



How Much Energy Efficiency is Achievable and How do we Achieve it ?

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NAESCO Mid-Year
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Overview of Presentation

Background

Some examples

What's still out there after the low hanging fruit?

How to achieve the achievable?



Energy Efficiency - Methodology

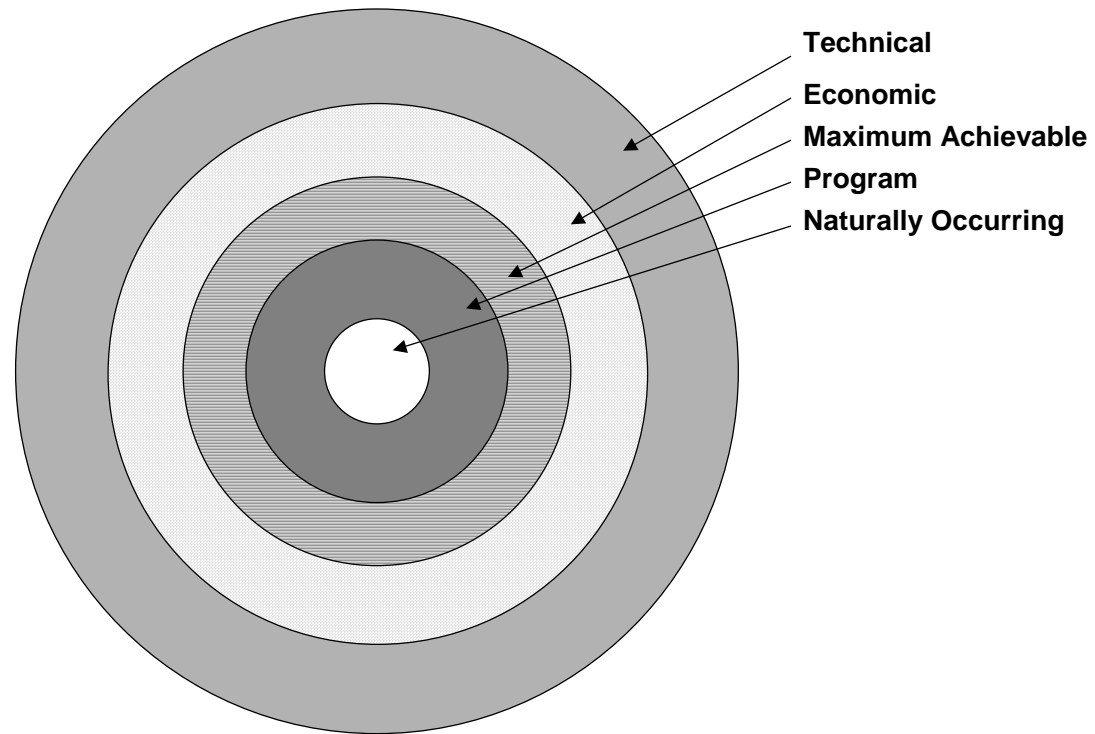
- **Technical potential** assumes the *complete* penetration of all energy-conservation measures that are considered technically feasible from an engineering perspective.
- **Economic potential** refers to the technical potential of those measures that are cost-effective when compared to supply-side alternatives.
- **Maximum achievable potential** describes the economic potential that could be achieved over time under the most aggressive program scenario.

