



# Net Savings for California's Investor Owned Utility Programs

**California Public Utilities Commission**

Tim Drew [tim.drew@cpuc.ca.gov](mailto:tim.drew@cpuc.ca.gov)

Staff Analyst, Energy Division





# Energy Efficiency Program Goals

- Statewide energy plan (Energy Action Plan)
  - Reliable, affordable, and environmentally sound energy system
  - Energy resource loading order
  - EE as the top priority
- Utility EE portfolio savings goals
  - Modeled using assumptions about EE technology saturation, adoption, and program incentives
  - 70% of the economic potential / 90% of the maximum achievable potential for 10 years
- Energy Efficiency is a key element of climate change mitigation efforts





# Energy Efficiency Policy Mechanisms

- Full EE program cost recovery
- Decoupling
  - Revenue independent of sales
- Shareholder Incentives
  - Utility receives earnings for a share of incremental resource benefits, assuming goals are met.
  - Calculating incentives requires measure level gross savings and life cycle estimates





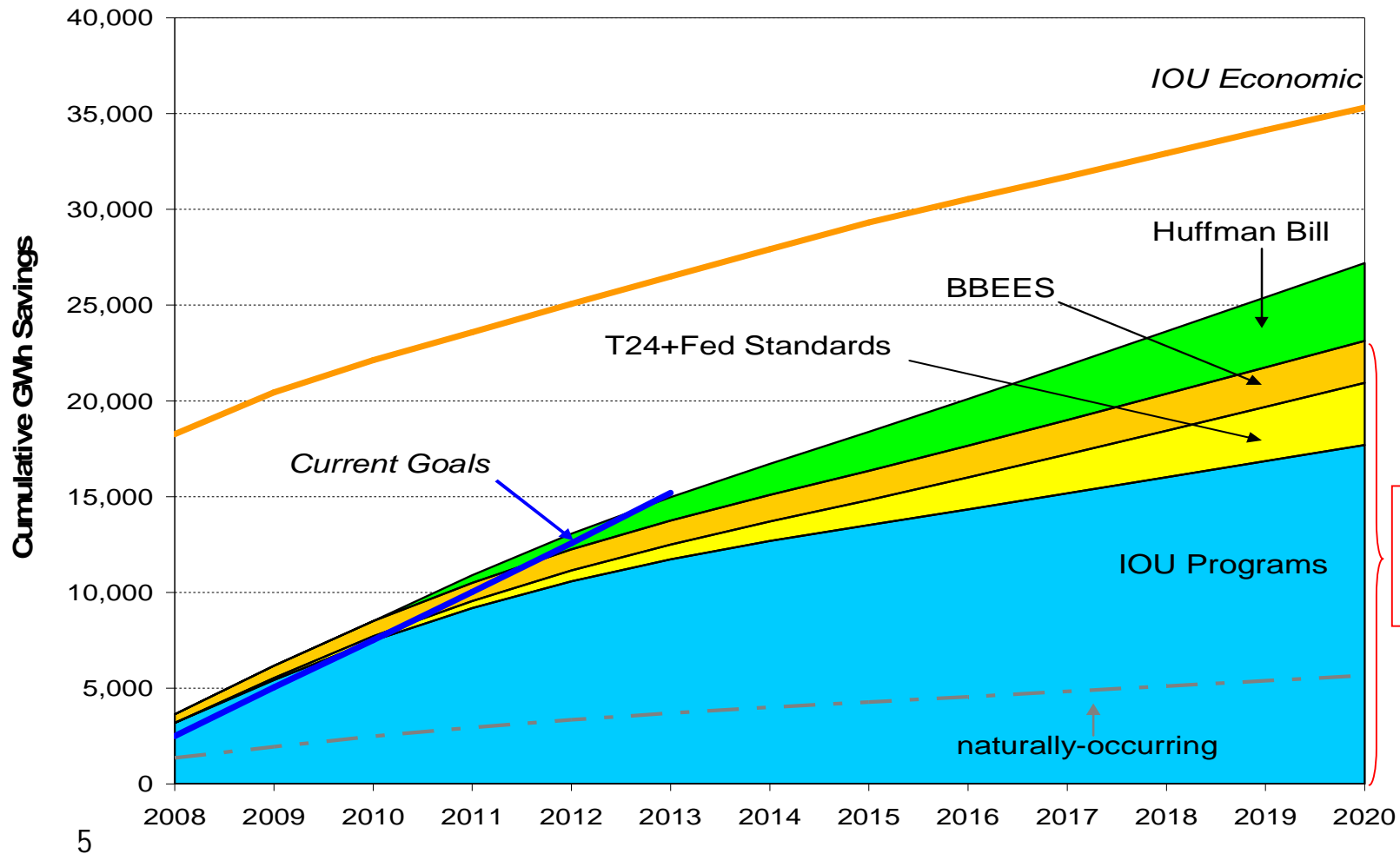
# Why the CPUC Estimates Net Savings

- Energy Efficiency Resource Procurement
  - Program savings should be incremental to “naturally occurring” energy efficiency and other influences external to the program
- Program Design Considerations
  - Determining whether programs effectively target incremental savings
  - Discouraging expenditures on projects that have already been planned and implemented by the end-use customer
  - Determining when the program has run its course
- Utility Shareholder Earnings
  - Providing earnings to utilities only for benefits directly created by the program





