The Big Squeeze: Meeting EERS Targets as Baselines Rise

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Overview

- Background—EERS and program planning
- Purpose—to assess the “savings gap” between EERS and current portfolios, and examine options to fill it
- Methodology—modeling a typical DSM portfolio against a typical EERS target
- Results
- Open questions

Background

- Some 26 states have EERS will a macro-level, long-term energy savings target
- Program managers in some states see a “savings gap” between EERS and current plans
- Rising baselines constrain savings from conventional program designs
- New measures and program designs hold promise for new savings
- New programs will have to meet economic tests, and then show results

Purpose of the “Big Squeeze” study

- ICF provides EE program planning and delivery services in several EERS-driven states
- As a practitioner, we wanted to assess the savings gap, and identify potential new program solutions
- Unless we start now to develop the measures and programs that can fill the “savings gap”, some states may experience pressure to weaken/ignore/repeal EERS

Methodology

1. ICF's EEPM model used as the "engine"
2. Built a generic DSM portfolio based on ICF client experience
3. Used ACEEE data to calculate a typical EERS target
4. Established a baseline scenario and "savings gap"
5. Re-estimated the baseline and gap with federal lighting and appliance standards
6. Developed several "gap-filler" scenarios

Potential Gap-Fillers

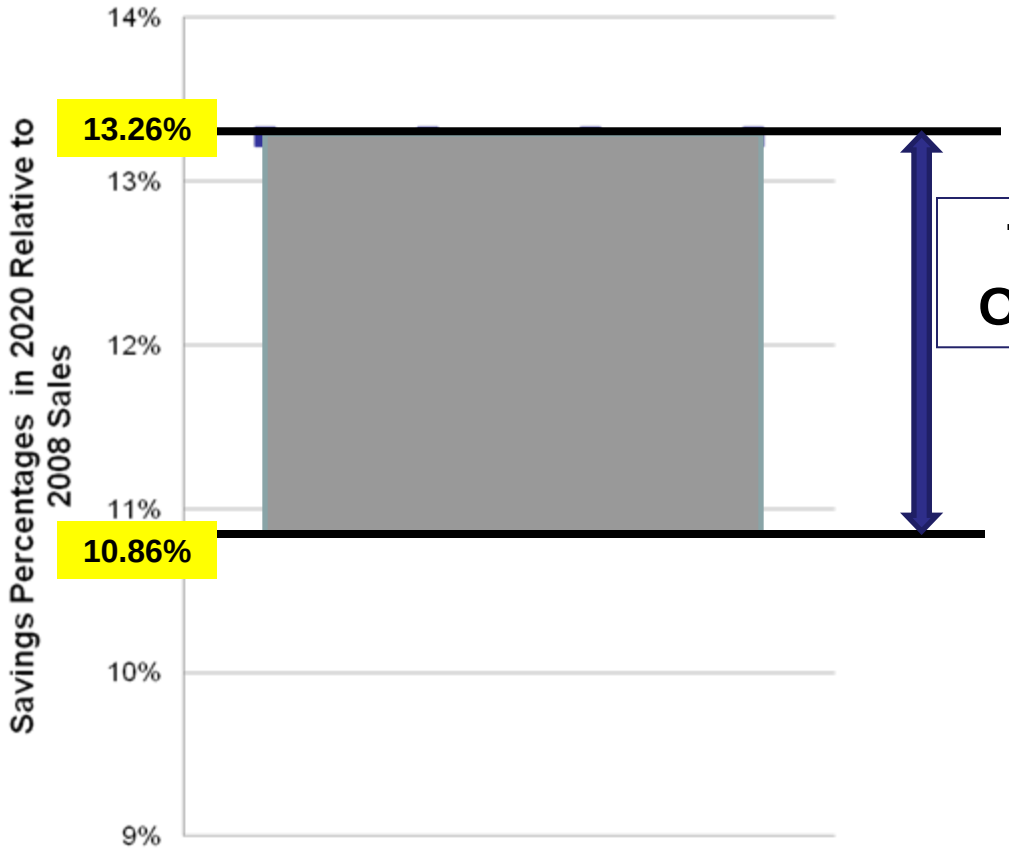
- ENERGY STAR® Most Efficient products
- Residential electronics products
- Residential Smart Grid/customer feedback
- Residential whole-building retrofits—varied savings levels and participation rates
- Commercial whole-building performance—varied savings levels and participation rates
  - Embraces prescriptive, customer and RCx program models

Results

Highlights:

- Baseline shows ~18% shortfall of 2020 goal
- Federal standards widen gap to ~25%
- Residential programs can collectively fill the gap, but only if all perform exceptionally well
- Commercial whole-building programs can fill the gap, but only at high levels of savings and participation

