



Introduction to Market Transformation

2015 ACEEE/CEE National Symposium on Market Transformation

Joanne Morin
Deputy Director
April 20, 2015
Washington, DC



Presenters

Joanne Morin

Deputy Director

Consortium for Energy Efficiency

David Cohan

Building Energy Codes Program Manager

U.S. Department of Energy

Dr. Jane Peters

President and Owner

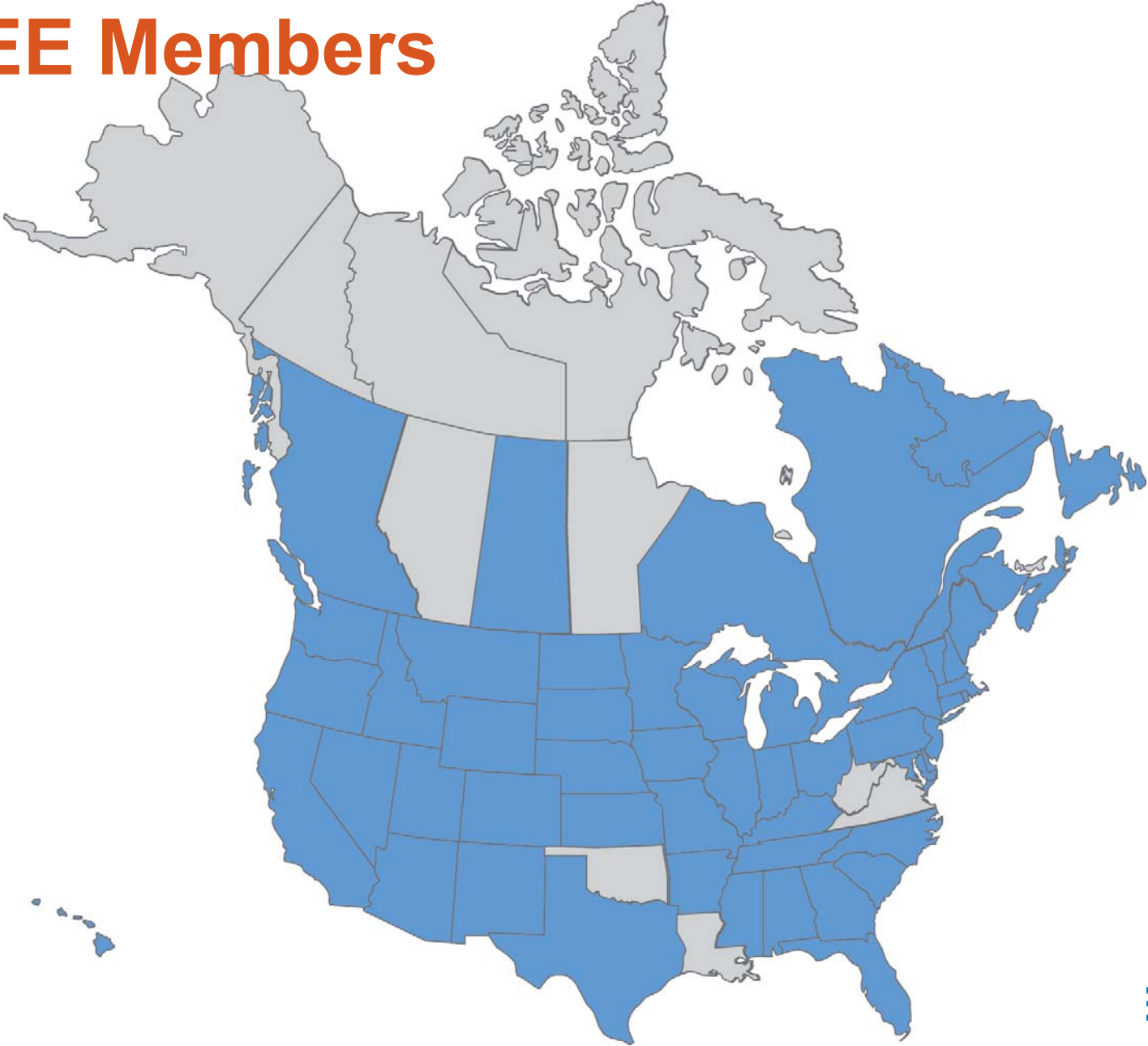
Research Into Action

Schedule

Time	Presenter	Topic
1:00 – 1:45	Joanne	Introduction to MT
1:45 – 2:30	David	Diffusion of Innovation
2:30-2:45	Break	
2:45-3:30	David	Breakout Exercise
3:30-4:00	Jane	Evaluation, Measurement & Verification
4:00-4:15	Break	
4:15- 4:30	Jane	Breakout Exercise
4:30-4:55	Jane	EMV Wrap up
4:55-5:00	Joanne	Session Wrap up

- ▶ History of Energy Efficiency Programs
- ▶ Characteristics of Market Transformation
- ▶ Development of Programs
- ▶ Examples

CEE Members



Program administrators formed CEE

- ▶ To reach **binational markets**
- ▶ **Accelerate market uptake** of efficient products and services
- ▶ Which achieves **lasting public benefit** of energy efficiency





▶ ***History of Energy Efficiency Programs***

▶ Characteristics of Market Transformation

▶ Development of Programs

▶ Examples

Origins of EE Programs

▼ 1970s:

- Energy crisis and OPEC oil embargo
- “Conservation”

▼ 1980s to early 90s: IRP

▼ Mid-1990s:

- Deregulation
- Some abandon IRP
- Establish system benefits charge



Pressures on EE Programs in the New Millennium

- Restructuring
- Enron
- Reliability issues
- Increased focus on systems benefits
- Renewed emphasis on IRP and resource procurement

Recent Pressures on Programs

- Awareness of environmental impacts & global warming
- Climate change policies (CAA 111d)
- State energy policies
- Rising minimum standards and building codes
- Higher energy savings targets
- Integration of renewables—distributed generation
- “Connected” capabilities

Demand Side Management (DSM)

- ▶ Part of integrated resource planning (IRP)
- ▶ Paid directly through rates or system benefit charges
- ▶ Goal—to yield the lowest system cost
- ▶ Reduce energy and power demand
- ▶ Avoid costly construction and operation of new plants

