



CAN WE CREATE A REGULATORY FRAMEWORK THAT ENCOURAGES MARKET EFFECTS?

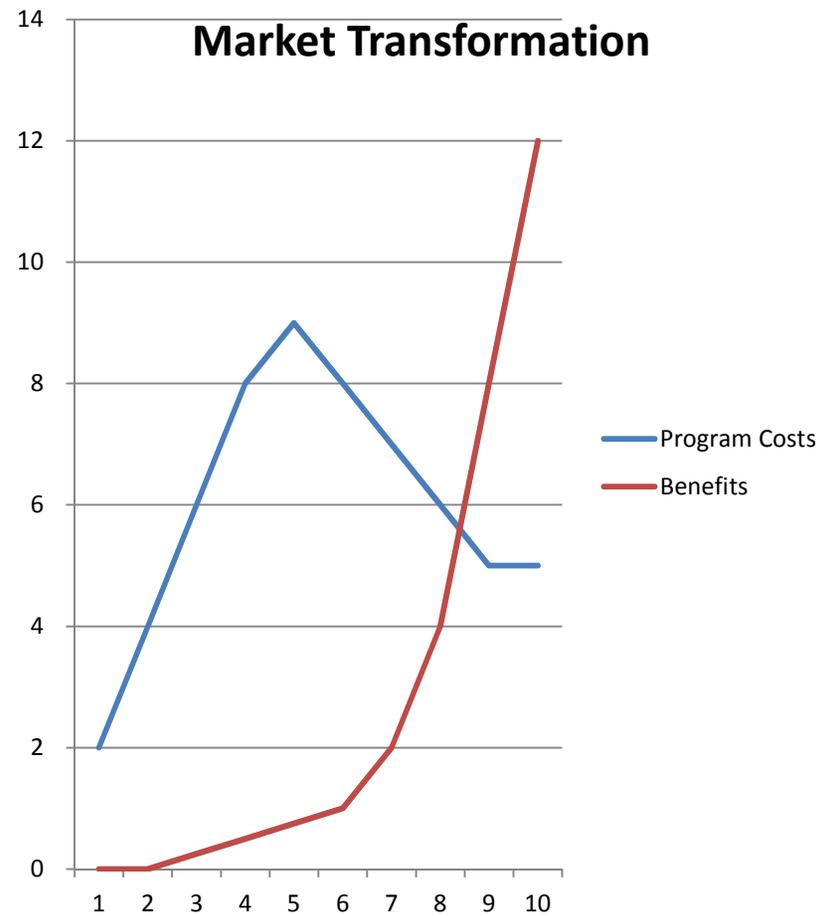
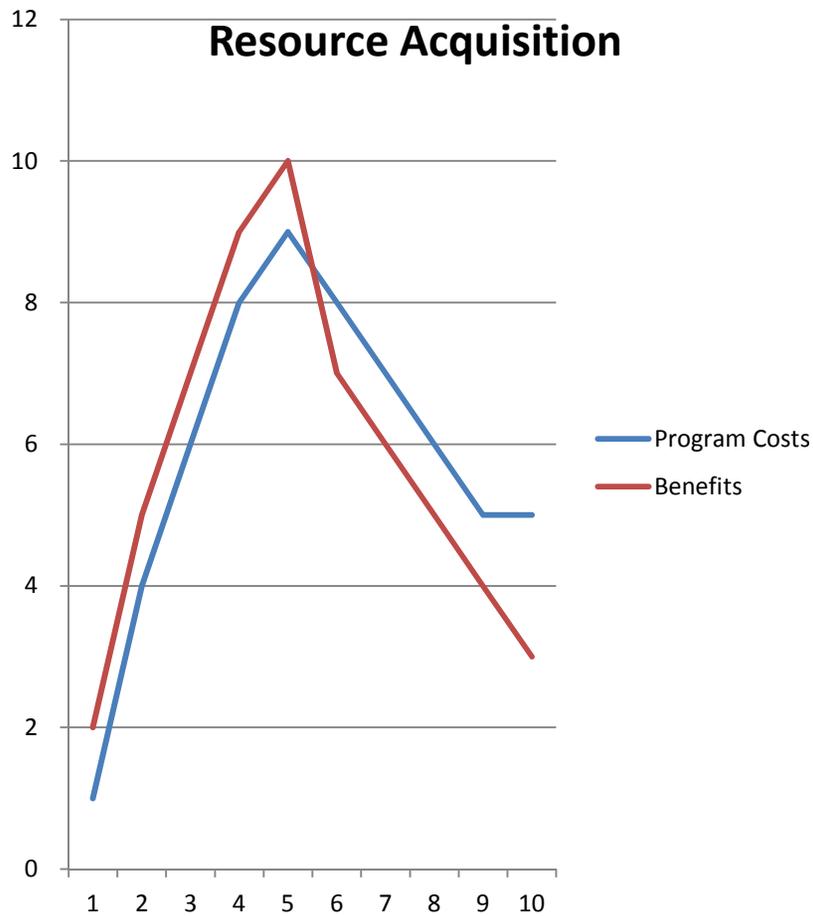
Moderator: Robert M Wirtshafter, PhD, Wirtshafter Associates, Inc.