Baseline Scenario

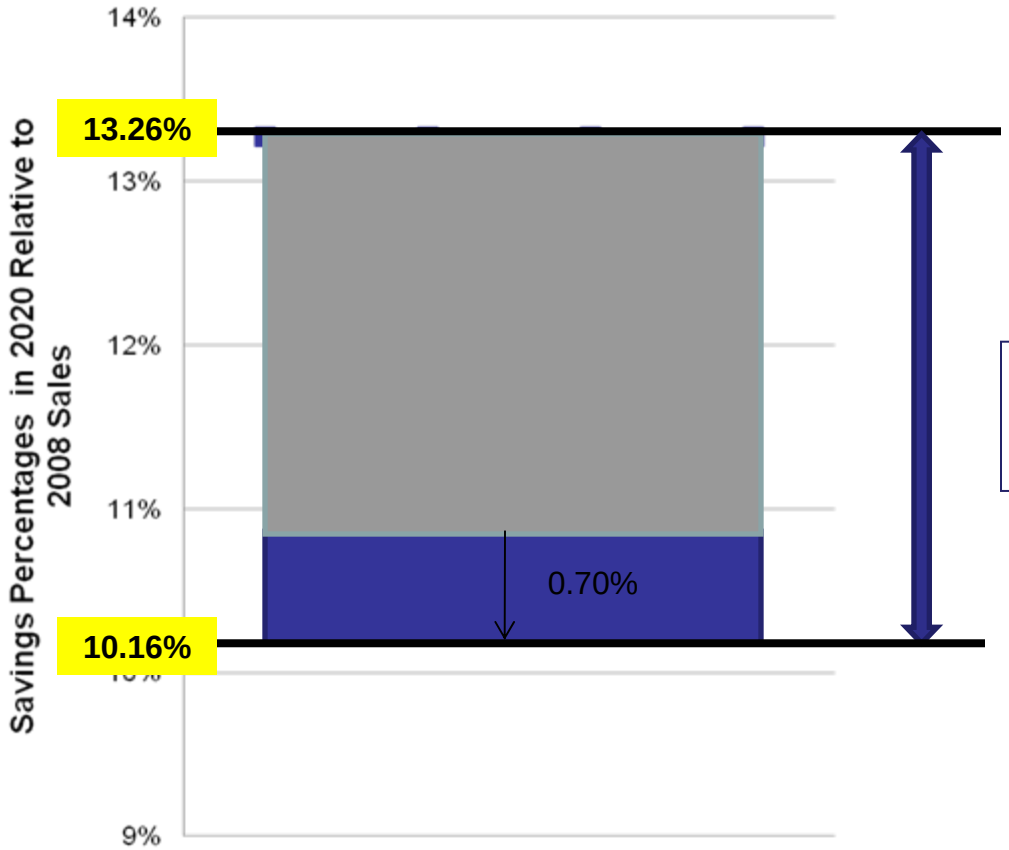


Average EERS Savings Target

The Savings Gap = 2.41%
Of 2008 sales, 18% of EERS

Typical DSM Planning Portfolio Savings

Scenario 2: The Impact of EISA 2007 Lighting Standards

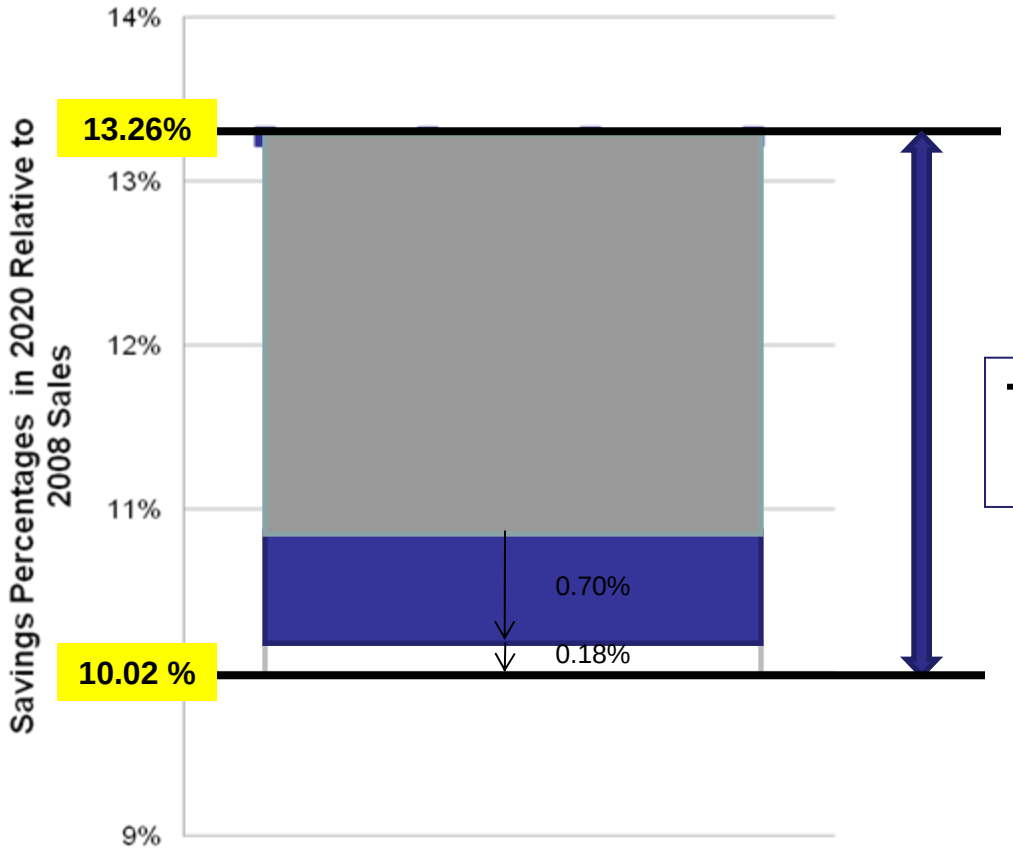


EERS Savings Target

