NYSERDA Market Transformation Indicators: Policy Context, Development and Application

CPUC Market Transformation Workshop

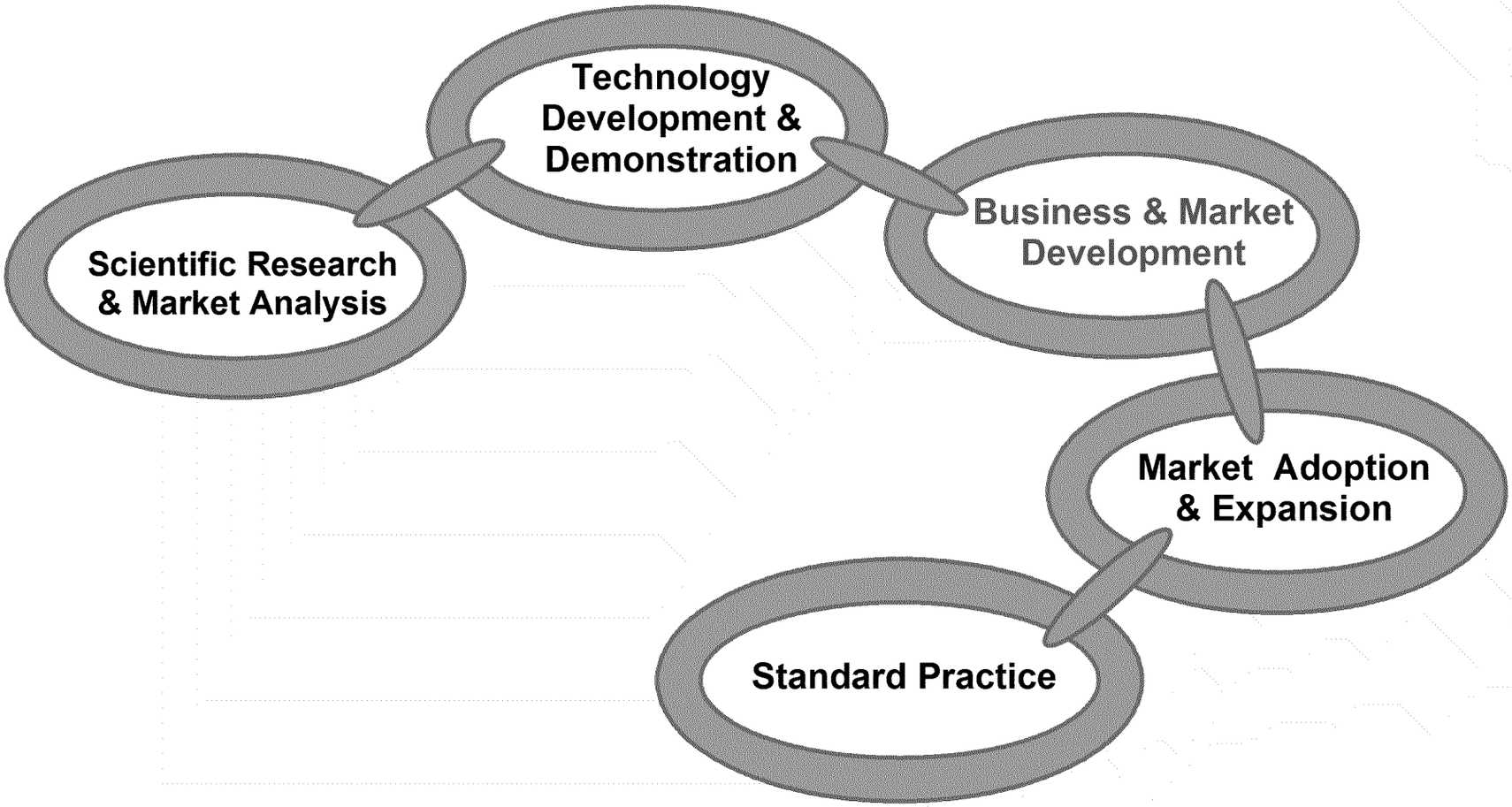
John Williams and Jennifer Meissner
NYSERDA

November 7, 2011

nyserda
Energy. Innovation. Solutions.

How does MT relate to overall objectives/activities and their regulatory environment?