Primary Design of Demand Side Management Programs

- ▶ Focused on short term savings
- ▶ Predominantly through financial incentives
- ▶ Influenced single transactions
- ▶ Temporary shifts in market share



Market Transformation

Markets
replace
IRP

Pressure
to
reduce
costs

Leverage
market
forces

MT
replaces
RA for
Public
Benefit

Today's Context for Market Transformation

- ▶ Paradigm shift occurred with Reliability Crisis
- ▶ IRP hasn't gone away – distribution utility requirement
- ▶ Procurement of resources including efficiency
- ▶ Policies like CA efficiency first in “loading order”
- ▶ “All cost-effective efficiency” – Climate Change
- ▶ Sustainability is more valued and efficiency is recognized as the foundation of climate change policy



- ▶ History of Energy Efficiency Programs
- ▶ ***Characteristics of Market Transformation***
- ▶ Development of Programs
- ▶ Examples

What Market Transformation efforts
have you already responded to?

So What is Market Transformation?

- ▼ Policy objective?
- ▼ Program strategy?
- ▼ Economic concept?

Marketing Strategy

Definition of Market Transformation

Strategic interventions that attempt to cause lasting changes in the structure or function of a market, or the behavior of market participants, resulting in an increase in the adoption of energy efficient products, services, or practices.

Motivations for Market Transformation

- ▶ Thoughtful, more focused and integrated method of intervention that leverages market opportunities and focuses on key barriers
- ▶ Will lead to greater savings and more sustainable changes
- ▶ Won't have to use public funds to support programs in the future
- ▶ Privatization—moves things to the private market; less government interference
- ▶ “Transformed market” vs. strategy

Characteristics of MT

- ▶ Strategic interventions in the market
- ▶ Long-term objectives
- ▶ Tactical short-term objectives
- ▶ Approaches will vary due to differences in markets
- ▶ Need to recognize product life cycles and where you are in the life cycles

Understanding Consumer Behavior is Key



◀ Appeal to attributes that consumer values

MT Can Do No Harm?

