

# **Determination of Net Savings to Support Ambitious Multi-Year Goals in Massachusetts**

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**DRAFT: For review by EEAC Councilors**

# Introduction: Two Reasons for Discussing the Approach to Net Savings

- DPU Notice of Investigation (NOI), DPU 11-120.
  - The Department will investigate in this proceeding the extent to which the existing approaches to estimating net savings produce accurate and reliable results.
  - If the Department concludes that the existing approaches are deficient in this regard, this investigation will examine alternate ways to determine net savings estimates.
  - Comments due January 31, 2012.
- In parallel, informal discussions exploring whether the current approach to estimating net savings will accurately capture the effects of the multi-year, multi-faceted EE programs and initiatives *going forward*, and if not, what approach would be most effective?

# Background – Why is This Important Now?

- Massachusetts has set very high goals for energy and climate policies, with energy efficiency as the primary and most important energy resource in achieving these goals, annually and through 2020 (and beyond).
- Electric savings goals in Clean Energy and Climate Plan grow from 2.4% in 2012 to 2.9% in 2018-2020.
- Energy efficiency is the fastest-growing resource in MA, and EE programs will provide about 30% of the energy resources needed to meet customer energy needs in 2020 (MA is counting on EE to be very real).
- EE is no longer in the noise, and EE programs no longer have the luxury of being in the noise.
- Opportunity exists now, for next Three-Year Plans.

# Near-Term and Longer-Term Objectives

Focus on achieving the energy & climate goals throughout the decade



Energy Efficiency Three-Year Plans to achieve the GCA Goals



DPU NOI: Investigation of net savings and alternative approaches for determining net savings estimates

EE Objective: Accurate counting and reporting of savings from all EE policies, programs, strategies & initiatives

2020 Objective: Accurate counting and reporting of all EE policies, programs, strategies & initiatives



Decade-long Clean Energy & Climate Plan to achieve GWSA goals



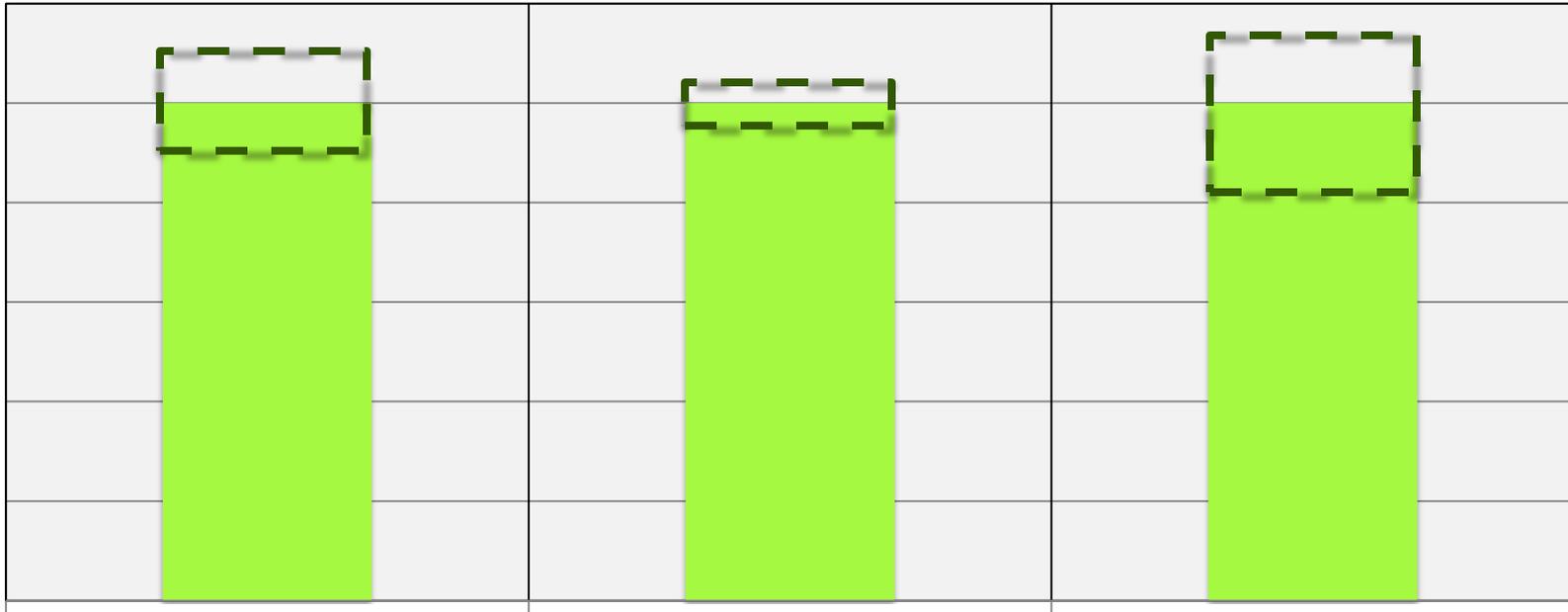
Counting on EE to meet about 30% of energy resource needs in 2020

