



Modifying California's Traditional Resource Acquisition Benefit- Cost Analysis to Accommodate Market Transformation Programs

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The PG&E Plug Load Portfolio Program: A Market Transformation Program

- Provides retailers with incentives to promote energy efficient appliances and consumer electronics
- Goal is to alter the behavior of key market actors throughout the supply chain to achieve sustainable savings at the market level
- Designed to run for ten years

Benefit-Cost Analysis Is Challenging for MT Programs

- Current California B/C assessment is designed for resource acquisition programs
 - Run for one to three years
 - Key parameters assumed to be fixed
- For MT Programs
 - Benefits and costs are dynamic
 - Run for 10 to 15 years

Modifications

- Rather than changing the model, we modified the calculation of the inputs
- Approach allows for key parameters to change over time
 - Benefits
 - PG&E administrative & marketing costs
 - Incremental costs
 - Incentives
- NTGR is based on a 10-year forecast of savings with and without the program

Current TRC

■ PV of Costs

- Administration & marketing
- Incremental costs adjusted upward using the market-effects-adjusted net-to-gross ratio (MEA_NTGR)
- Rebates and incentives to freeriders

■ PV of Benefits

- Adjusted upwards using the MEA_NTGR

Revised Benefits

- Based on a 10-year forecast of the sales using the Generalized Bass Diffusion Model
- Forecasted sales are multiplied by the associated Unit Energy Savings (UES)
- Then multiplied by the stream of avoided costs

Revised Administrative Costs

- Continue for the ten years decline over time as program operations become more efficient
- Present value is entered into B/C calculator

Revised Incremental Costs

- IMCs and retailer incentives extend over 10 years and decline
- The levelized costs for the IMC entered into E3 Calculator

Retained Retailer Incentives

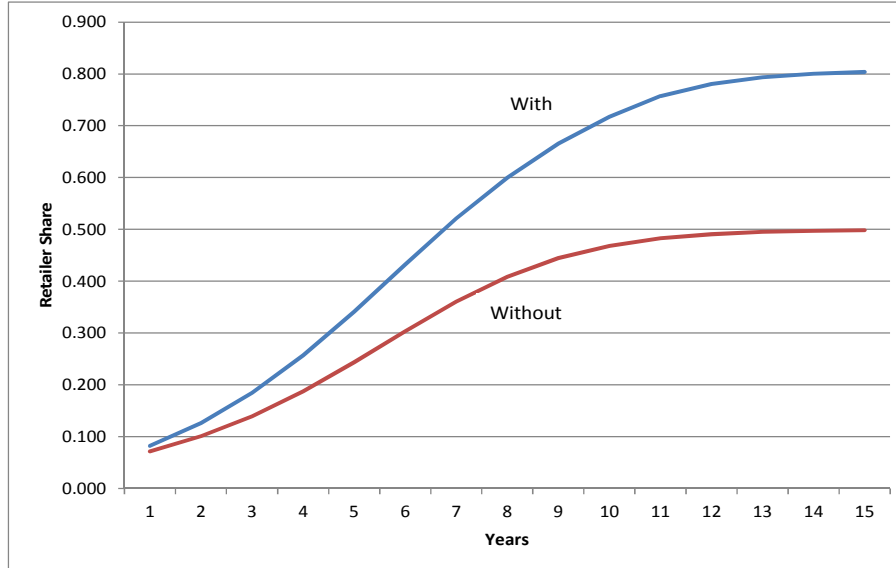
- Incentives decline over time
- Retailers will retain some of the incentives and pass some percent along to the customer as a buy-down
- Percent retained based on expert judgment
- The levelized cost for the customer buy-down is entered into the E3 Calculator
- The levelized cost of the retained incentive is added to the utility incentives and the incremental costs

NTGRs

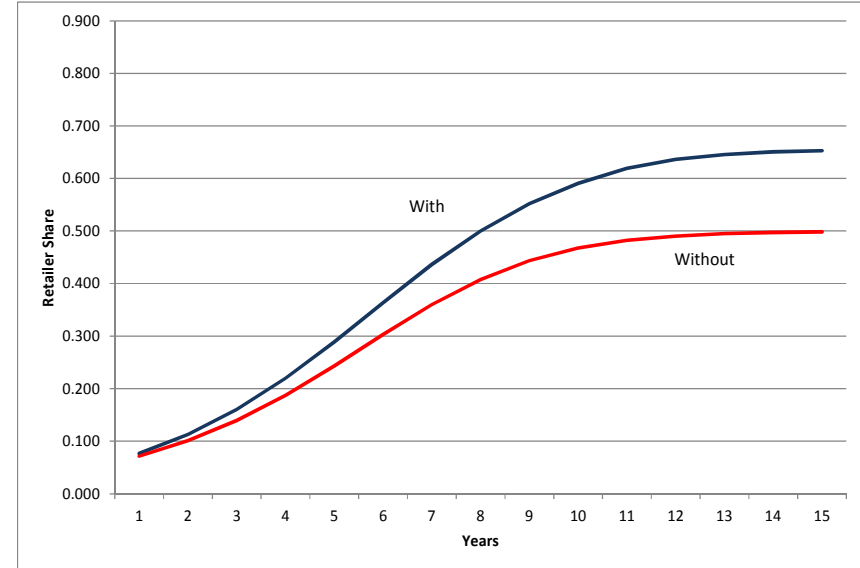
- The MEA_NTGRs, NTGRs (i.e., 1-FR) and nonparticipant spillover (NPSO) rates estimated for each product category using the same Generalized Bass Diffusion Model mentioned earlier.
- Based on a 10-year forecast of sales *with* and *without* the program
- $MEA_NTGR = NTGR + NPSO$

Market Share Scenarios for Participating and Nonparticipating Retailers: Gas Clothes Dryers

Participating Retailers



Nonparticipating Retailers



Conclusions

- High level of uncertainty regarding gross sales of program-qualified models, the MEA_NTGR, the NTGR and the TRC
- They should be recalculated annually based on:
 - On-going theory-driven evaluation
 - Recorded customer buy-downs, retained retailer incentives, and administrative costs
 - The most recent estimates of incremental measure cost
 - The results of the on-going literature review

Resources

- <http://www.caltf.org/tf-meeting-materials>
- Search on “RPP” to find relevant documents such as:
 - Trial Phase I Evaluation Results
 - Evaluation Plan for the Phase II RPP Pilot
 - Benefit-cost documentation
 - RPP Program Theory and Logic Model
 - Net-to-gross presentation
 - Incremental measure cost presentation