Energy Efficiency - Methodology

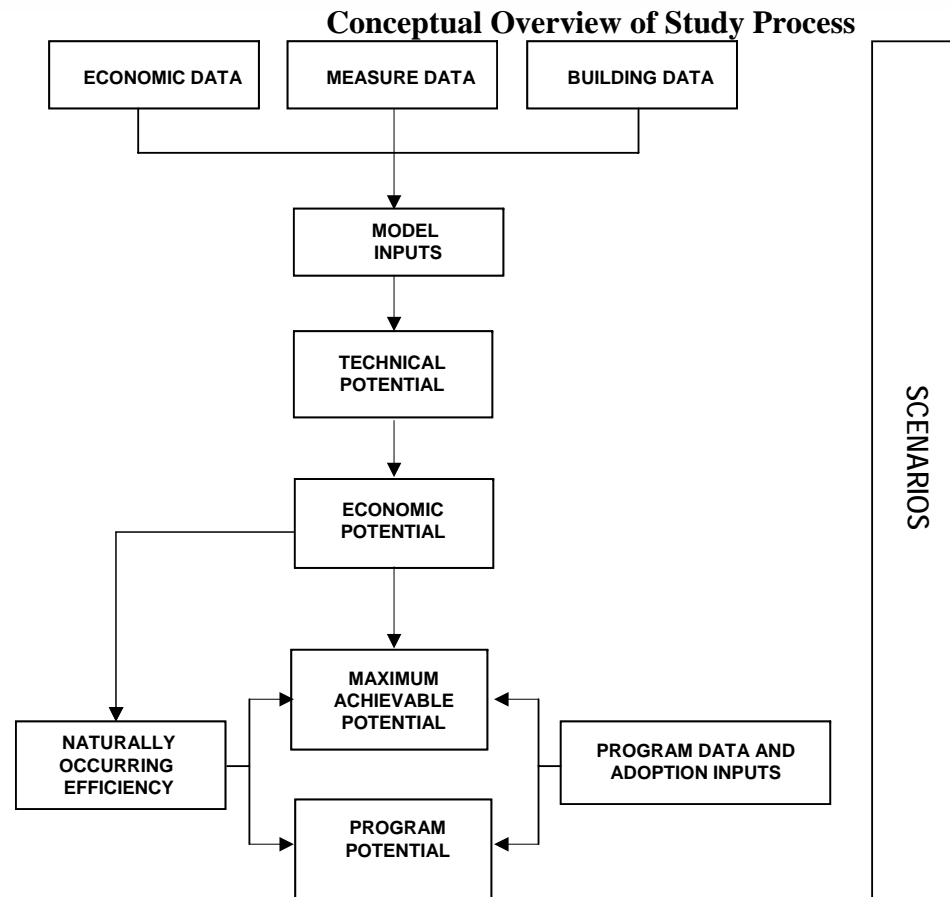
- **Program potential** refers to energy saved as a result of a specific program's funding levels and incentives provided. These savings are above and beyond those that would occur naturally in the absence of any market intervention.
- **Naturally occurring potential** refers to energy saved as a result of normal market forces, that is, in the absence of any utility or governmental intervention.