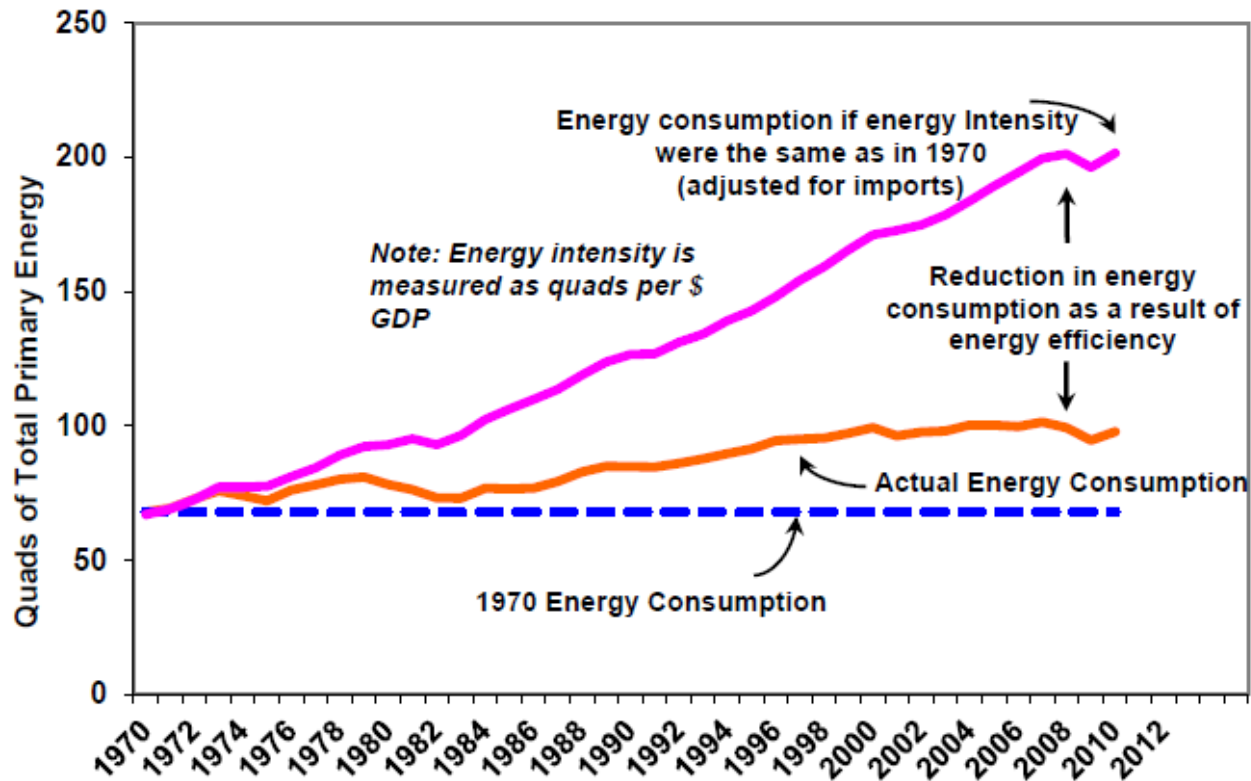


- ▶ Early CFL promotion through DSM programs
- ▶ Flickering, color, slow start up
- ▶ Bad early experiences delayed uptake of later superior products
- ▶ Update of CFLs still not dominant

Benefits of MT over DSM

- ▶ Ensuring self-sustaining results
- ▶ Lower costs – financial incentives phased out
- ▶ Spillover effects – other actions influenced
- ▶ Markets are more powerful
- ▶ Provides a strategic model and framework for justifying intervention

Impacts of Energy Efficiency



Source: ACEEE analysis of data in EIA 2012a [AER] and BEA 2012.

End of Rebates?