The Savings Gap = 3.11% of 2008 sales

DSM Planning Portfolio Savings

Scenario 3: The Impact of Pending HVAC and Appliance Standards

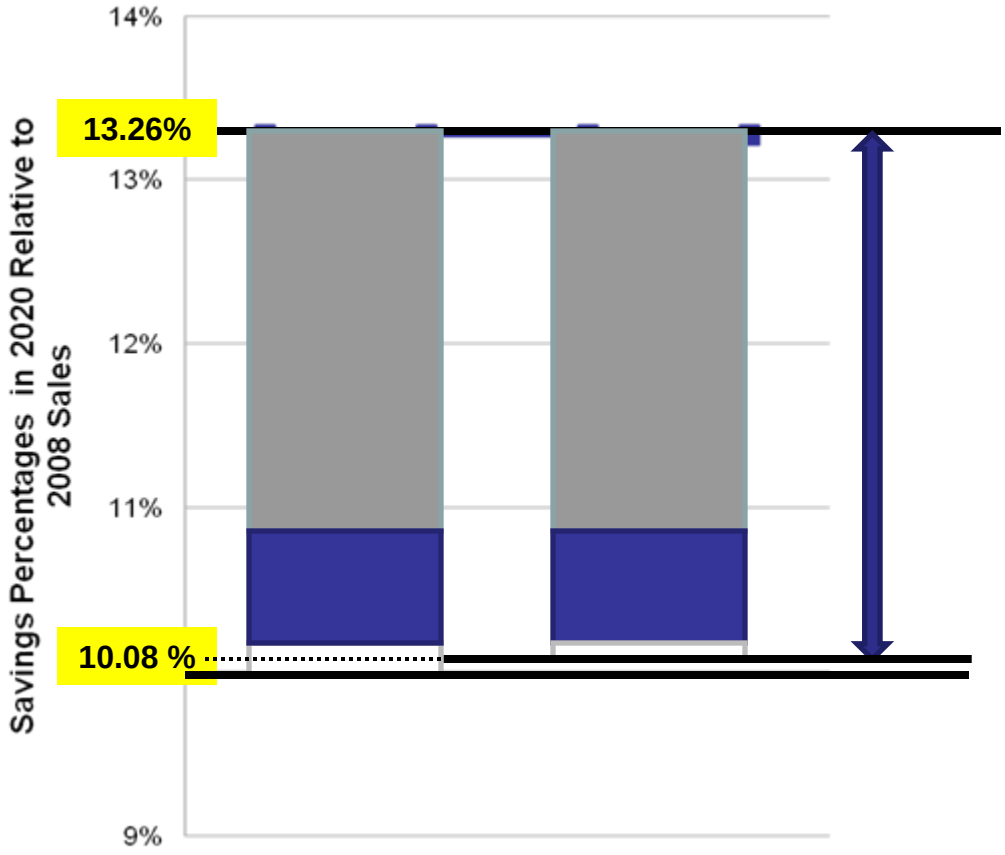


EERS Savings Target

The Savings Gap = 3.25% of 2008 sales, 25% of EERS

DSM Planning Portfolio Savings

