Introduction to Market Transformation

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Overview

- Definition
- Examples
- History
- The Theory: Key “Framework” Findings
- The Practice: Elements to Address

Definition: 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.

Examples of Market Transformation

- **Residential gas furnaces -Wisconsin 1982-1996**
  - **Continued sales without incentives**
- **Commercial lighting: 1985-1998**
  - **T-8/electronic ballasts become standard practice**
- **Manufactured housing - Northwest 1988-1999**
  - **Virtually all manufactured housing shipped as high efficiency**

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
- **Residential window energy ratings 1989-1999**
  - NFRC rating system adopted by large majority of window manufacturers

Examples: Market Changes and Effects

- Increases in the quality, availability, specification, and installation of electronic ballasts and T-8 lamps
- Increases 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

Examples: Market Changes and Effects

- Increases in energy efficient lighting design practices among lighting designers and electrical contractors
- Increases in manufacturer adoption of low-standby power home electronics products
- Increases in consumer awareness, knowledge, and preferences

MT: Who's Doing It?

- Federal – US EPA and US DOE
- Northwest Energy Efficiency Alliance (NEEA)
- Northeast Energy Efficiency Partnership (NEEP)
- New York – NYSERDA
- California - Utilities & CEC
- Consortium for Energy Efficiency (CEE)
- Almost Everyone - Most individual efficiency programs include MT elements

History: Different Motivations for Market Transformation

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

How did we come to Market Transformation? – History I

- First wave of DSM – IRP driven
- Utility Industry Restructuring presumed markets would replace IRP = no more DSM
- Residual policy interest in “public benefits” of regulated, integrated utilities
- Market Transformation replaced Resource Acquisition as the Public Benefit objective
- Energy efficiency funding/programs survived restructuring as MT

Market Transformation History II

- Overreaction-everything became MT – lost some of its meaning
- Backlash where MT became a dirty word
- Paradigm shift occurred with Reliability Crisis
- IRP recognized as 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
- MT fits the bill and is back

The Theory: "A Framework for Planning and Assessing Publicly Funded Energy Efficiency"
February 2001

- Economic Rationale for Energy Efficiency Policy - Miriam Goldberg
- Role of MT in Energy Efficiency Policy Ken Keating
- Effective Design of Energy Efficiency Interventions - Shel Feldman
- Role of Evaluation Play in MT - Jane Peters
- Evaluating Market Effects of MT Interventions - Lisa Skumatz
- Capturing the Dynamics of MT in Assessing Market Effects - Fred Sebold and Alan Fields
- Assessing Cost-Effectiveness of MT - Fred Sebold and Alan Fields

Economic Rationale for Energy Efficiency

- The case for spending public funds on energy efficiency interventions is based on a mix of market failures, including externalities in energy markets as well as failures in markets for energy efficiency products.
- Even if markets for energy efficiency products and services were without failures, there would still be a case for intervention based on externalities.
- Cost-effectiveness analysis should focus on quantifying economic improvements in the markets for energy efficiency products and services, as well as valuing the avoided externalities in the energy market.

The Role of Market Transformation in Energy Efficiency Policy

- Effective energy efficiency policy requires a balanced portfolio of intervention strategies, including infrastructure, research and development, resource acquisition, market transformation, and equity interventions.
- Market transformation may be an effective strategy if there are significant market failures in the market for energy efficiency products and services.
- The mix of the energy efficiency portfolio may vary across markets and over time.

The Design and Economic Assessment of Market Interventions

- Design should involve the articulation of the logic of the initiative.
- Prospective cost-effectiveness analysis for resource acquisition and market transformation intervention should cover the expected levels and timing of energy savings.
- While the ultimate goal of infrastructure and research and development interventions is to reduce energy consumption, it may be difficult to isolate the impacts of these interventions.

Roles of Evaluation in Market Transformation

- A comprehensive evaluation design should integrate formative and summative approaches
- Both types of evaluations should test underlying logic of the intervention
- Summative evaluations should focus on impacts on adoptions and associated energy savings, as well as on other indicators of market effects
- Evaluation approaches should include market tracking, structure and function studies, and benefit studies

Estimation of Market Effects

- Ultimate indicator of intervention market effects is still energy savings.
- Evaluation should encompass process evaluation (formative assessment), market tracking, and impact evaluation.
- Process evaluation remains important under market transformation strategies, although design may differ.
- 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.

The Incorporation of Market Dynamics in the Evaluation of Cost-Effectiveness

- Estimation of market effects is a forecasting exercise.
- Planners/evaluators should use of formal dynamic models to represent the process through which interventions affect energy use.
- The design and implementation of reasonable dynamic models is not new, but formalizes program logic. Because it is not a traditional means of expressing program logic, it will take some time to implement.
- The dynamic model should be used as a framework for evaluating market effects as well as of redeveloping and testing alternative intervention tactics

The Practice: Key Elements of Market Transformation for Programs

- Address market barriers and opportunities
- Seek to effect 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, i.e., uneconomical or behavioral given perceptions about low prices
- Lack of product availability
- Customer confusion and lack of awareness
- Vendor and institutional practices
- Split incentives
- First cost orientation

Design programs to overcome particular barriers

Take Advantage of Market Opportunities

- Manufacturers looking for green, sustainable business strategies
- Whole supply change engaged on efficiency
- Public's attention to climate change and sustainability
- Policy makers increasing turning to energy efficiency
- Market Transformation's time is now

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 & Short-Term Objectives

- Establish *multi-year 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

- Manufacturers
- Distributors
- Retailers
- Contractors
- Builders
- Designers and Specifiers
- Service Industries, Building Managers

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

Track Market Changes and Progress

- Establish baselines of current practices and products
- Assess the current market
- Track indicators of market change and progress
- Look for spillover effects
- Update strategy and program

Coordinate / Leverage Efforts

- Work with others
- Adopt national programs (e.g., product standards, product marketing)
- Establish common goals and objectives
- Conduct joint market research and evaluation

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
- Create value for all partners and participants
- Mix and match strategies to opportunities