- ▶ Initial intervention may require financial incentives
- ▶ Concept is that over time the market is changed – “bribe” is not necessary
- ▶ May be true in some circumstances
- ▶ But a sustained effort in some manner may also be necessary

Outcome – Market Changes and Effects

- ▶ Increase in the quality, availability, specification, and installation of electronic ballasts and T8 lamps
- ▶ Increase in the stocking and sales of premium efficiency motors
- ▶ Increase in retail shelf space and improvement in product quality for compact fluorescent lamps and fixtures
- ▶ Increase in the specification and installation of high efficiency HVAC systems

Some Concerns Today Over Market Transformation

- ▶ Ever-increasing goals/targets
- ▶ Incremental savings only from baseline to efficient equipment
- ▶ Savings opportunities get “squeezed” when program administrators actually transform the market, especially if MT can’t be claimed/attributed
- ▶ Achieving MT requires sustained effort – not a magic bullet
- ▶ Not easy in dynamic markets



- ▶ History of Energy Efficiency Programs
- ▶ Characteristics of Market Transformation
- ▶ ***Development of Programs***
- ▶ Examples

The Practice: Key Elements of Market Transformation for Programs

- ▶ Address market barriers and opportunities
- ▶ Seek to affect lasting changes
- ▶ Set long-term goals with near term objectives
- ▶ Work with existing market channels
- ▶ Build on market trends
- ▶ Track market changes and progress
- ▶ Coordinate efforts to leverage maximum effect

Specify Market Barriers to be Addressed

There are many reasons why energy efficient products and services are not standard practice:

- ▼ Low energy prices
- ▼ Lack of product availability
- ▼ Customer confusion and lack of awareness
- ▼ Vendor and institutional practices
- ▼ Split incentives
- ▼ First cost

Design programs to overcome particular barriers

Take Advantage of Market Opportunities

- ▶ Manufacturers looking for green, sustainable business strategies
- ▶ Whole supply chain engaged on efficiency
- ▶ Public's attention to climate change and sustainability
- ▶ Policy makers increasingly turning to energy efficiency



iStockphoto

Seek Lasting Change

- ▼ Program goals should incorporate market changes
- ▼ Market changes need to be credited to efficiency programs
- ▼ Test sustainability of the market changes
- ▼ When appropriate, lock in market changes through:
 - Industry standards and practices
 - Building energy codes
 - Appliance and equipment minimum standards

Set Long-term Goals and Short-term Objectives

- ▶ Establish multiyear goal for large, systemic change
- ▶ Set near-term objectives tied to long-term goal, based on intervention logic and the story
- ▶ Identify and track market indicators