Scenario 4: Impact of ENERGY STAR® Most Efficient Products



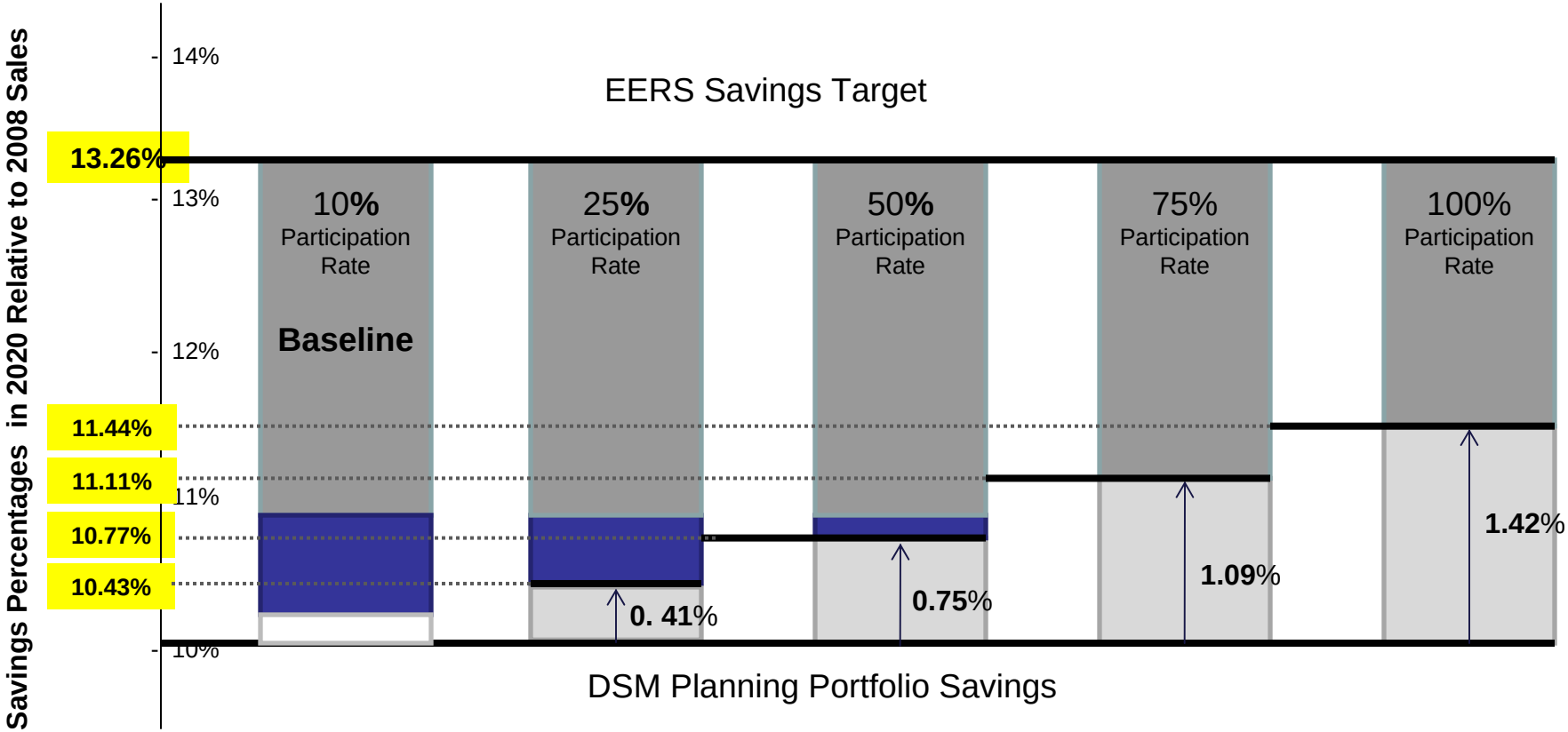
EERS Savings Target

The Savings Gap = 3.19%

DSM Planning Portfolio Savings With ENERGY STAR® Most Efficient Products

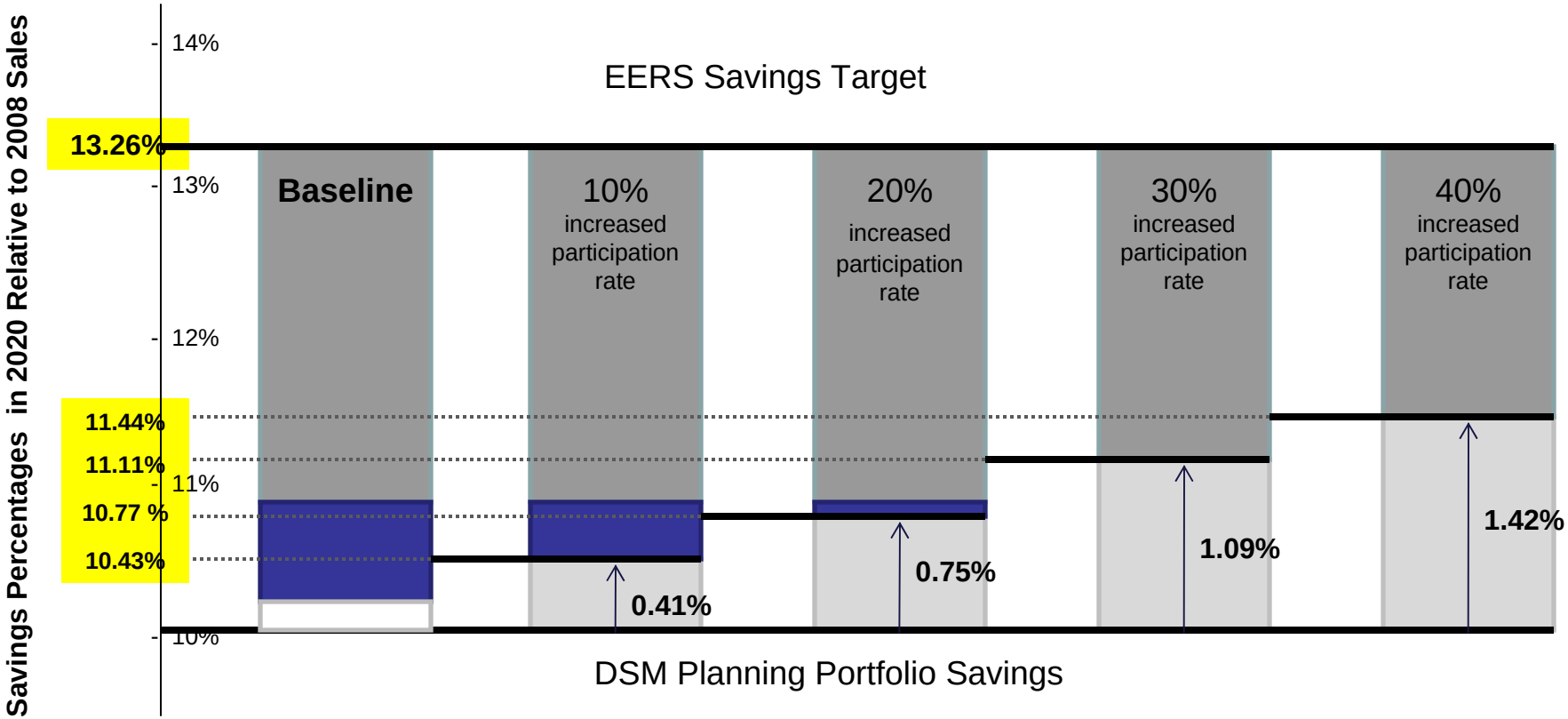
Scenario 5: Impact of Electronic Products

