technical Forum \(nwcouncil.org\)](https://www.nwcouncil.org/procost)



Example

How did we do?

Objectives

- ❑ Committee feels informed on NEEA's approach and has opportunity to ask questions.

Market Research and Evaluation (MRE) Update

Objectives

- ❑ Committee awareness of market research and evaluation activities

2022 Q4

Market Research & Evaluation Quarterly Newsletter

WHAT'S NEW:



Holiday greetings everyone!

NEEA's Market Research and Evaluation (MRE) team is pleased to share these updates from the last quarter. Enclosed are important details related to current research and evaluation studies, as well as those that will commence in the first quarter of 2023. There will be a host of studies in the field between now and the end of the first quarter. Several evaluations for the Luminaire Level Lighting Controls program as well as the Extended Motor Products program will be wrapping up in the first part of the year. These studies will bring increased understanding of the market opportunity for these efficient products, as well as NEEA's progress toward its Market Transformation goals. In addition, there are a number of code compliance evaluations that will be in full swing in the next few months. It's been an eventful year, and the team is looking forward to what the year ahead brings.

Wishing you a wonderful holiday season and a joyful start to the new year!

~ **Amy Webb**, Sr. Manager, Market Research & Evaluation ~

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At a Glance

MARKET RESEARCH & EVALUATION PROJECTS

Integrated Systems



Natural Gas Portfolio and Strategy: *Dual Fuel and Gas Heat Pump Market Research*

High-Performance Windows: *Naturally Occurring Baseline Review*

Luminaire Level Lighting Controls: *Key Assumptions Review*

Luminaire Level Lighting Controls: *Market Progress Evaluation Report (MPER) #2*

Luminaire Level Lighting Controls: *Incremental Cost Study*

Variable Speed Heat Pumps: *Baseline and Key Assumptions Review*

Efficient Fans: *Fan Manufacturer Regional Market Share Research*

Extended Motor Products: *Commercial and Industrial Nonparticipant Market Share Research*

Extended Motor Products: *Pump and Circulator Variable-Load Baseline and Constant-Load to Variable-Load Savings Estimate Review*

Motor-Driven Products: *Commercial Adjustable Speed Drive Penetration Market Research*

Retail Products Portfolio: *Market Progress Evaluation Report (MPER) #2*

Heat Pump Water Heaters: *Installer Focus Groups*

Heat Pump Water Heaters: *Market Progress Evaluation Report #7*

Heat Pump Water Heaters: *Benefit/Cost Model Review*

PLANNING* FIELDING* REPORTING*



Products



DUAL FUEL (Electric & Natural Gas) PROJECTS:



NATURAL GAS PROJECTS:



*PLANNING: MRE projects from inception through proposal selection

*FIELDING: MRE projects from kick-off through the completion of field work

*REPORTING: MRE projects in the analysis/synthesis stage through report posting

At a Glance

MARKET RESEARCH & EVALUATION PROJECTS AND ENERGY USE STUDIES

Codes, Standards, New Construction



Commercial Codes: *Washington Commercial Code Evaluation*



PLANNING* FIELDING* REPORTING*

Commercial Codes: *Montana Commercial New Construction Code Evaluation*

Commercial and Residential Codes: *Commercial and Residential Codes Market Progress Evaluation Report #2*



Residential Codes: *Idaho and Montana Residential Code Evaluations*



Residential Codes: *Washington Residential Code Evaluation*



Standards: *Uninterruptible Power Supplies and Commercial Boilers Standards Evaluation*



Standards: *Commercial Kitchen Equipment and High CRI Lamp Oregon and Washington State Standards Evaluation*



Long-term Monitoring & Tracking



Ductless Heat Pump Long Term Monitoring and Tracking, Year 2

DUAL FUEL (Electric & Natural Gas) PROJECTS:



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*Retail Product Portfolio
Market Progress Evaluation
Report #2*



*Commercial & Residential
Codes Market Progress
Evaluation Report #2*

*HPWH Cold Climate
Demonstration Installation
Observation Research*



*Luminaire Level Lighting
Controls Market Progress
Evaluation Report #2*



Fans Market Characterization

How did we do?

Objectives

- ❑ Committee awareness of market research and evaluation activities



Upcoming Meeting Topics

Q2 – April 27, 2023

- Annual Reporting

**Topic
Requests?**

How was your experience?



Meeting Wrap-up

- Public Comment?
- Upcoming Meetings:
 - April 27, 2023
- Feedback:
 - Overall
 - Agenda
 - Packet Materials
 - What went well?
 - What needs work?