Overview of Potential



Conceptual Overview



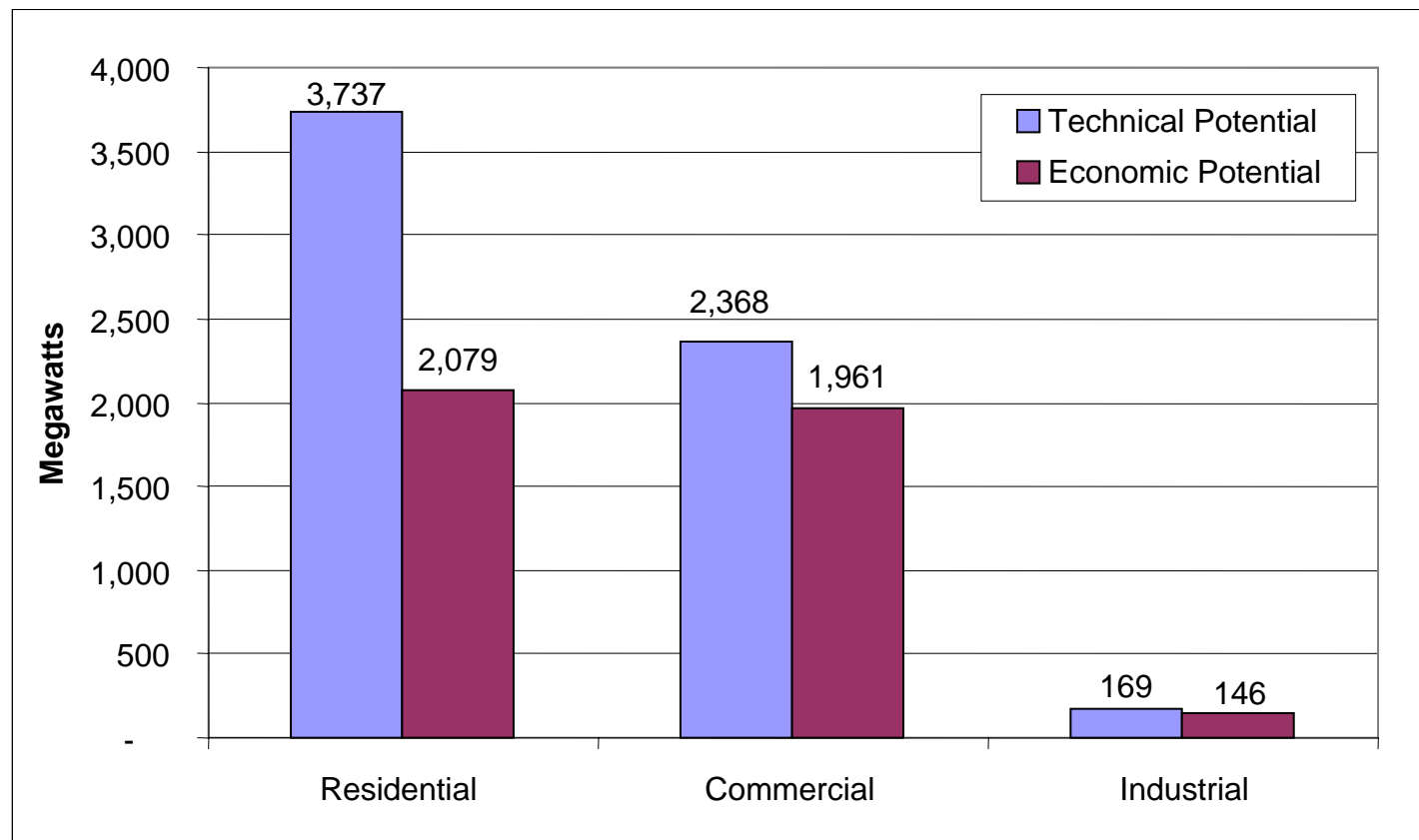
Sequence of Analysis

- Allocate electric and gas sales to customer segments and end uses
- Develop technical and economic potential
- Develop program concepts for achievable potential

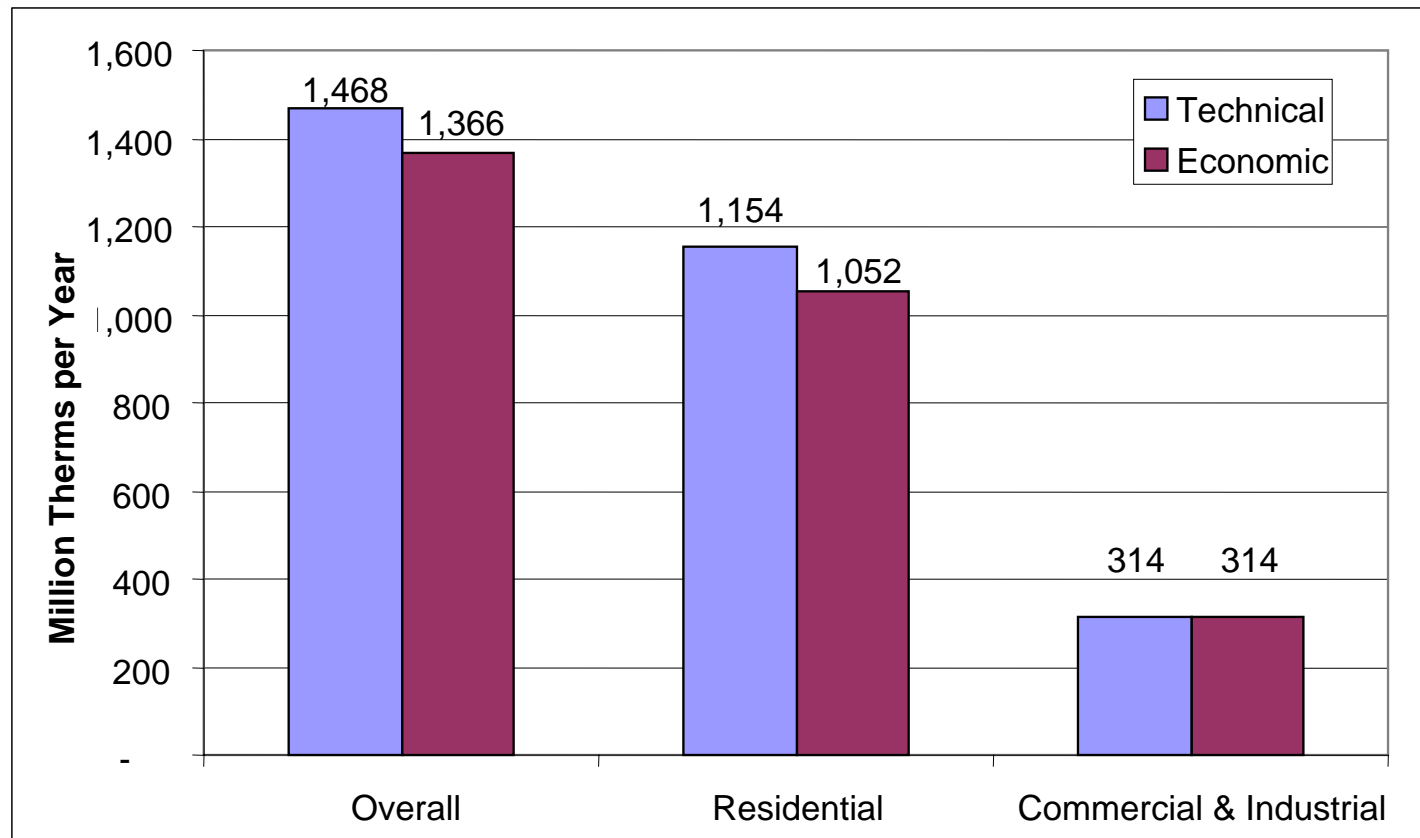
Program Concept Criteria

- Market Potential
- Cost Effectiveness
- Likelihood of Success
- Market Barriers