(Residential)



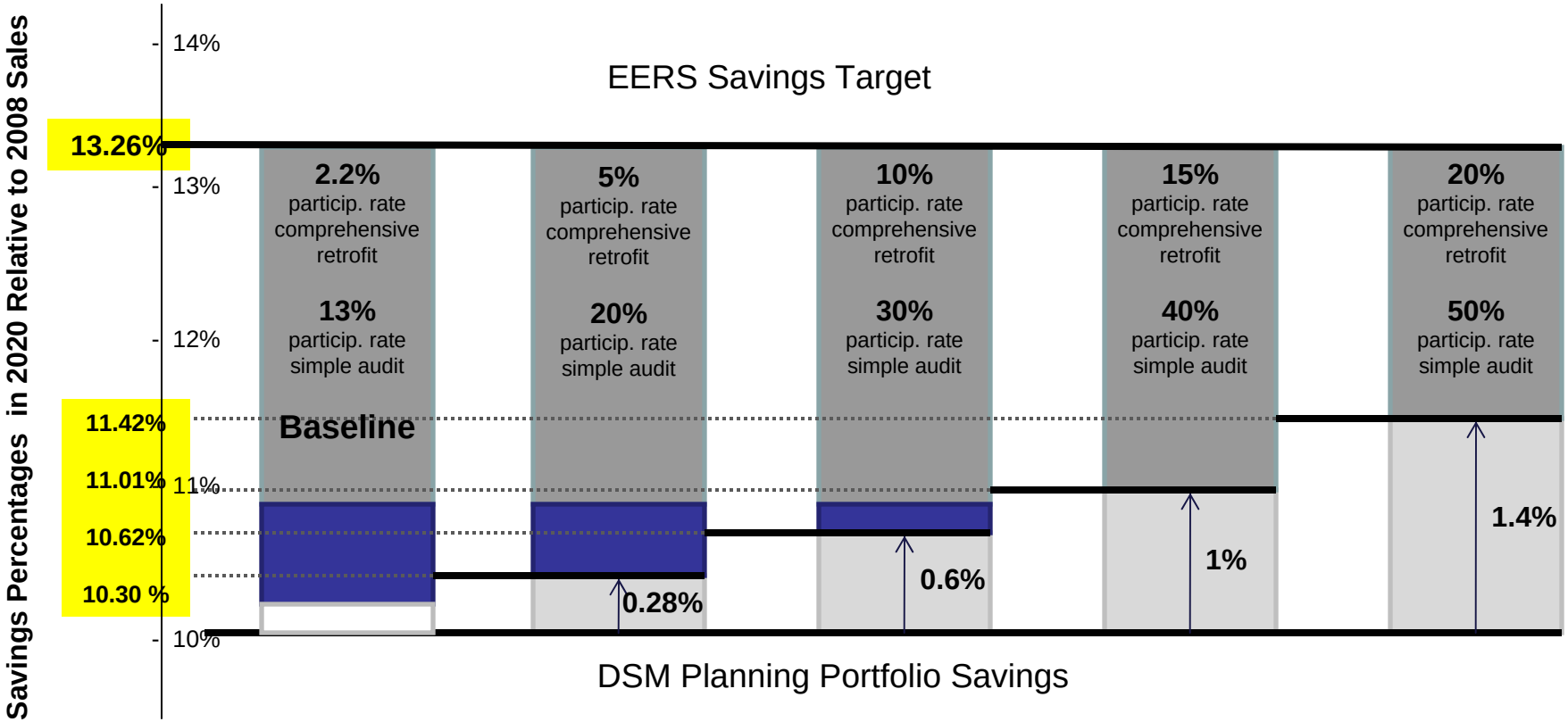
- Participation Rate: 25%-100%

Scenario 6: Impact of Smart-Grid/Feedback Program



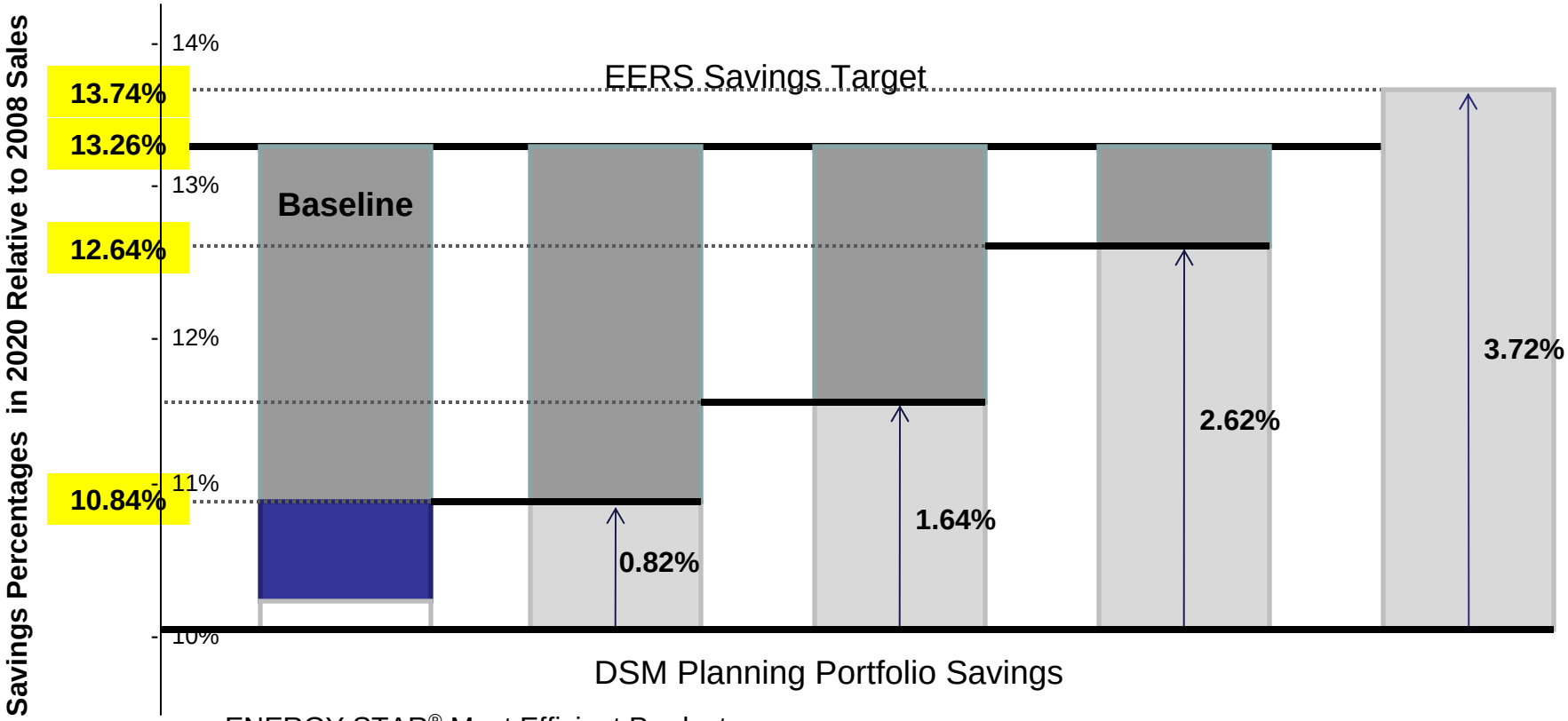
- Increased Savings in Residential Programs: 2%