# Key Principles and Objectives

Principles for any consideration (by DPU or EEAC) of changing the approach to estimating net savings:

1. Provide accurate and reliable results, which neither over-count nor under-count the effects of EE programs
2. Continue using EM&V to determine and report results
3. Ensure timely reporting (shortly after end of the year)
4. Focus on achieving the Commonwealth's *energy* and *climate* policy goals throughout the decade (and do not focus just on single-year or three-year goals)
5. Enable strategic approaches for achieving savings and benefits for customers over longer timeframes (e.g., what are the best strategies over the decade?)
6. Encourage cost-efficiency in the use and investment of ratepayer funds

# Types of “Adjusted” Gross Savings



## Adjusted Gross Savings

### Adjustments:

"Adjustments" are defined by the user  
(This is a general term)

## Verified Gross Savings

### Adjustments:

Number of measures actually installed  
QA/QC findings

## Evaluated Gross Savings

### Adjustments:

Number of measures actually installed  
QA/QC findings  
In-field evaluation measurements, e.g.

- In-service rates
- Watts/unit or usage/unit
- Hours of operation
- Realization rate
- Peak coincidence/diversity
- Custom project performance

# Summary of Recommendations – NOI (1)

1. The extent to which existing approaches to estimating net savings produce accurate and reliable results.
  - The current approach produces reasonably accurate and reliable results for *current and past* programs. However, the current approach is unlikely to accurately capture the effects of *future* programs and initiatives developed and implemented to achieve high savings goals across multiple years throughout the decade.
  - Specifically, the current approach, which primarily consists of a snapshot of near-term program impacts within an EE program year, due to EE program efforts in that year (narrow single-year snapshot view with net-to-gross adjustments applied retrospectively), will not accurately capture the effects of the multi-year, multi-faceted programs and initiatives *going forward*. Yet these types of future programs and initiatives will be crucial in achieving the high energy savings goals across multiple years in 2012-2020.
  - (See slides # 9-15)

# Summary of Recommendations – NOI (2)

## 2. If the existing approaches are deficient, examine alternate ways to determine net savings estimates.

Consultant recommendation for alternate approach:

- Forward-looking resource planning approaches and tools, i.e., multi-year view, total impacts from all multi-faceted policies, & reference to forecasts (to make sure everything is counted and accounted for)
- Focus on a new approach to “net savings” – hybrid of evaluated gross savings (retrospective) with the savings baselines accounting for “naturally occurring” EE and codes/standards upfront (prospective)
- Net savings = evaluated gross savings adjusted by savings baselines
- Evaluated gross savings based on verification (number of actual measures installed) and in-field evaluation results (retrospective)
- No retrospective application of net-to-gross factors for program impacts
- Periodic assessments of near-term EE program impacts (to ensure program expenditures are having an impact and ratepayer money is not being wasted by paying for things that would happen anyway)
- (See slides # 9, and 16-22)

# Four Things to Keep in Mind

1. What is the primary purpose for the savings estimate (e.g., near-term impacts, longer-term total impacts, program efficacy, performance incentives)?
2. What is the relevant time period or time horizon (e.g., single year, three-year, multi-year, decade)?
3. What is the basis and approach for net savings (what is included and adjusted for in the savings numbers)?
4. Will adjustments (EM&V, verification) to the savings estimate be applied prospectively or retrospectively?