Work Through Existing Market Channels



iStockphoto

Build on Market Trends

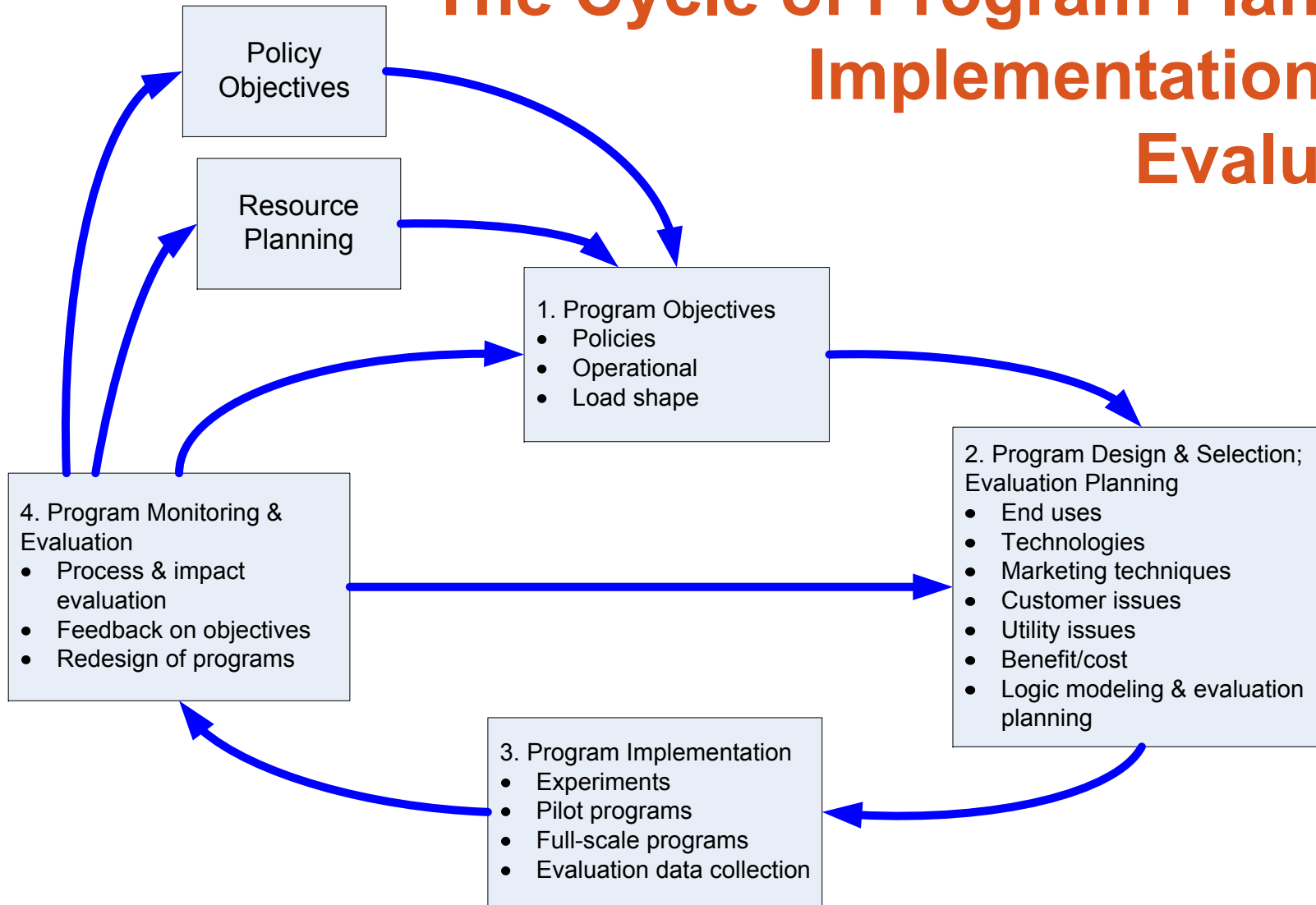
Conduct market research to identify:

- ▶ Current status and penetration of energy efficient products, services, and practices
- ▶ Customer values and needs
- ▶ Product innovations
- ▶ Market leaders

Coordinate or Leverage Efforts

- ▶ Work with others
- ▶ Adopt national programs
- ▶ Establish common goals and objectives
- ▶ Conduct joint market research and evaluation

The Cycle of Program Planning, Implementation, and Evaluation



Adapted by CEE from Pierre Landry, SCE, and *Demand-Side Management, Vol. 4: Commercial Markets and Programs*, EPRI, 1987.

Sample Considerations for Program Administrators

1. Desired Outcomes
2. Time Horizon
3. Assets Available
 - a. Financial
 - b. Endorsement
 - c. Technical Expertise
 - d. Business or Market Expertise
 - e. Communication Infrastructure
 - f. Service Areas Coverage
 - g. Relationship with Market Stakeholders
4. Tolerance for Failure
5. Restrictions
 - a. Legal
 - b. Regulatory
 - c. Management
 - d. Political
6. Level of Flexibility

Market Considerations (to name a few)