- Increased Participation Rate for Residential Programs: 10%-40%

Scenario 7: Impact of Residential Retrofits



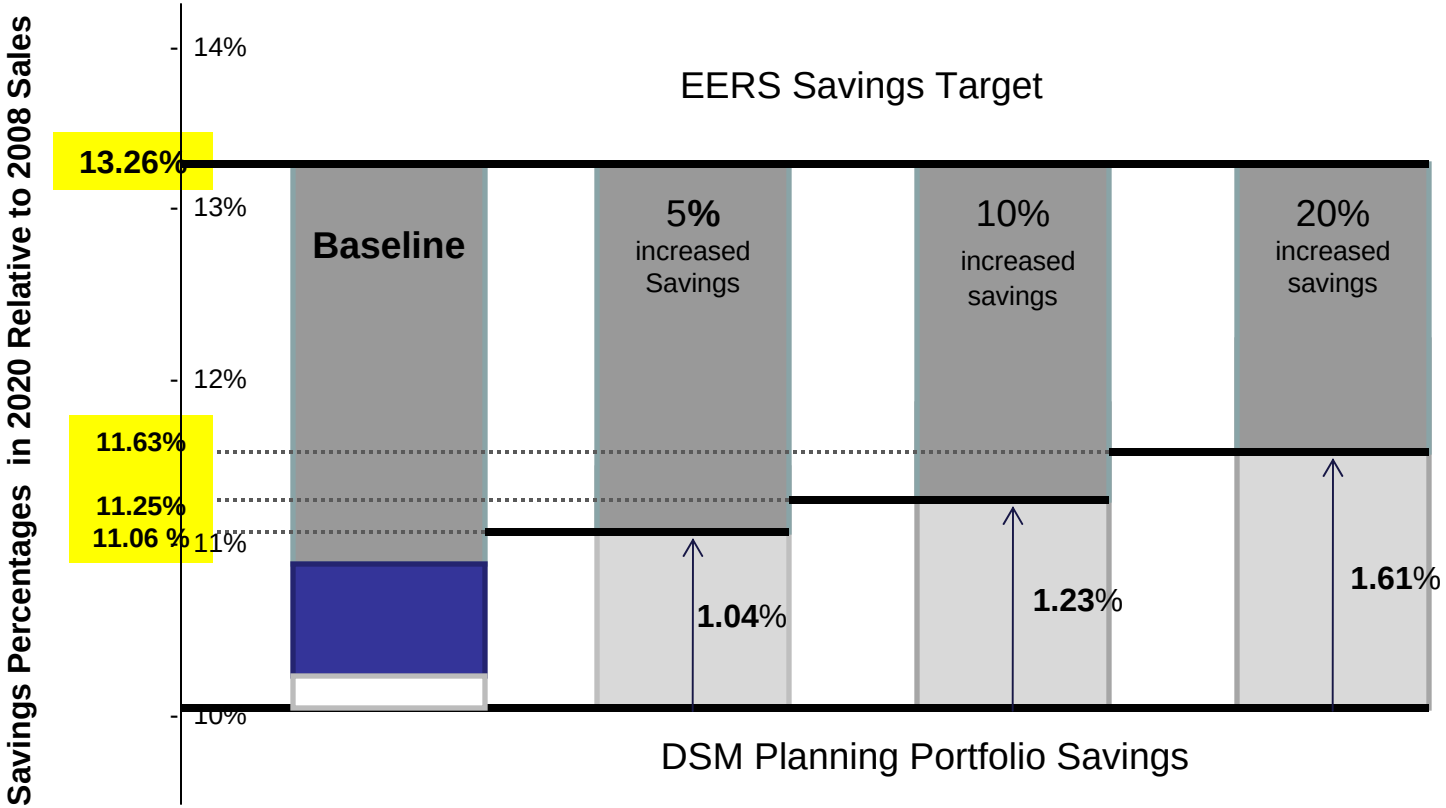
- Participation Rate in Comprehensive Retrofit: 5%-20%
  - Participation Rate in a Simple Audit: 20%-50%