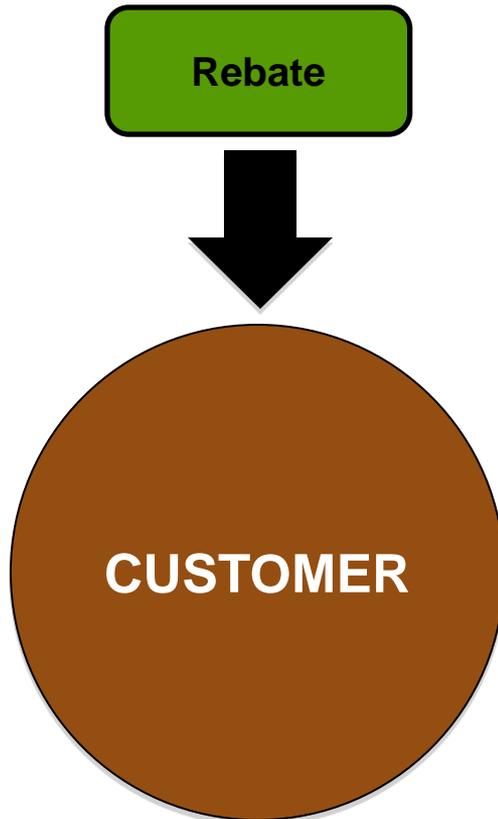
***KEY Q: How best to match up the savings basis (#3) and the prospective/retrospective application of the savings adjustments (#4) to the primary purposes (#1) across the relevant time horizon (#2)?***

# What Are the Key Challenges?

- Going forward, the current approach to net savings will not adequately support or align with the energy and environmental policy goals, or the timing of the goals
- Increasingly, the current approach will not count all of the effects of the multi-year, multi-faceted, multi-initiative EE efforts, leading to “orphaned savings” (and it is best to not over-count or under-count)
- Two key concerns:
  1. **Single-year snapshot accounting** will not adequately support or accurately represent the multi-year, multi-faceted, multi-initiative EE efforts, and distracts focus and resources from the multi-year efforts
  2. **Program net savings** in the current approach, based on a snapshot of near-term program impacts within an EE program year, due to EE program efforts in that year (narrow single-year snapshot view with net-to-gross adjustments), will not count or capture all of the effects