Energy Innovation Chain



nyserda
Energy. Innovation. Solutions.

New York Policy Context

2009 State Energy Plan

- Five public policy objectives

1. Assure reliable energy and transportation systems
2. Support energy and transportation systems that significantly reduce greenhouse gas emissions
3. Address affordability and improve economic competitiveness
4. Reduce health and environmental risks of energy production and use
5. Improve energy independence and fuel diversity

nyserda
Energy. Innovation. Solutions.

System Benefits Charge

Market Transformation – history of programs beginning in 1998

SBC Portfolio Policy Goals:

- Improve energy system reliability and security
- Reduce energy cost burden
- Mitigate the environmental and health impacts of energy use
- Create economic opportunity and promote economic well-being

nyserda
Energy. Innovation. Solutions.

Energy Efficiency Portfolio Standard

Resource Acquisition – previously integrated into MT programs, currently a separate, coordinated effort

EEPS Portfolio Policy Goals:

- “15 by 15” Energy Efficiency Target Goal
- Cost Effectiveness
- Improve energy system reliability and security
- Reduce energy cost burden

nyserda
Energy. Innovation. Solutions.

Technology & Market Development Program

Objectives

- Prove out emerging energy efficiency, renewable, and smart grid technologies/strategies and accelerate market readiness in NY
- Move new/under-utilized technologies and services into marketplace to help achieve EEPS & RPS goals
- Stimulate technology and business innovation to provide more clean energy options and lower cost solutions, while growing NY's clean energy economy
- Spur actions and investments to achieve results distinct from incentive-based programs

nyserda
Energy. Innovation. Solutions.

MT Difficult to Quantify Benefits

- Energy Benefits (in some cases)
- Acceleration through the Innovation Chain
  - "Tipping Point"
- Technology Innovation and Market Acceptance
- Influence on Market Actor Business Model

nyserda
Energy. Innovation. Solutions.

Defining and Tracking MT Metrics and Evaluating MT Programs: Challenges/Lessons Learned

nyserda
Energy. Innovation. Solutions.

Defining MT Indicators

- Program Theory and Logic (PT/L) Models
  - Bottom-up
  - Identify inputs, activities, outputs, short and long term outcomes, external influences and barriers
  - Identify indicators to assess at various points in time to determine whether the program is on track
- Linkage to overall policy goals
  - Top-down
  - Energy impact, affordability and economic opportunity/options for customers

nyserda
Energy. Innovation. Solutions.

Tracking/Evaluating MT (1)

- Program Tracking Databases
  - Basic output measurements, early indicators
- Program Partner Data Trends
  - Primary sales data can be invaluable if it can be reliably obtained over time
- Industry Data Trends
  - Purchased or publicly available data can be useful to benchmark progress

nyserda
Energy. Innovation. Solutions.

Tracking/Evaluating MT (2)

- Market Characterization
  - Building stock, firmographics, energy use
  - Prevailing supply chain, technical service delivery channels, business cycles
  - Market penetration estimates
  - Secondary data (e.g., DOE energy consumption surveys, Dodge, industry associations, etc.)
- Market Assessment
  - Market perceptions, awareness, knowledge, practices, decision making processes, etc.
  - Primary data collection, surveys/interviews
  - Longitudinal analysis

nyserda
Energy. Innovation. Solutions.

Example: ENERGY STAR Products Program Goals

- Expand partnerships to include mass merchandisers, big-box stores, and new retail partners selling home electronics
- Significantly increase market share of ENERGY STAR® and energy-efficient appliances, electronics, and lighting products
- Improve energy efficiency and access to energy options for underserved customers
- Improve system-wide reliability and peak reduction

Source: NYSERDA, Market Support Program – Program Logic Model Report, May 4, 2007, by GDS Associates, Inc.

nyserda
Energy. Innovation. Solutions.