Technical and Economic Potential – Electric - Demand



Technical and Economic Potential - Gas



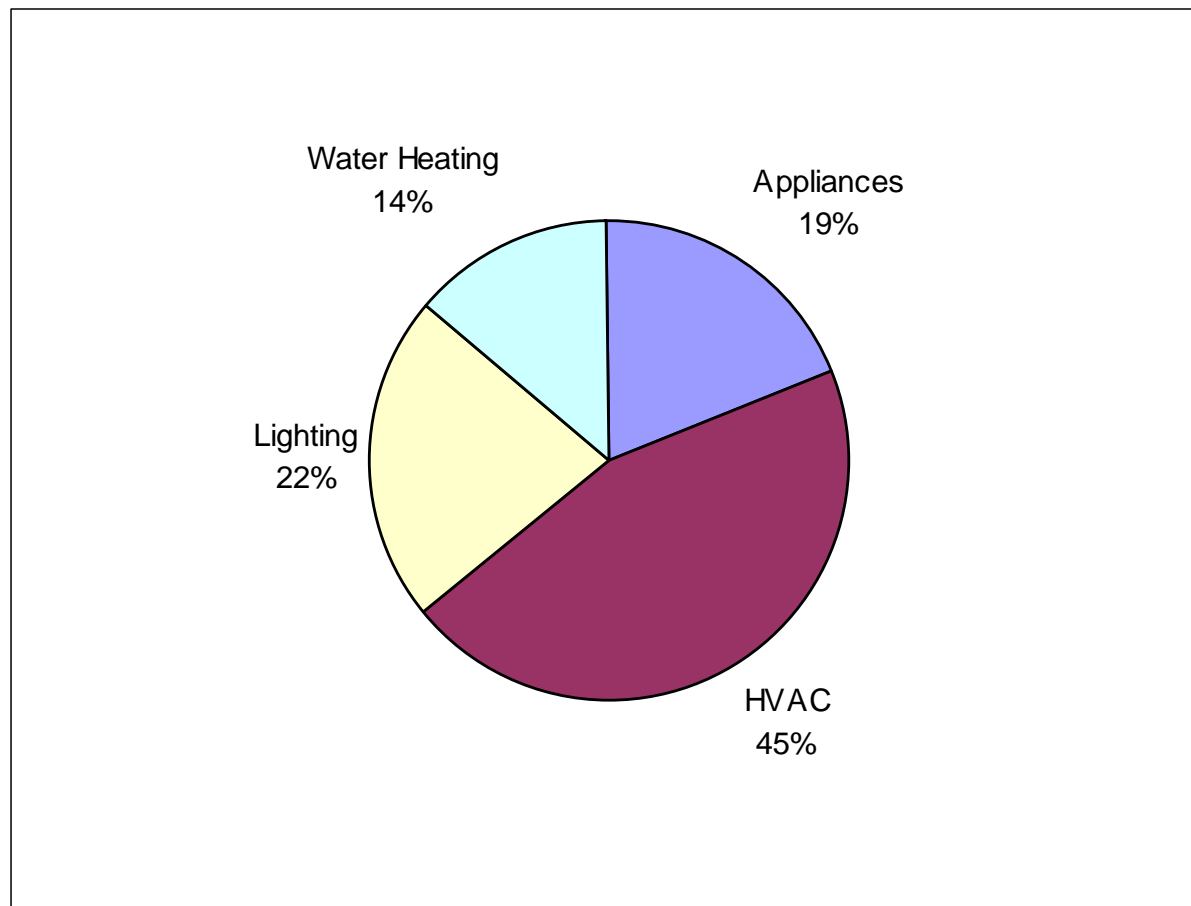
Key markets for Technical and Economic Potential

- Residential
 - ❖ Lighting
 - ❖ HVAC
 - ❖ Appliances
 - ❖ Existing homes
 - ❖ New Construction

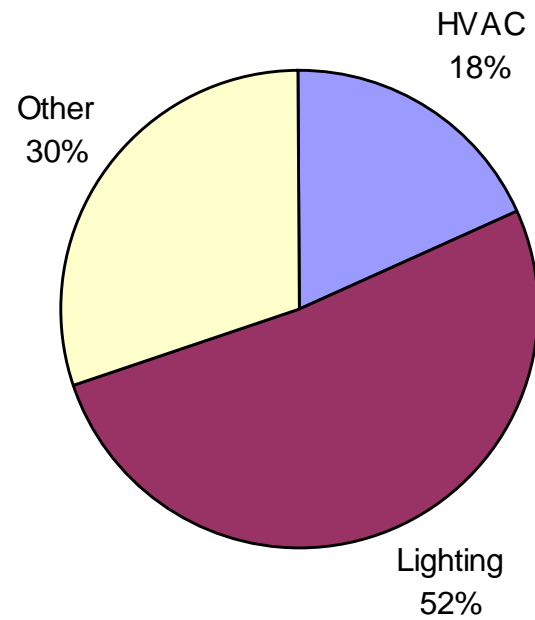
Key markets for Technical and Economic Potential