# The Evolving *EE Programs, Strategies, and Initiatives* Drive These Concerns

## Old EE Programs

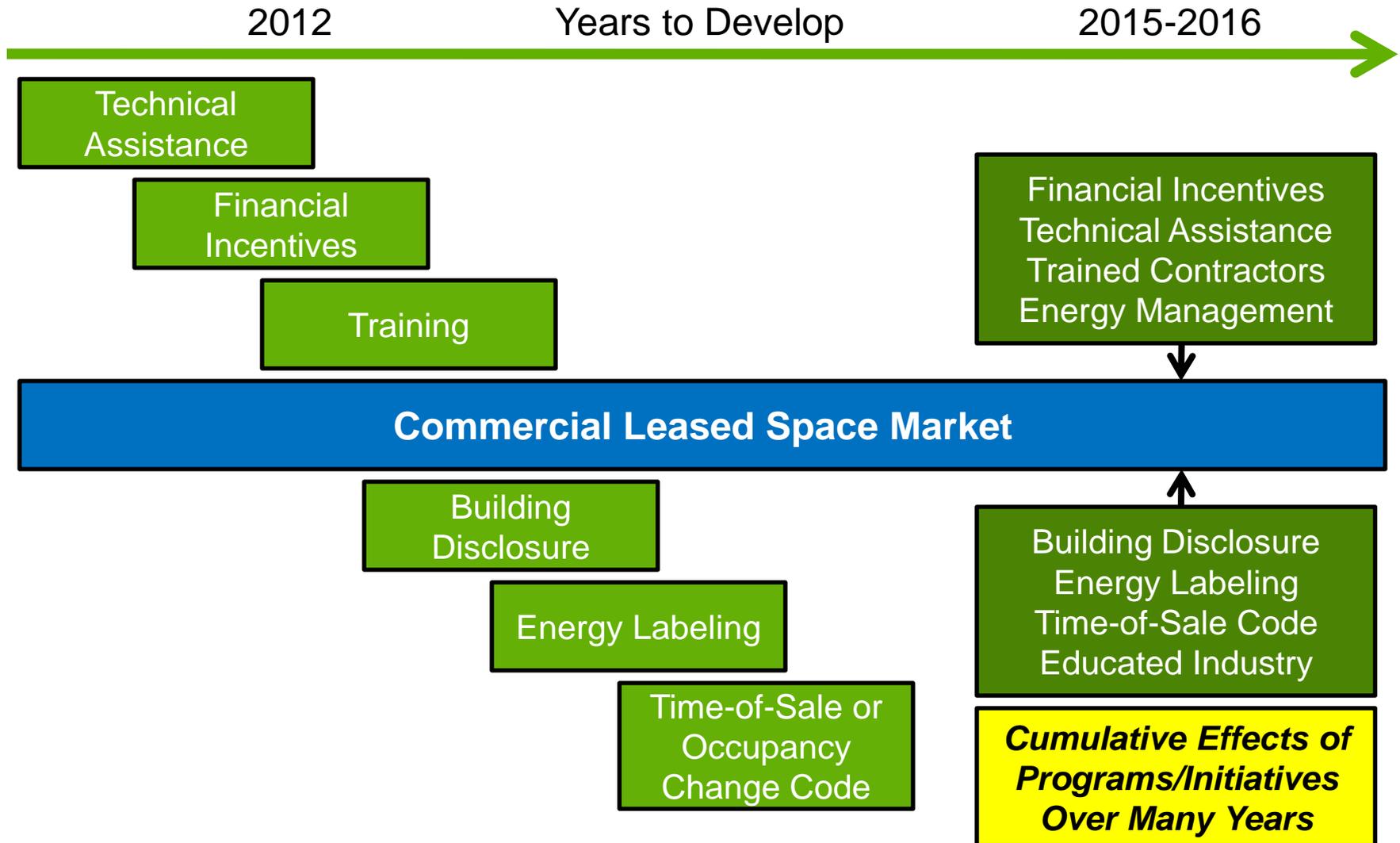


Note: original EE policies were developed when programs used rebates as sole/primary strategy