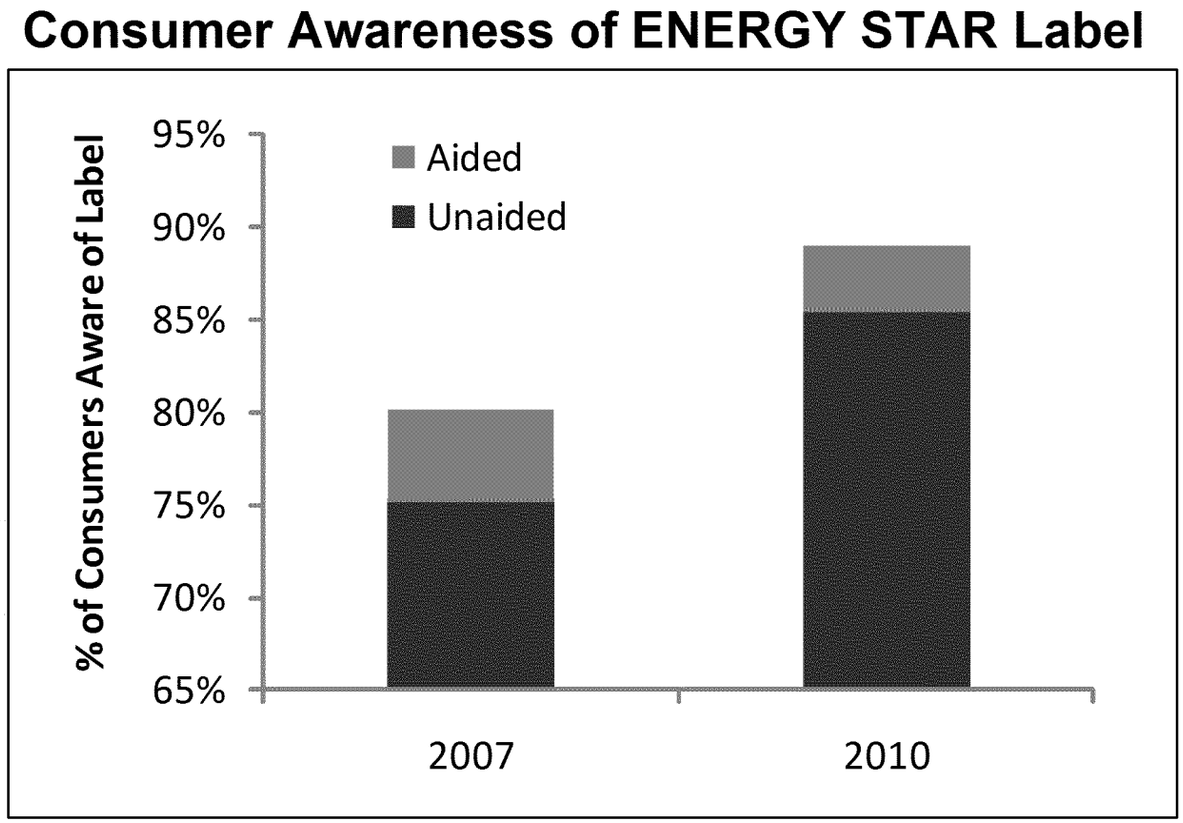
Example: ENERGY STAR Products Select Outcomes & Indicators

	Short Term	Intermediate	Long Term
Outcome	Increased valid information on ENERGY STAR (ES) labeled and high efficiency (HE) products	Retailers, manufacturers and distributors recognize profitability of promoting ES/HE products (without NYSERDA assistance)	Increased proportion of equipment purchased is ES/HE
Indicator	Level of awareness, understanding, attitudes and intentions regarding ES/HE	Retailers, manufacturers and distributors supply and promote high efficiency products	Number and proportion of product sales that are ES/HE
Data Source	Customer Surveys	Surveys/interviews with retailers, manufacturers and distributors Mystery shopping	Retailer data and evaluation of market penetration and program-induced changes

Source: NYSERDA, Market Support Program – Program Logic Model Report, May 4, 2007, by GDS Associates, Inc.

nyserda
Energy. Innovation. Solutions.