# Why the CPUC Estimates Net Savings



savings eligible to be partially claimed by IOUs





## Only free-ridership is considered

- An estimate of the proportion of free-riders is netted out of the gross savings in the program forecast
- The free-ridership estimate is modified after program completion for calculating incentives and planning programs
- Non-participant spillover (Market Effects) and participant spillover are studied on a pilot basis





## Is *Net of Freeriders (NTFR)* the complete picture?

- There are possible indirect effects that aren't accounted for
  - Market Effects / Non- Participant Spillover
    - The Commission views market effects as less reliable due to multiple factors (not just utility programs) that drive the efficiency effects which make isolating program influence difficult.
  - Participant Spillover
    - The Commission has concerns about the availability of data, the credibility of estimating savings, the incremental benefit from doing so relative to any evaluation costs





# Methods for Determining NTFR for 2006-2008 Programs

- Assessed high impact programs
- Detailed surveys administered to program participants
- Analyzed using standardized algorithms
- Consistency checks where possible





# Methods for Determining NTFR for 2006-2008 Programs

- Consistency checks
  - One or more questions designed to validate reliability of survey responses
  - Evaluating standard practice for the industry
  - Interviews and data from multiple staff, vendors, purchasing agents, and installers
  - Review of program and correspondence files
  - Incremental equipment costs relative to program rebate
  - Estimates of the equipment market share and saturation





# Methods for Determining NTFR for 2006-2008 Programs

- Multiple Methods: Upstream Lighting (CFL) Program
  - In-store shopper intercept surveys
    - Shoppers who had just made a lighting purchase
    - Randomly recruited shoppers
  - In-depth surveys of manufacturers, retail buyers, and retail store managers
  - Econometric models
  - Sales analysis - regression model to predict CFL sales of a function of program activity





# Findings and Results from 2006-2008 Industrial NTFR Studies

- Program arrived late in decision making process and offered incentives for projects that had already been decided
- Participants initiated projects for non-energy savings reasons
- Program incentives offered for measures and technologies that are industry standard practice
- Participants implemented projects in response to mandates from other regulatory agencies, for example, citations from air resource districts
- *Evaluated Net Savings = 27% to 40% of Claimed Net Savings*





# Reactions to NTG Results

- A significant factor in potentially reducing utility earnings (not the only one)
- Utilities and program implementers question reliability of results
  - Social desirability bias
  - Respondent recall
  - Identifying correct respondent





# Market Effects Pilot Studies

- The CPUC conducted an extensive evaluation of the program effects on the CFL market
  - Comparisons between CA and states without programs (GA, KS, and PA)
    - Telephone, in-home, shelf stocking, retailer surveys
  - Interviews with participating manufacturers, retailers and program managers
- Results
  - No evidence that market effects in the form of energy savings can be unequivocally claimed or quantified due to the programs for the 2006-2008 time period





# What's next for the CPUC

- Gross savings goals (*starting 2010*)
- Expanding scope of EM&V (*Starting 2010*)
- A new earnings mechanism (*starting 2011*)
- Implementation of the climate change program (*starting 2012*)
- Credit for behavior programs, participant spillover, and market effects (?)





# Some Recommendations

- More rigorous oversight of program implementation
- Savings goals should identify what is possible and serve as aspirational goals
- Load forecasts should account for changes in energy consumption over time
- Attribution for program design and determining exit strategies
- Utility incentives: reward for performance or regular earnings?





## For more information...

Feel free to contact me directly

Tim Drew

[tim.drew@cpuc.ca.gov](mailto:tim.drew@cpuc.ca.gov)

Mobile: 415-516-9960; Fixed 415-703-5618

A ***wealth*** of information courtesy of the CA utility ratepayers at:

- [www.cpuc.ca.gov/puc/energy](http://www.cpuc.ca.gov/puc/energy)
- [www.energydataweb.com/cpuc](http://www.energydataweb.com/cpuc)
- [www.calmac.org](http://www.calmac.org)
- [uc-ciee.org/energyeff/energyeff](http://uc-ciee.org/energyeff/energyeff)