- Commercial / Industrial
 - ❖ Lighting
 - ❖ Compressed air
 - ❖ Process improvements
 - ❖ HVAC
 - ❖ Motors

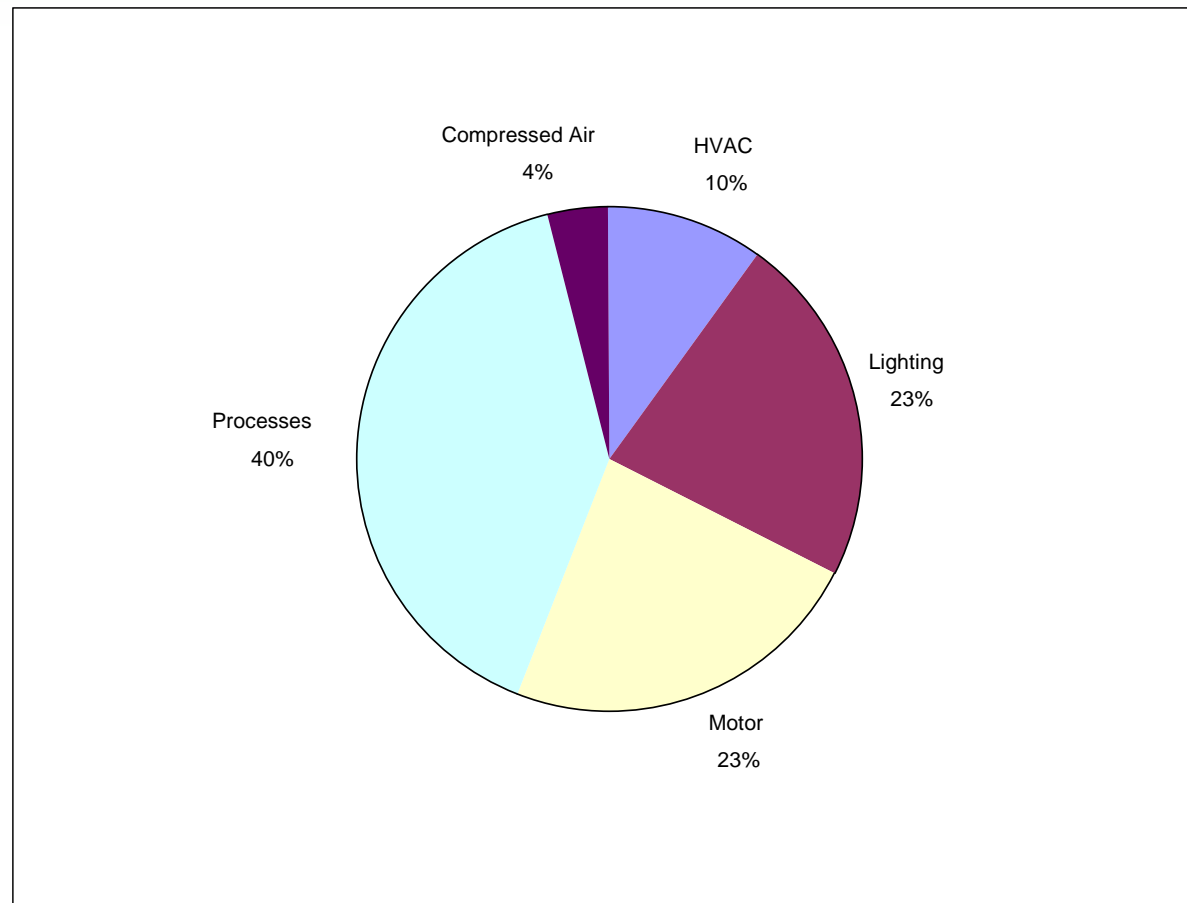
Savings by end use - Residential