## New EE Programs & Strategies

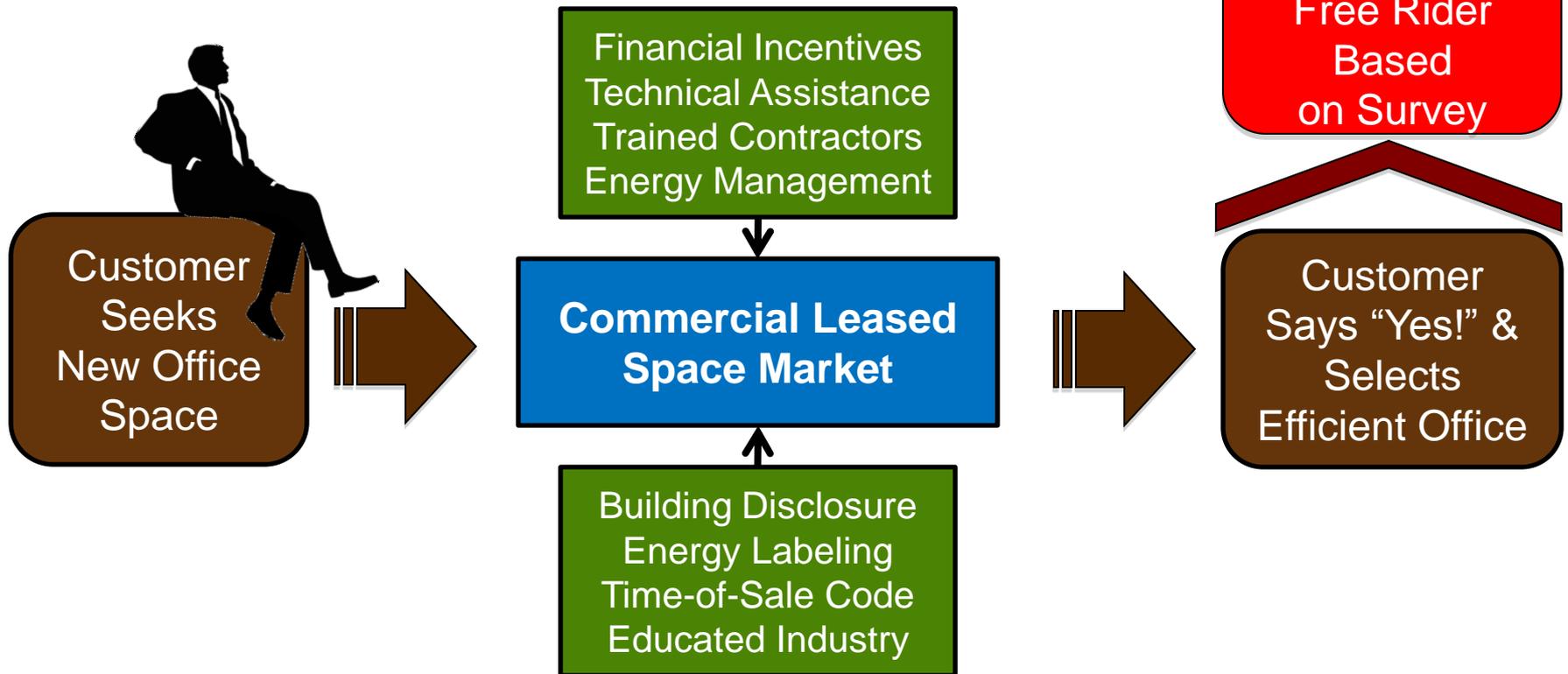


# Example: Programs and Initiatives are Developed & Implemented Over Time



# Result for C&I Customer with New Programs & Current Net Savings Approach

EE programs, strategies, & initiatives are designed to make it easier for customers to say “Yes!” to EE:



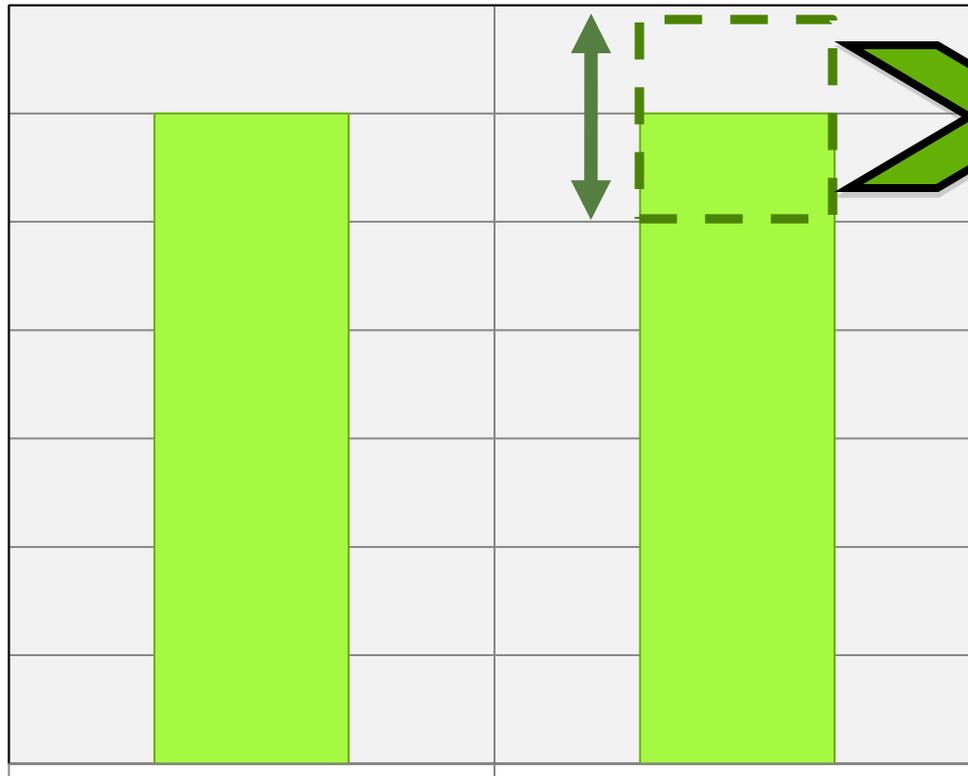
Yet, when customers say “Yes!” and then report they would have done EE “without the program” (traditional survey), **they are labeled a “free rider” and the savings do not count.**