1. Magnitude of Savings Potential
2. Feasibility of Savings
 - a. Number of End Users
 - b. End User Responsible for Purchase
 - c. Useful Life of Equipment or Measure
 - d. Price Sensitivity
 - e. Product Performance
 - f. Energy Performance Significantly Different and Noticeable
 - g. Savings Accrues to End User or Decision Maker
 - h. Complexity of Distribution or Installer Network
 - i. Communication Infrastructure in Place
3. Stakeholder Circumstances
 - a. Number of Stakeholder Industries
 - b. Presence of Dominant Stakeholder (s)
 - c. Motivations
 - d. Business Sophistication or Marketing Capabilities
4. Defining Industry Characteristics
 - a. Commodity Goods
 - b. Seeking Differentiation
 - c. Duration of Product Cycles

The Role of Program Logic

- ▶ A blueprint or map for programs
 - identifies goals and anticipated progress
- ▶ Provides description of:
 - Relationship between program activities and effects
 - Identifies market barriers and opportunities
 - Targets



Evaluation, Measurement & Verification (EM&V)

- ▶ Demonstrate the value of the programs
- ▶ Transparent and consistent assessment
- ▶ Determine energy savings
- ▶ Evaluate causes and effects
- ▶ Compare benefits and costs
- ▶ How well is program designed? Implemented?
- ▶ Understand and improve program performance

Estimation of Market Effects

- ▶ Ultimate indicator of intervention market effects is still energy savings
- ▶ Market tracking and performance indicators are even more important under market transformation
- ▶ Impact evaluation has a different focus for market transformation than for resource acquisition



- ▶ History of Energy Efficiency Programs
- ▶ Characteristics of Market Transformation
- ▶ ***Development of Programs***
- ▶ Examples

Examples of Market Transformation

- ▶ Commercial lighting
 - 1985-1998 T8 electronic ballasts become standard practice
 - 2000-2010 Installed base doubles



Examples of Market Transformation

- ▶ Resource efficient clothes washers, 1989-2001
 - Proven market acceptance basis for future standard



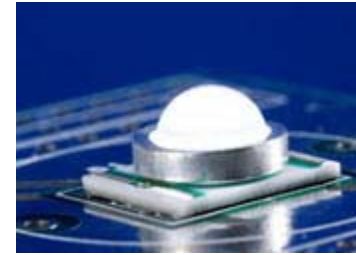
- ▶ Super efficient refrigerator program 1992-2000
Proof of technology leads to higher efficiency

Types of MT Programs

- ▼ Golden Carrot™
- ▼ Bulk Procurement
- ▼ Design Charrette
- ▼ Design Competition
- ▼ Common Program Components
- ▼ Joint Campaigns or Branding
- ▼ Equipment Directories
- ▼ Conferences, Summits, Venues for Focused Interaction

Examples of EE Platforms to Achieve Scale

▶ Lighting for Tomorrow



▶ CEE Initiatives and Qualifying Products Lists

CEE members develop market initiatives and explorations with impact in America and Canada



