Standardizing Approaches to Market Transformation Evaluation Practices

2000 California Framework and 2003 Wisconsin Evaluation

Miriam L. Goldberg

ACEEE/CEE
National Symposium on Market Transformation
April 14–15, 2003
Washington, DC

KEMA - XENERGY

KEMA

CA 2000 Framework Background

- Context:
  - Retail electric competition
  - Market transformation emphasis in utility EE programs
  - Regulatory protocols for evaluation
  - Public Purpose Test (PPT)
    ← Societal Test ← TRC Test
- Questions addressed included
  - How to value market effects
  - Timeframe for evaluation
  - Dealing with increased uncertainty
  - Need different b/c methods for planning vs retrospective evaluation?

Key Framework Conclusions for B/C

- Value of MT programs is driven by ultimate energy savings
- PPT has all the necessary elements
- Need analysis at market/portfolio level
- Multi-year timeframe needed for MT
  - **Requires prospective dynamic models**
  - **Logic models are key**
- Many parameters uncertain
  - **Use models / scenario analysis to frame what we do know**
- Can use same models for planning and evaluation
  - **Revising parameters over time based on evaluation**
- Program attribution is still key

WI 2003 Background

- Context:
  - Regulated retail electricity
  - Statewide program delivery and evaluation
    - under state contracts (Dept of Admin)
  - Focus on Energy balances MT and RA goals
  - Vision/Mission/Goals task force developing guidelines

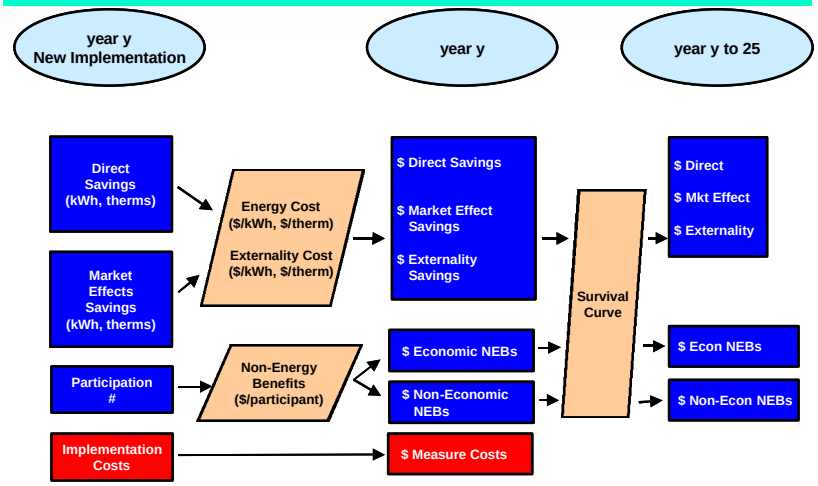
Benefit/Cost Tests Used

- Cost = total program spending
- Benefit = net of positive and negative changes to households and businesses
  - Simple B/C
    - Sum of positive savings less incremental costs to end users
  - Multiplier B/C
    - Counts the same benefits and end-user costs
    - Model net effect on the state economy via economic impact model

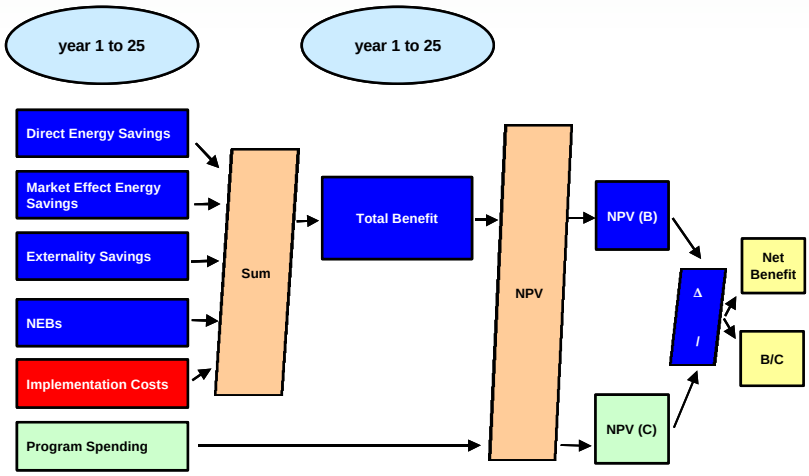
Positive Benefits

- Direct energy savings
- Market effects energy savings
- Avoided externalities
- Non-energy (implementer) benefits
  - Economic: dollar flows in the economy
  - Non-economic: have perceived value to implementers, but no money flows
- Incentive payments to program participants
  - Included in total program spending (cost)
  - Also counted as benefits to the implementers who receive them

Developing Input Streams



Simple B/C Test



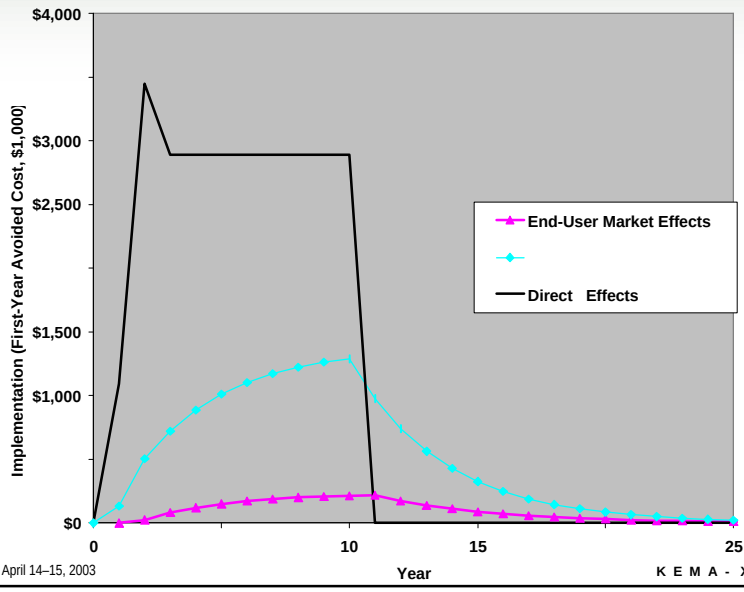
Where Do We Get the Inputs by Year?

- Costs: assume funding levels next 10 years
- In-program savings: funding x
  - kWh/$ spent
  - Based on most recent 12 months evaluated
- Market effects savings
  - Near-term estimates
    - **Planning estimates**
    - **Spillover/market analysis**
  - Long-term estimates
    - **Dynamic model**
    - **Pegged to near-term results and projected program activity**
- NEBs, environmental, implementation costs
  - Proportional to in-program and ME energy savings

Dynamic Models
"Pro Forma" Market Effects Estimates

- End-user Model
  - Modified Bass diffusion model
    - $f_t = (1-d)f_{t-1} + p(1-f_{t-1}) + qf_{t-1}(1-f_{t-1})$
  - Parameters calibrated to historic and current data
  - Model with and without Focus
  - Difference is effect of Focus
- Supplier model of incremental EE sales
- Adjust for overlap

Direct & Market Effect Savings Projections



Setting and Tracking Goals

Goal Type	Years from Measurement Start		
	1	3–5	5–8
Resource Acquisition			
Energy Savings	Most	All	All
Market Effects			
Short-term Effects	All	All	All
Long-term Effects		Most	All
Energy Savings	Rare	Most	Most

Rare
Some
Most
All