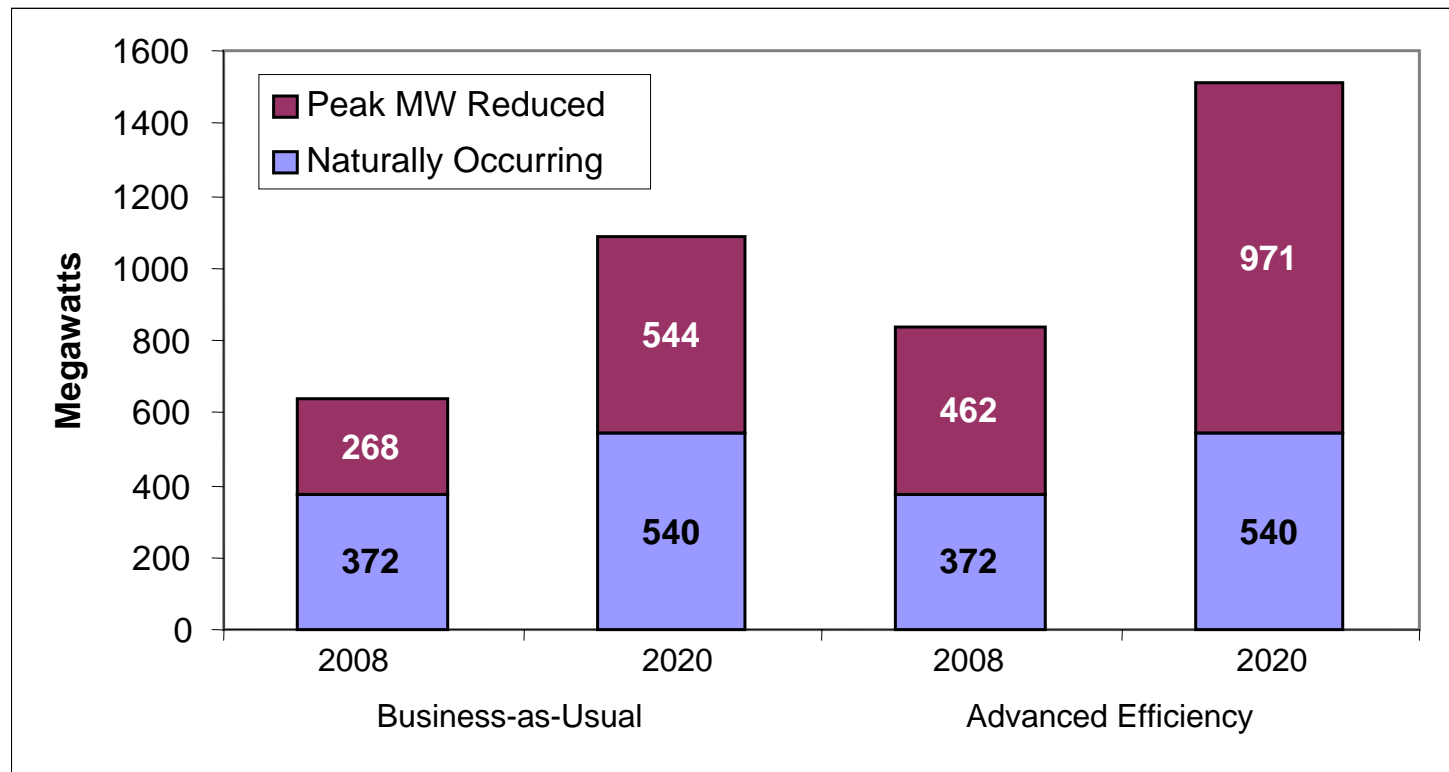
Savings by End Use - Commercial



Savings by End Use - Industrial



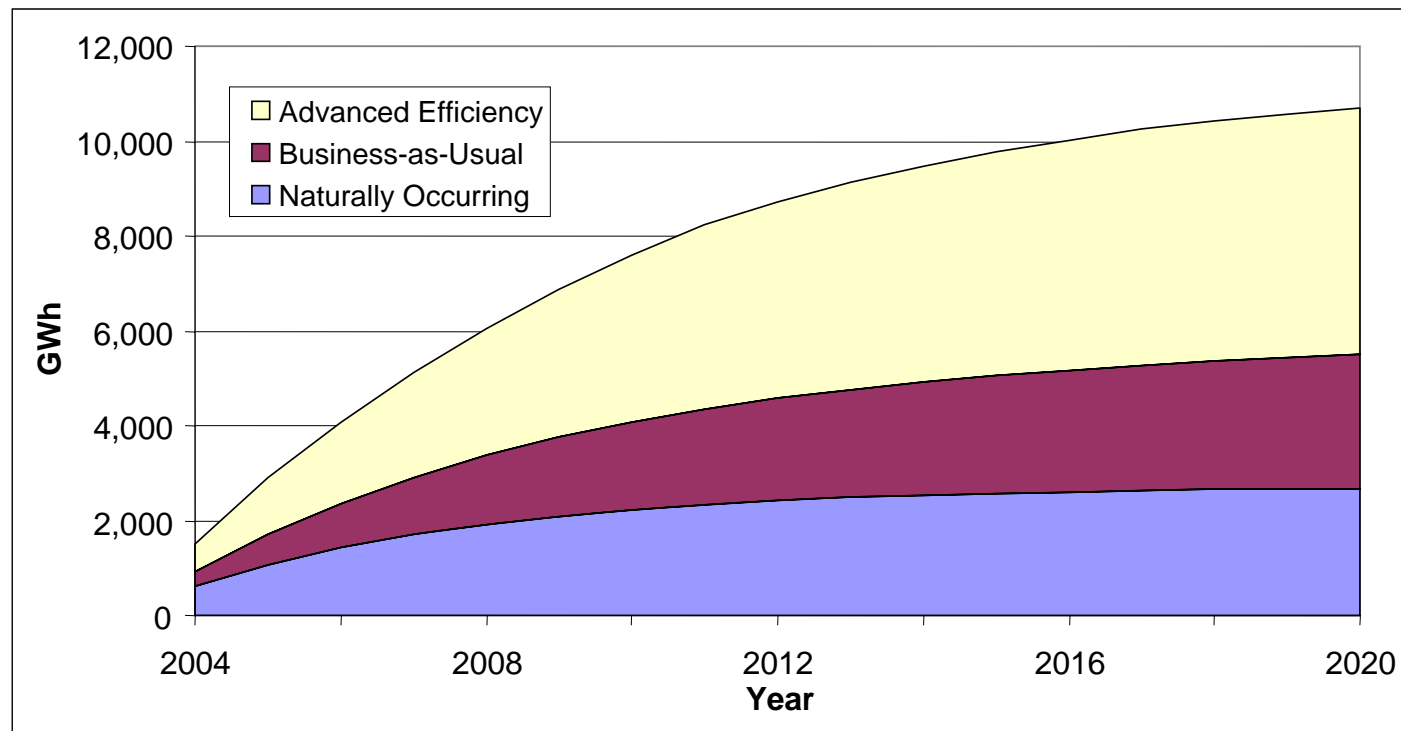
Achievable Potential – Electric - MW