## **“Multiples” Make it Challenging**

- Multiple public policy objectives (e.g., energy policies, resource planning/future resource needs, climate and air/environmental policies, economic policies, etc.)
- Multiple purposes (e.g., near-term impacts, longer-term total impacts, program efficacy, perf. incentives)
- Multiple policy initiatives for EE and clean energy (not just EE programs), e.g., codes and standards
- Multiple strategies within the EE programs
- The multi-faceted EE programs will increasingly be coordinated or integrated with other initiatives
- Multi-year time horizons to achieve multi-year goals

***Desire to count all effects from all policy initiatives over the multi-year time horizons.***

# Concerns Raised About Net-to-Gross Methods & Results (Current Practice)



**Adjusted Gross Savings**

**Net Savings**

Note: Net-to-Gross adjustments could either decrease or increase gross savings

**Net-to-Gross (NTG) Adjustments**

Concerns Raised:

- Accuracy of Results, Bias in Future?
- Uncertainty
- Long Delay for Final Savings Results
- Too Late to Take Action in Programs

# Recommendation for the Net Savings Approach of the Future

- Need a multi-year framework that reflects and is consistent with the vision & multi-year policy goals
- Hybrid approach is likely to be most effective:
  - Forward-looking resource planning approaches and tools, i.e., multi-year view, total impacts from all multi-faceted policies, & reference to forecasts (to make sure everything is counted and accounted for)
  - Focus on a new approach to “net savings” – hybrid of evaluated gross savings (retrospective) with the savings baselines accounting for “naturally occurring” EE and codes/standards upfront (prospective)
  - Net savings = evaluated gross savings adjusted by savings baselines
  - Periodic assessments of near-term EE program impacts (to ensure program expenditures are having an impact and ratepayer money is not being wasted by paying for things that would happen anyway)
- No silver bullet; requires development over time

# One Option for a Hybrid Approach

## PROGRAM YEAR

1

2

3

4

**Forecasting Ahead:** *Resource planning framework; account for codes & standards*

**Determine Savings Baselines Upfront:** *Account for “naturally-occurring” EE*

**Evaluated  
Gross  
Savings**

**Evaluated  
Gross  
Savings**

**Evaluated  
Gross  
Savings**

**Evaluated  
Gross  
Savings**

**Net Savings =** *Evaluated Gross Savings adjusted for savings baselines*

**Market Assessment of Impacts:** *Adjustments to baselines & forecast*

**Near-Term Market Assessment Elements and Evaluations:**

*Focused on program efficacy, effectiveness of ratepayer funding, and PA performance incentives (coordinated with multi-year market assessments)*