Panelists: Ken Keating, PhD, Independent Consultant
Ralph Prah, Ralph Prah & Associates
Brian Arthur Smith, Pacific Gas and Electric Company
Jennifer Meissner, NYSERDA

One of Many Definitions of Market Transformation

“Long-lasting sustainable changes in the structure or functioning of a market achieved by reducing barriers to the adoption of energy efficiency measures...”

Resource Acquisition Vs. Market Transformation



Examples of Successful Market Transformation

- Super Efficient Refrigerator—Golden Carrot—1992-1996
- Horizontal Axis Efficient Clothes Washer—1994-2002
- NEMA Premium Motors 1995-1999
- NEEA Energy Star Windows
- Building Operator Certification—1997-2002
- Vending Machine Federal Standards—1998-2008



California White Paper on Market Transformation Policy Issues: Highlights

Ralph Prahl

Ken Keating

2015 IEPEC Conference — Long Beach, California

Contents of White Paper

- Overall topic: how can California's policy framework be updated to more fully support MT initiatives?
- A wide range of policy issues explored, including:
 - Role of MT initiatives in overall policy framework
 - How RA and MT can peacefully coexist
 - Who should administer MT initiatives
 - Risk management
 - Evaluation and cost-benefit analysis
 - Shareholder incentives
- Specific to California, but much is also applicable to other states

First, Two Key Terms

- **Resource Acquisition (RA)** attempts to produce near-term savings as reliably and predictably as possible
 - Buying savings one kWh at a time
 - Financial incentives tend to play a central role
 - Focus tends to be on **first year** savings
- **Targeted Market Transformation Initiatives (MT)** attempt to produce sustained increases in the adoption of EE technologies and practices through structural changes in the market and in behaviors of market actors
 - Tend to involve a wider range of marketing approaches than RA
 - Success takes 5-10 years to achieve
 - Riskier than RA, but may produce outsized long-term gains

MT Initiatives: What We're **Not** Talking About

- Market effects stemming from resource acquisition efforts
- Naturally occurring evolution in markets
- Many other concepts that have been attached to the phrase “market transformation”

Key Question #1: What kind of role should MT play in an overall policy framework?

■ Our answer:

- Experience shows that MT is a valuable component of a balanced and cost effective energy efficiency portfolio
- However, MT is best approached as an ***intervention strategy*** or ***policy tool rather than as a policy objective***

■ Treating MT as a policy objective is a **mistake**:

- Does not recognize that not all markets are in need of, or susceptible to, being transformed
- Tends to pressure program administrators to fit all programs into an arbitrary framework

Key Question #2: What should be the relationship between MT and RA in a policy framework?

■ Our answer:

- RA and MT can and should coexist within the same policy framework
- However, it is critical to:
 - Recognize the way these tools can undercut each other, and design policy environment to safeguard against this
 - Respect the differences between what each program type can accomplish, with neither expected to do the work of the other
 - Don't expect MT to generate quick, reliable savings
 - Don't expect RA to transform markets
 - Don't try to deploy both in the same market at the same time without close coordination

Key Question #3: Who should administer MT initiatives?

■ Our answer:

- Recognize that, in most states, IOUs face particular challenges in administering MT initiatives
- Either explicitly address these challenges in the policy framework, or assign responsibility for MT initiatives to other parties

■ Rationale:

- IOUs are customer-facing enterprises – better adapted to marketing to end-users than to trying to alter entire markets
- As publicly listed corporations, IOUs subject to short-term pressures
- Tensions with IOU resource acquisition responsibilities
- Probably for the above reasons, there are relatively few success stories for MT initiatives administered solely by IOUs



The Retail Plug-Load Portfolio (RPP) Concept ¹²

What is RPP?