Scenario 8: Combined Impact of Residential Programs



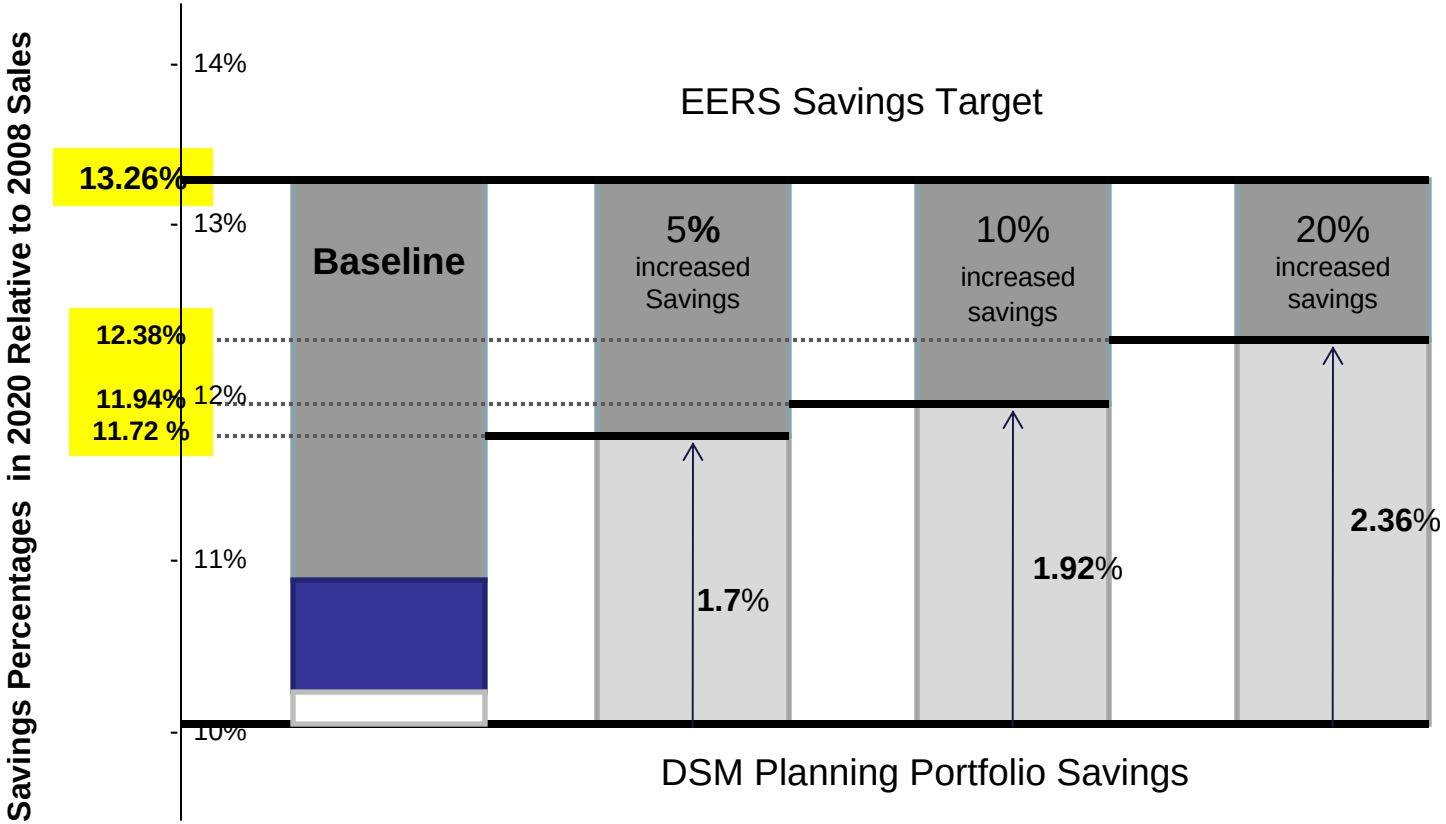
- ENERGY STAR® Most Efficient Products
- Electronic Products - Participation Rate: 25%-100%
- Feedback Program - Increased Participation Rate: 10%-40%
- Whole-Building Retrofit - Participation Rate in a Comprehensive Retrofit: 5%-20%
- Whole-Building Retrofit - Participation Rate in a Simple Audit: 20%-50%