# Approach for the Next Three-Year Plans

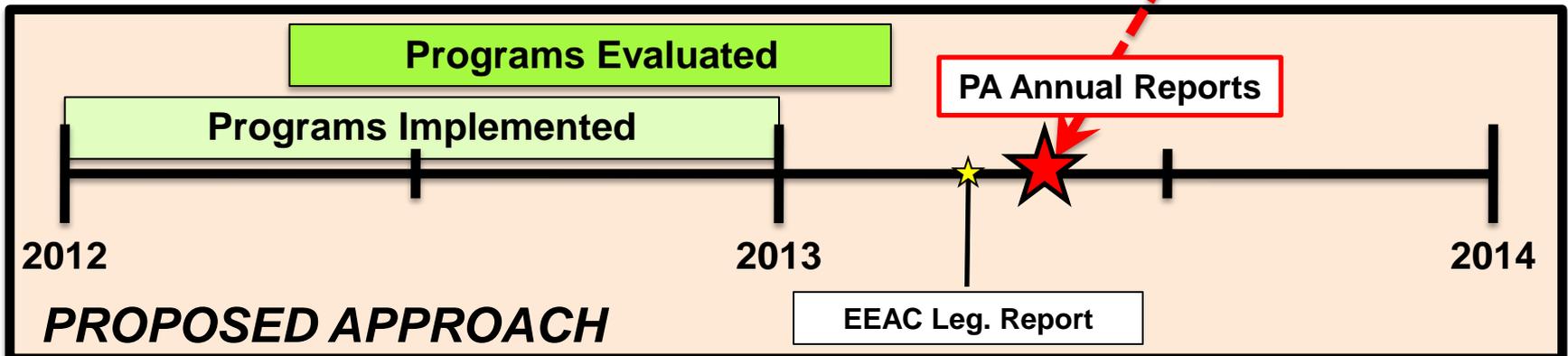
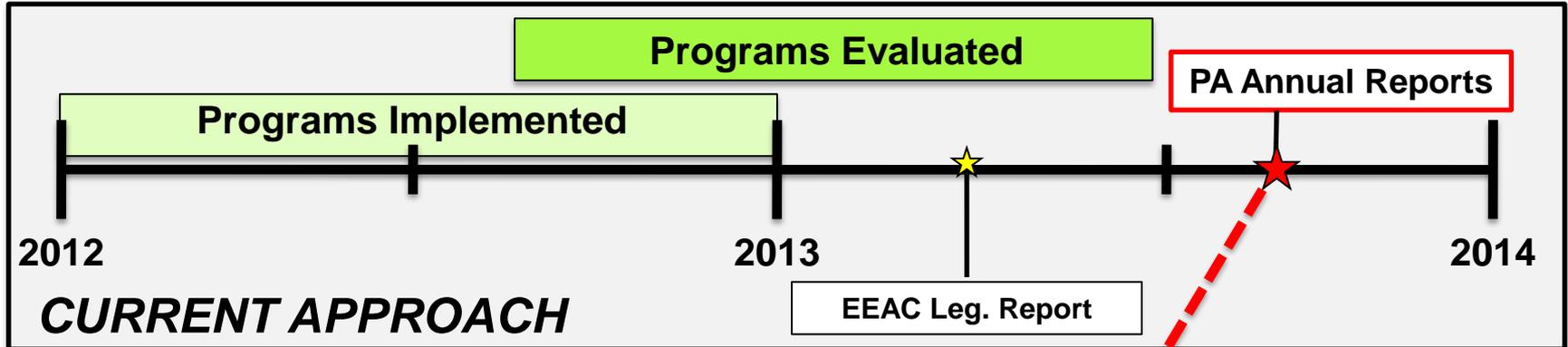
- Set estimates of naturally-occurring EE in the **savings baselines** in Plans upfront (as Plan impact factors based on best available information and EM&V), as a *prospective* application of available data
- Analyze/report **evaluated gross savings** based on results from verification (number of measures actually installed) and in-field evaluation results (e.g., in-service rates, watts/unit, hours of operation, custom project results) in a timely manner (*retrospective*)
- **Net savings** = evaluated gross savings adjusted for naturally-occurring EE in the savings baselines
- Do not adjust evaluated gross savings or net savings for net-to-gross factors *retrospectively*