- A midstream, portfolio-based program design that addresses growing plug load and appliances with the ultimate goal of reducing unit energy consumption of products sold at retail.

Short-term trial objective: Resource Acquisition

- Motivate participating retailer to promote and sell more efficient models.

Long-term objective: Market Transformation

- Motivate retailers to demand, stock, and promote the most efficient models available from their manufacturer partners.



DVD/Blue-Ray
Players



Soundbars/Home
Theatres-in-a-Box



Air Cleaners



Room ACs



Refrigerators



Freezers

Differences between RA and MT

	Resource Acquisition	Market Transformation
Scale	Program	Entire defined market
Target	Participants	All consumers
Goal	Near-term savings	Structural changes in the market leading to long term savings
Approach	Save energy through customer participation	Save energy through mobilizing the market
Scope of Effort	Usually from a single program	Results from effects of multiple programs or interventions
Amount of Program Administrator's control	PAs can control the pace, scale, geographic location, and can identify participants in general	Markets are very dynamic, and the PAs are only one set of actors. If, how, where, and when the impacts occur are usually beyond the control of the program administrators.
What is tracked, measured, and evaluated	Energy use and savings, participants, and free-ridership	Interim and long term indicators of market penetration and structural changes, attribution to the program, and cumulative energy impacts.
Timeframe for cost-effectiveness	Usually based on 1st year or cycle savings	Is usually planned over a 5 -10 year timeframe

Key Question #4: How can risks associated with MT initiatives be managed?

- **Our answer:** manage risks by:
 - Balance portfolio between RA and MT
 - Establish a rigorous up-front vetting process for MT initiatives
 - Continuous evaluation to decide whether to maintain course, alter direction, or abandon the effort
 - Collaboration with other jurisdictions and entities
 - Allocate risks rationally across stakeholders
 - Do not attempt to impose all of the risk on program administrator

Key Question #5: Do cost-effectiveness methods need to be changed to support MT initiatives?

- **Our answer:**
 - No need for fundamental changes to cost-benefit analysis framework
 - DO need to change the handling of individual inputs
- Both costs and benefits need to be analyzed using a **much longer time-frame than for RA programs**
 - Costs tend to be front-loaded
 - Benefits tend to take a long time to fully realize
- Forecasting cost-effectiveness may require close attention to incremental cost trends both with and without the program
- Recommend doing sensitivity analyses in recognition of the uncertainties
 - (For example, vary baseline, future costs, size of market uptake)

To Access California MT Policy White Paper Directly

- Go to CPUC public documents area:
<http://www.energydataweb.com/cpuc/home.aspx>
- To locate, click on “Search,” select “2013-14” Portfolio Cycle, and type “market transformation” into the Search Text box

Recommendation on Selecting MT Initiatives: Identify and Vet MT Initiatives

■ **Scanning for MT Opportunities**

- Core function of MT Program Administrator
- Requires diverse strategies and non-trivial share of total budget for MT initiatives

■ **Determining which opportunities to pursue**

- Proponents of MT initiative have key evidentiary burden
 - Detailed program theory
 - Clear understanding of target market
 - How, when and in what manner the target market will be transformed

■ **Proposals for MT initiatives should include:**

- Clear vision of desired end-state for market
- Discussion of anticipated exit strategy

Recommendations on Progress Tracking and Evaluation

- **Industry consensus on evaluating MT initiatives**
 - Detailed program theory specifying which market indicators will change when
 - Evaluation focuses on consistency of what actually happens with program theory
 - Need mix of leading and lagging indicators
- **Leading market indicators must be identified**
 - Vetting process should require advocates to propose indicators
 - Regulators should serve as judges (not primary developers) of proposed indicators
 - Persuasive indicators a key criterion for acceptance of initiative

Evaluation (continued)

□ **Attribution**

- Focus on forecasting overall measure adoption both with and without initiative
- Design impact evaluation activities to inform and improve these forecasts

□ **Gross Savings Parameters**

- As with RA, need reliable ex-ante assumptions for gross unit savings
- Also use evaluation activities to estimate total potential size of the market, in order to help determine pool of possible savings

□ **Institutional Considerations**

- Include staff with expertise in marketing, economics, program design and specific EE markets along with engineering