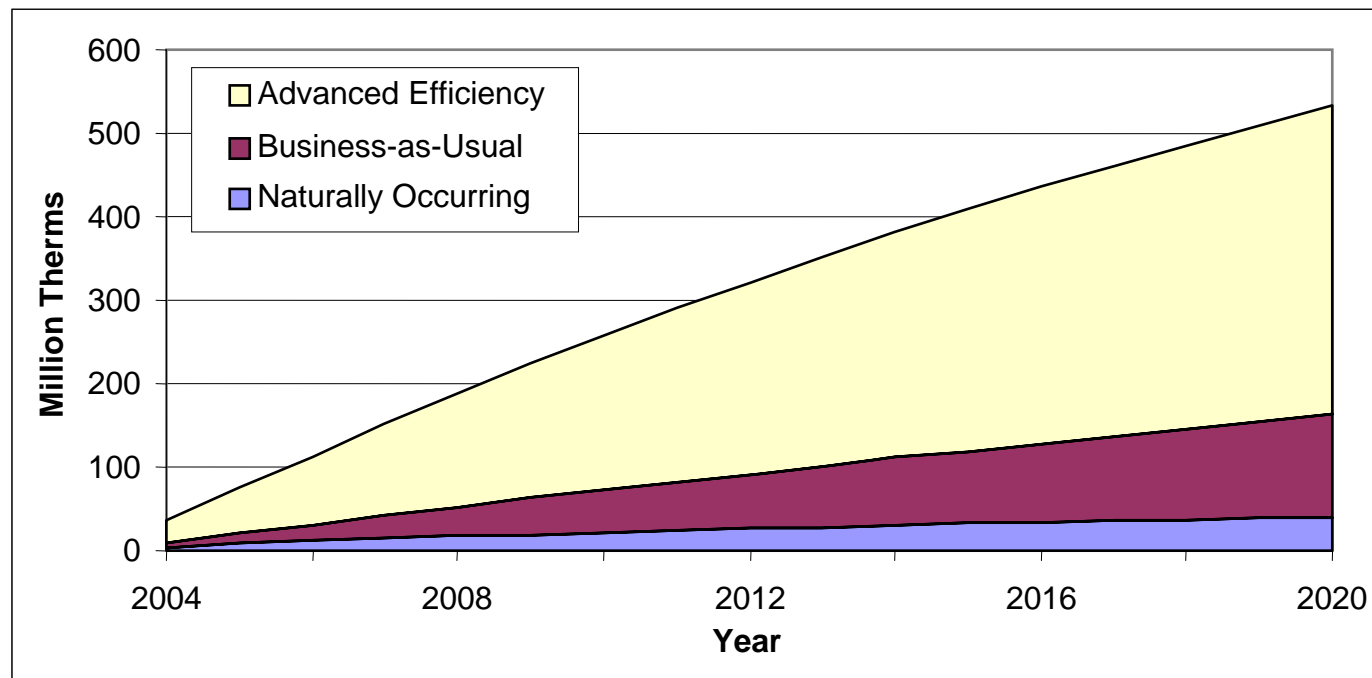
Achievable Potential

- Based on Program Concepts
- Residential – Low income, Energy Star, HVAC, New Construction
- C/I – New Construction/ renovation/ retrofit/ process