Example: ENERGY STAR Products Program Evaluation

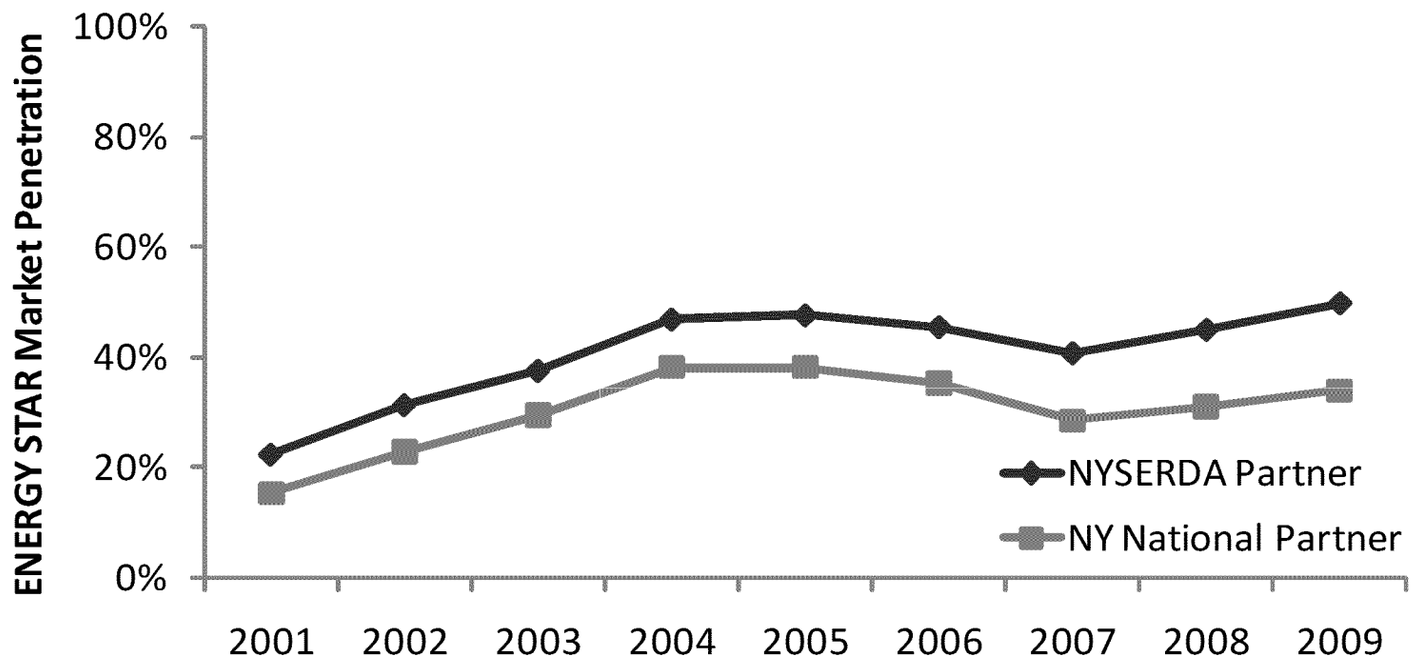


Source: NYSERDA, New York Energy $mart[SM] Products Program Market Characterization and Assessment Evaluation, May 2011, by The Cadmus Group and Navigant Consulting.
End-Use Customer Telephone Survey 2007 (n=894) and 2010 (n=948)

nyserda
Energy. Innovation. Solutions.

Example: ENERGY STAR Products Program Evaluation

Market Penetration of ENERGY STAR Refrigerators by Year and Partnership



Source: NYSERDA, New York Energy $mart[SM] Products Program Market Characterization and Assessment Evaluation, May 2011, by The Cadmus Group and Navigant Consulting.
Lockheed Martin NYSERDA partner and D&R national partner sales data.

nyserda
Energy. Innovation. Solutions.

Key Lessons Learned

- Program Design
  - Effective tracking of program progress/outputs
  - Weigh tradeoffs of requiring primary sales data or other trade ally data from participants
- Evaluation Planning
  - Program Theory and Logic Model is an important early step
  - Longitudinal analysis requires careful planning (indicator data sources, survey question development, etc.)
- Assessing Progress
  - Early, intermediate and long term indicators
  - Qualitative story and evidence of progress along the “innovation chain” rather than a quantitative answer
  - Identify decision points/levels that indicate when to move on or change strategy

nyserda
Energy. Innovation. Solutions.

Questions?

John Williams, Program Director, Energy Analysis

518-862-1090 ext. 3333

jgw@nyserda.org

Jennifer Meissner, Program Manager, Energy Analysis

518-862-1090 ext. 3367

jam@nyserda.org

nyserda
Energy. Innovation. Solutions.