Scenario 9-A: Impact of Commercial Whole-Building Program



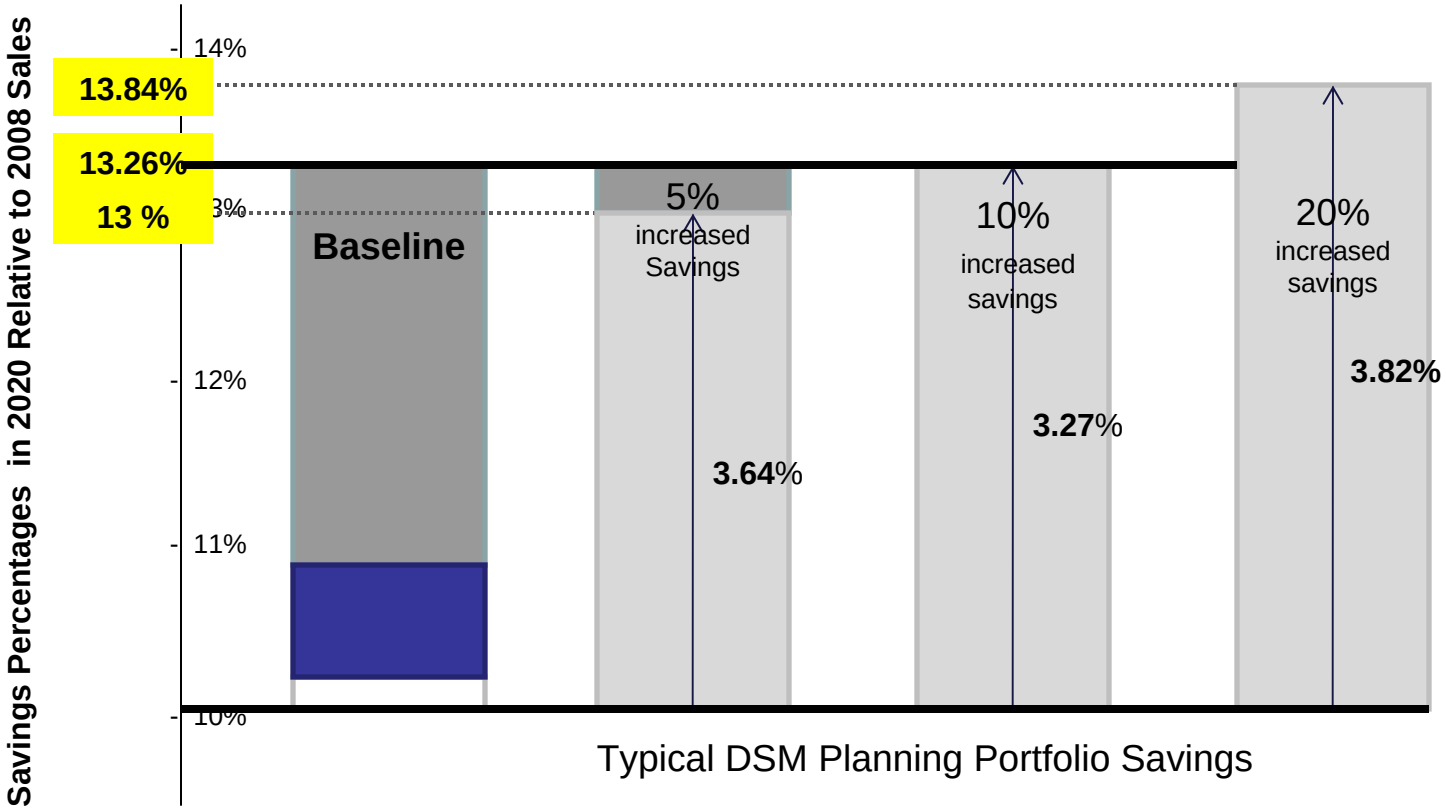
- Custom Program Participation Rate:10% (50% Higher Participation)
- RCx Program Participation Rate : 0.8% (40% Higher Participation)
- Prescriptive Program Participation Rate : 10% (20% Higher Participation)
- Increased Savings 5%-20%

Scenario 9-B: Impact of Commercial Whole-Building Program



- Custom Program Participation Rate:13% (100% Higher Participation)
- RCx Program Participation Rate : 1% (75% Higher Participation)
- Prescriptive Program Participation Rate : 11% (30% Higher Participation)
- Increased Savings 5%-20%

Scenario 9-C: Impact of Commercial Whole-Building Program



- Custom Program Participation Rate:20% (300% Higher Participation)
- RCx Program Participation Rate : 1.3% (125% Higher Participation)
- Prescriptive Program Participation Rate : 13% (50% Higher Participation)
- Increased Savings 5%-20%

Open Questions

- Can Most Efficient products achieve high market shares?
- Can effective consumer electronics program models pass economic tests, and show results?
- Can Smart Grid/feedback programs win PUC approval and show sustained savings?
- Can residential retrofits gain/sustain higher savings and higher participation?
- Can commercial whole building programs gain/sustain high savings and participation?

Open Questions

- How can higher savings be reached without very high incentives/high program costs/rate impacts?
- How can high participation be gained/sustained at acceptable marketing/incentive costs?
- How will behavior/performance/feedback-based programs gain regulatory approval and sustained market impacts?
- How can we expand/refocus this research to add greater value to the community?

Contact Information

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