Residential

Whole House

HVAC

Gas Space Heating

Appliances

Swimming Pools

Gas Water Heating

Lighting

Consumer
Electronics



Commercial

Building Performance

Unitary Air-conditioning
and Heat Pumps

Gas Boiler Systems

Clothes Washers

Kitchens

*Demand Control
Ventilation*

Gas Water Heating

Lighting Systems

Data Centers
and Servers



Industrial

Strategic Energy
Management

Premium Efficiency Motors

Motor Systems

Distribution Transformers

Municipal Water and
Wastewater

Work plans: cee1.org/committee-work

Initiative documents: cee1.org/content/cee-program-resources

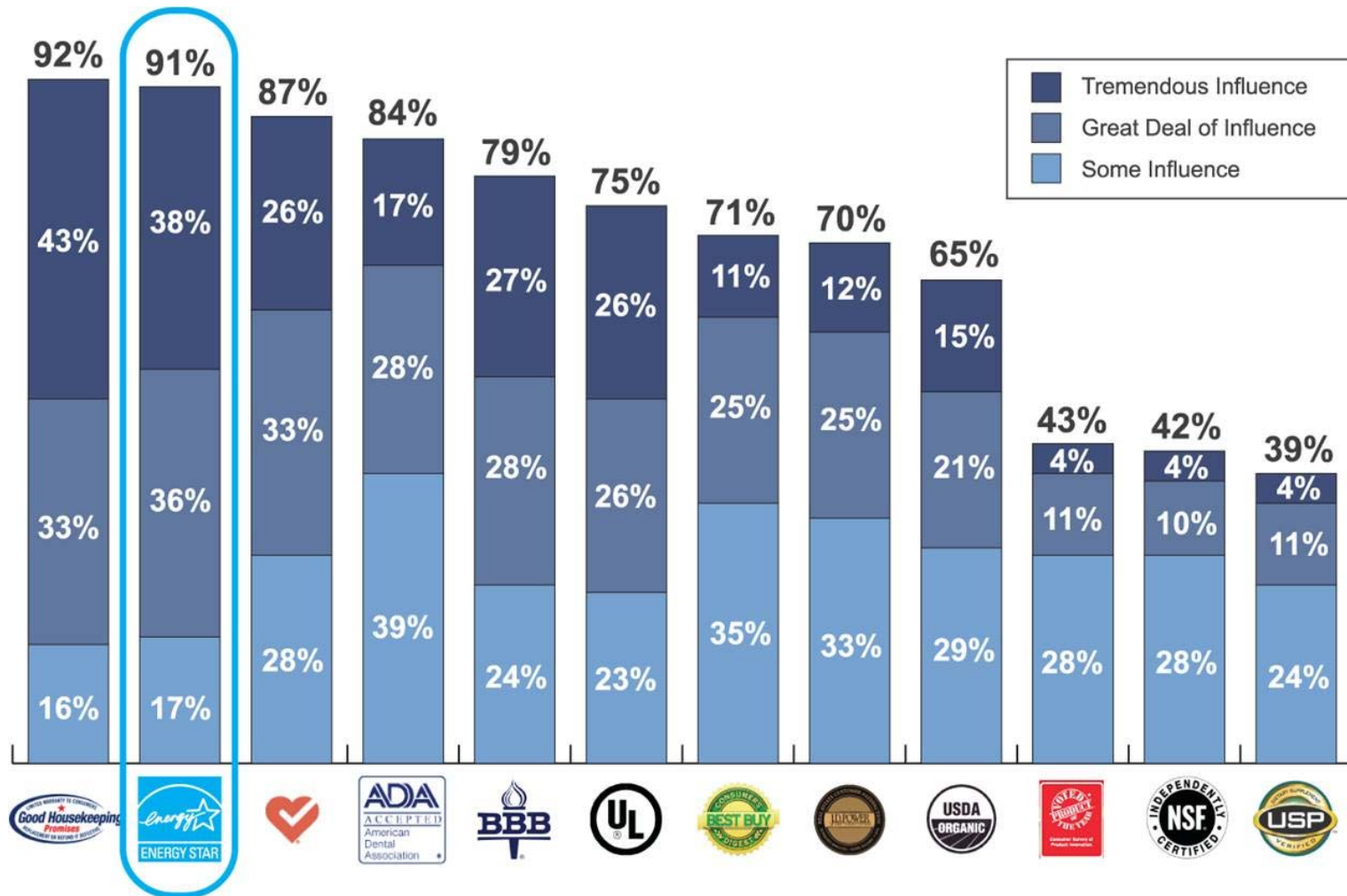
Energy Efficiency Needs a Brand!

Brands:

- ▼ Differentiate
- ▼ Message to the heart and mind
- ▼ Project credibility
- ▼ Strike emotional chord
- ▼ Create loyalty



ENERGY STAR® Influence



Source: Fairfield Research, July 2009

The Take Aways

- ▶ Market transformation is a strategic approach to create lasting improvements in energy efficiency
- ▶ Focus on markets and work with market participants; identify strategic intervention points
- ▶ Leverage your efforts and resources
- ▶ Coordination and working together are key
- ▶ Planning, market assessment, tracking, and evaluation are critical
- ▶ Set long-term goals and short-term objectives
- ▶ Match strategies to opportunities or barriers

Contact

Joanne O Morin
Deputy Director
617-337-9268
jmorin@cee1.org