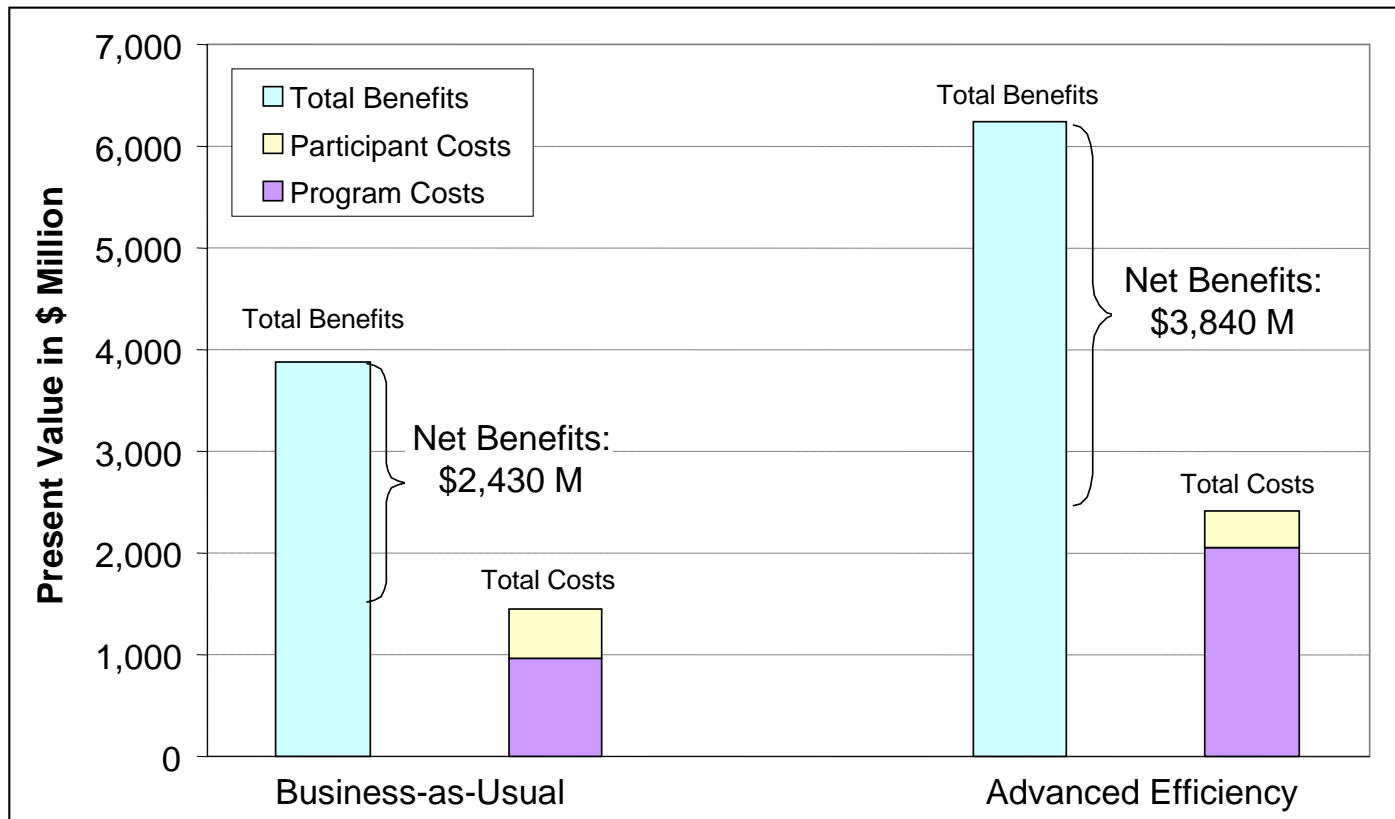
Achievable Potential by Scenario – Electric Energy



Achievable Potential by Scenario – Gas Energy



Overall Costs and Benefits





After the low hanging fruit.....

- Super T-8's
- T-5's
- Gas
- HVAC Practices
- Windows
- Retro-commissioning
- Interaction with green buildings

How to achieve the achievable?

In places where there is a SBC

- Good program design
- More opportunities when look at both gas and electric
- Bidding in constrained areas
- New program concept RFP's
- Review baselines regularly
- More gas programs
- If utilities are the implementer – keep them whole

Best Practices Include:

- Keep participation simple
- Have participation strategies that are multi-pronged and inclusive
- Program stability over time
- Use incremental costs as basis for incentives
- Use electronic means as much as possible
- Single point of contact for customers

Best Practices Include: (2)

- Make participation part of an existing transaction
- Use trade allies as much as possible
- Provide training to trade allies
- Sell the customer the benefits first , energy efficiency later
- Evaluate on a regular basis

Where there are not SBC funds

- Use climate change as a lever
- Codes and Standards
- Bidding programs in constrained areas

- Audience – other thoughts?



Thank you

- Questions ?