Introduction to Market Transformation

2014 National Symposium on Market Transformation

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Presenters

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## Schedule

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History of Energy Efficiency Programs

Characteristics of Market Transformation

Development of Programs

Examples
Program administrators formed CEE

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

As the US and Canadian consortium of gas and electric efficiency program administrators, CEE works to accelerate the development and availability of energy efficient products and services, encourage market uptake, and attain lasting public benefit.
Membership is limited for credibility

- **Efficiency Program Administrators**—utilities and nonutilities with ratepayer funded programs

- **Public Stakeholders**—such as DOE national labs, state and provincial energy offices, government energy research agencies, regional and national efficiency organizations

- NO Organizations with private interests, for example, manufacturers, consultants, program contractors
CEE members direct 80% of energy efficiency expenditures

Source: CEE 2013 Annual Industry Report
Working Together, Accelerating Efficiency

▶ Credibility
  • Performance claim
  • Savings benefit

▶ Momentum
  • Binational market
  • Market position

▶ Leverage
  • Brand platforms
  • Trade associations
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
• State energy policies
• Rising minimums 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

![Graph showing energy consumption and efficiency trends from 1970 to 2012. The graph includes lines representing actual energy consumption and energy consumption if energy intensity were the same as in 1970 (adjusted for imports). There is also a note indicating that energy intensity is measured as quads per $GDP.]

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
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
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

1. Program Objectives
   - Policies
   - Operational
   - Load shape

2. Program Design & Selection; Evaluation Planning
   - End uses
   - Technologies
   - Marketing techniques
   - Customer issues
   - Utility issues
   - Benefit/cost
   - Logic modeling & evaluation planning

3. Program Implementation
   - Experiments
   - Pilot programs
   - Full-scale programs
   - Evaluation data collection

4. Program Monitoring & Evaluation
   - Process & impact evaluation
   - Feedback on objectives
   - Redesign of programs

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
Partners / Activities

- CEE
- Provide networking opportunity among stakeholders
- Maintaining consistency of concept and credibility of message at the national level
- Supporting sponsor integration of campaign message
- Facilitating information exchange among sponsors
- Supporting sponsor cooperation at local level

Sponsoring utilities

Sponsoring energy conservation organizations

Sponsoring government agencies

Sponsoring motors manufacturers

Sponsoring trade associations:
- NFMA (motors manufacturer)
- CASA (motors sales and service)
- CDA (other)

Phase 3 Business Plan:
- Diverse extensive sponsor coalition
- Campaign message, identity
Outputs

- Highlight motor management as a business opportunity to end-use customers
- Develop tools and resources, including the website, to support motors management
- Provide feedback on program
- Participate in campaign administration
- Provide sales or market data to CEE
- Encourage customers to work through local motor professionals to develop motor management plans
- Educate sales and marketing staff and/or members about motor management as a business opportunity
Outcomes
Short-term

- Sponsors actively engage in campaign activities
- Sponsors promote motor management to their customers
- Sponsors support each other in promoting motor management in the market
- Utilities provide incentives to customers or to vendors to provide motor management services
- Information is readily available and promoted
- Campaign provides support, networking opportunities, information exchange, education, National PR exposure, and consistency and clarity of message
Outcomes
Long-term

Increased demand for NEMA premium-efficiency motors as percentage of all motors purchased

Increase use of adjustable speed drives and appropriate applications

Increase interest in motor system optimization

Increased demand for best practice motor repair services as percentage of all motor repair services
If it were your money (and it often is), how would you evaluate that your money was well spent?
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
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](http://cee1.org/committee-work)
Initiative documents: [cee1.org/content/cee-program-resources](http://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
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

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