# Summary of the Proposed Changes

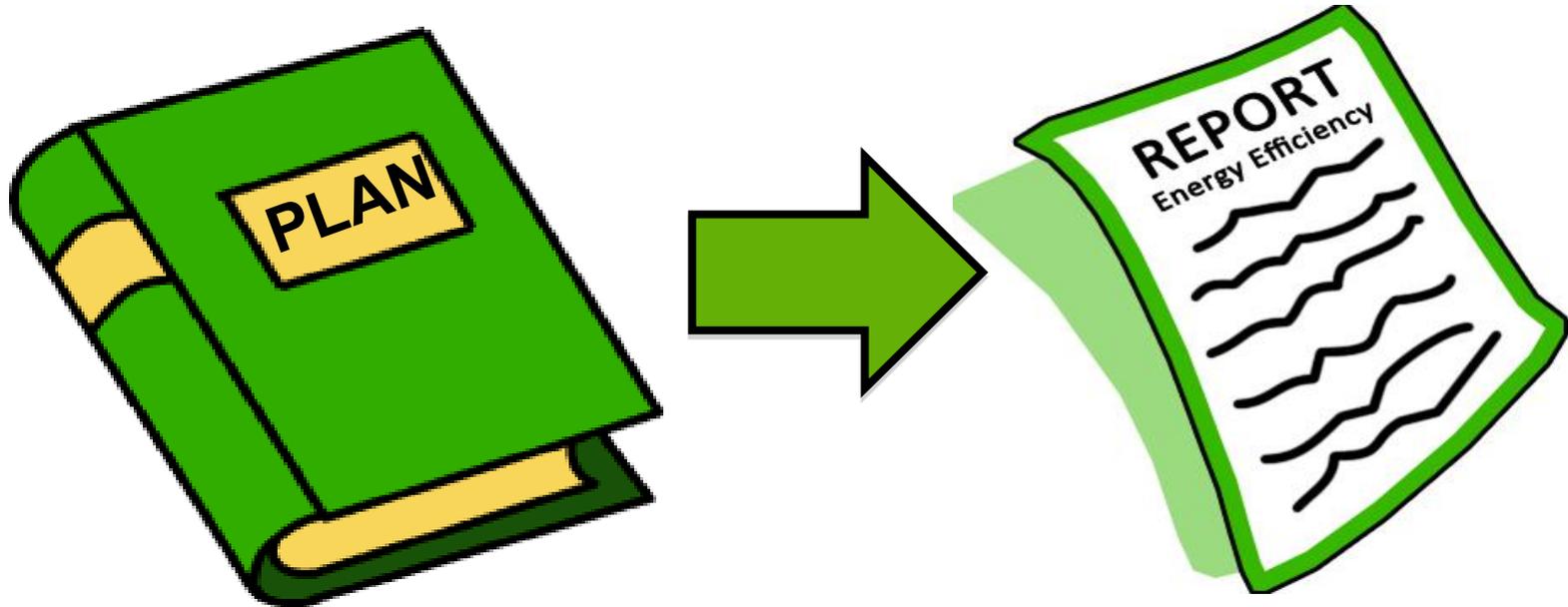
Component of the EE Policy Framework	Current Approach	Recommended Approach
<b>Plan timeframe</b>	Three-year plans with annual modifications (annual prevails strongly)	Three-year plans within strategic framework to achieve decade-long goals
<b>Savings basis</b>	Net savings	Net savings (but different approach)
<b>Not taking credit for or spending ratepayer money on things that would have happened without the program</b>	After-the-fact (retrospective) net-to-gross adjustments (primarily from surveys) in single-year snapshot	Determination of savings baselines to account for “naturally-occurring” EE & codes/standards upfront, in multi-year framework
<b>Application of evaluation (EM&amp;V) results</b>	Retrospective (ex post)	Mix of prospective (savings baselines for naturally-occurring EE) and retrospective (adjustments for evaluated gross savings)
<b>Basis for PA performance incentives</b>	Primarily net savings and net benefits (outcomes)	TBD: mix of outcomes and near-term indicators <small>(Continue to book performance incentives annually)</small>

# Improved Timing and Confidence

- Report soon after the end of a year (March/April)
- No long time delay for PA Annual Reports, which in recent years have been completed in August or later



# Planning & Reporting: Focus on Goals, Keep the Bar High, & Ensure Consistency



1. Set goals in the Plan (based on new approach to net savings, using evaluated gross savings & baselines)
2. Consistent basis for savings in both the Plan and Report (use same new approach to net savings)
3. The Plan and the Report account for “natural occurring” EE in the savings baselines upfront

# Multiple Purposes and Quantities

	Determining the performance of:		
	EE Programs (kWh, kW, therms)	Ratepayer Funding (cost-efficiency)	Program Administrators (perf. incentives)
<b>Current Approach (one quantity)</b>	Net savings from the EE programs determined from single-year “snapshot” in planning and evaluation (used for all three purposes)		
<b>Proposed Approach (two quantities)</b>	Total impacts (new approach to net savings) over multiple years, supported by evaluations and multi-year market assessments	Periodic near-term market assessments and evaluations of the impacts of EE programs and ratepayer funding; also used to assess program efficacy, improve program performance, ensure effective use of ratepayer funding, and focus on key performance indicators for PA performance incentives	
	<i>Longer-Term Indicators</i>		<i>Near-Term Indicators</i>

# Develop and Transition Over Time

- Make progress in the DPU NOI, seek additional progress in the next Plans, and continue development
- For DPU NOI and next Three-Year Plans (2013-15):
  - Alternate approach to determining net savings estimates
  - See slides # 7-8, 16-19, and 22
  - For savings baselines and naturally-occurring EE, use best available information (including recent net-to-gross factors)
  - Consider implications for EM&V (e.g., more market studies)
- For the future, and for the multi-year goals and multi-faceted programs & initiatives, develop this further
  - Focus on longer-term perspective and multi-year planning
  - Examine multi-year impacts of multi-faceted programs
  - Use market data in forecasting and determining baselines