CalPlug Set-top Box Workshop

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy





Overview of DOE STB Energy Conservation Standards Rulemaking Activities

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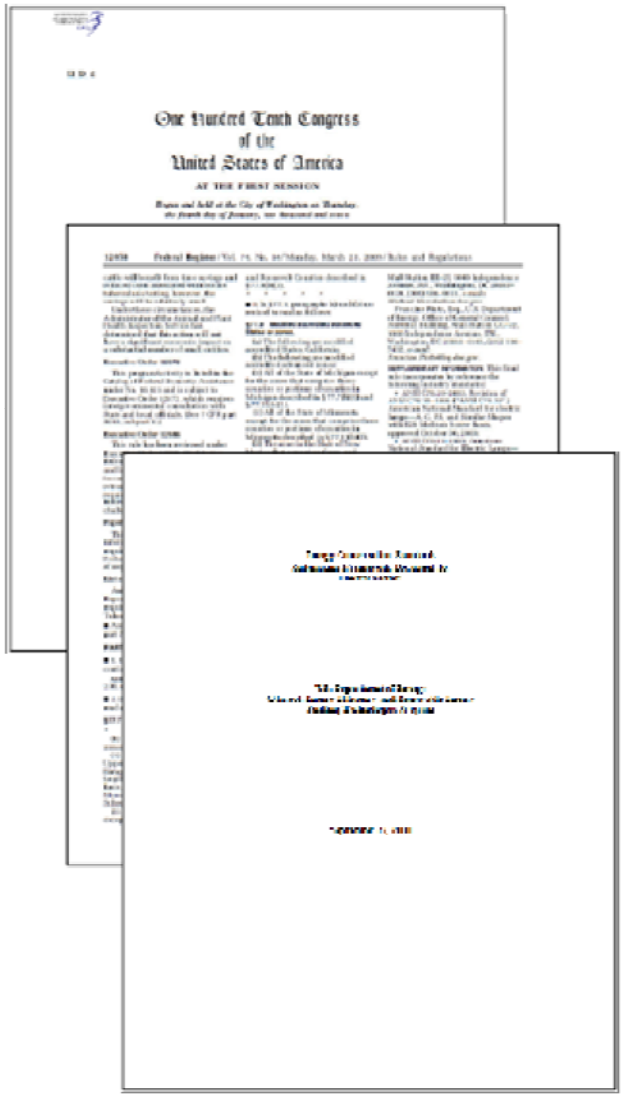
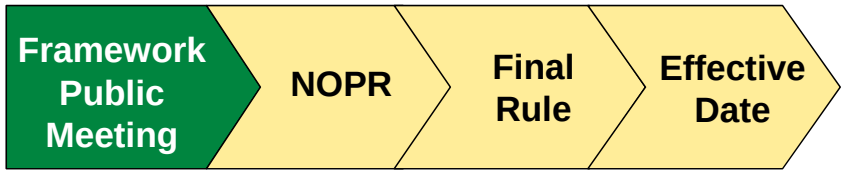
Regulatory Activities

Department of Energy is currently conducting rulemaking activities and analysis considering Efficiency conservation standards for Set-top Boxes and Network Equipment

- Notice of Proposed Determination (76 FR 34914, June 15, 2011)
  - DOE preliminarily determined that set-top boxes and network equipment meet the criteria for covered products
- Request for Information (76 FR 32325, December 16, 2011)
  - DOE announces initiation of rulemaking activities
  - DOE seeks information and comments from stakeholders
- Public Meeting (January 26, 2012)
  - DOE provided overview of rulemaking process for considering potential energy conservation standards for set-top boxes
  - Stakeholders given opportunity to provide input, ask questions, and offer information.



Framework Public Meeting



January 26, 2012

- Public meeting covered the rulemaking process for Set-top Boxes
- Key Takeaways
  - DOE will be performing rigorous analysis of economic and energy impacts of energy conservation standards for Set-Top Boxes
  - DOE is seeking significant amounts of data and information from stakeholders
  - Stakeholders brought up many unique challenges discussed in performing analysis in rapidly changing industry.
    - Stakeholders emphasis importance of improving efficiency
    - 5 Year Compliance Period
    - Product Classes and Technology/Design Options
    - Identification of Additional costs to be considered in Analysis

Stages for the Energy Conservation Standards for Set-top Boxes

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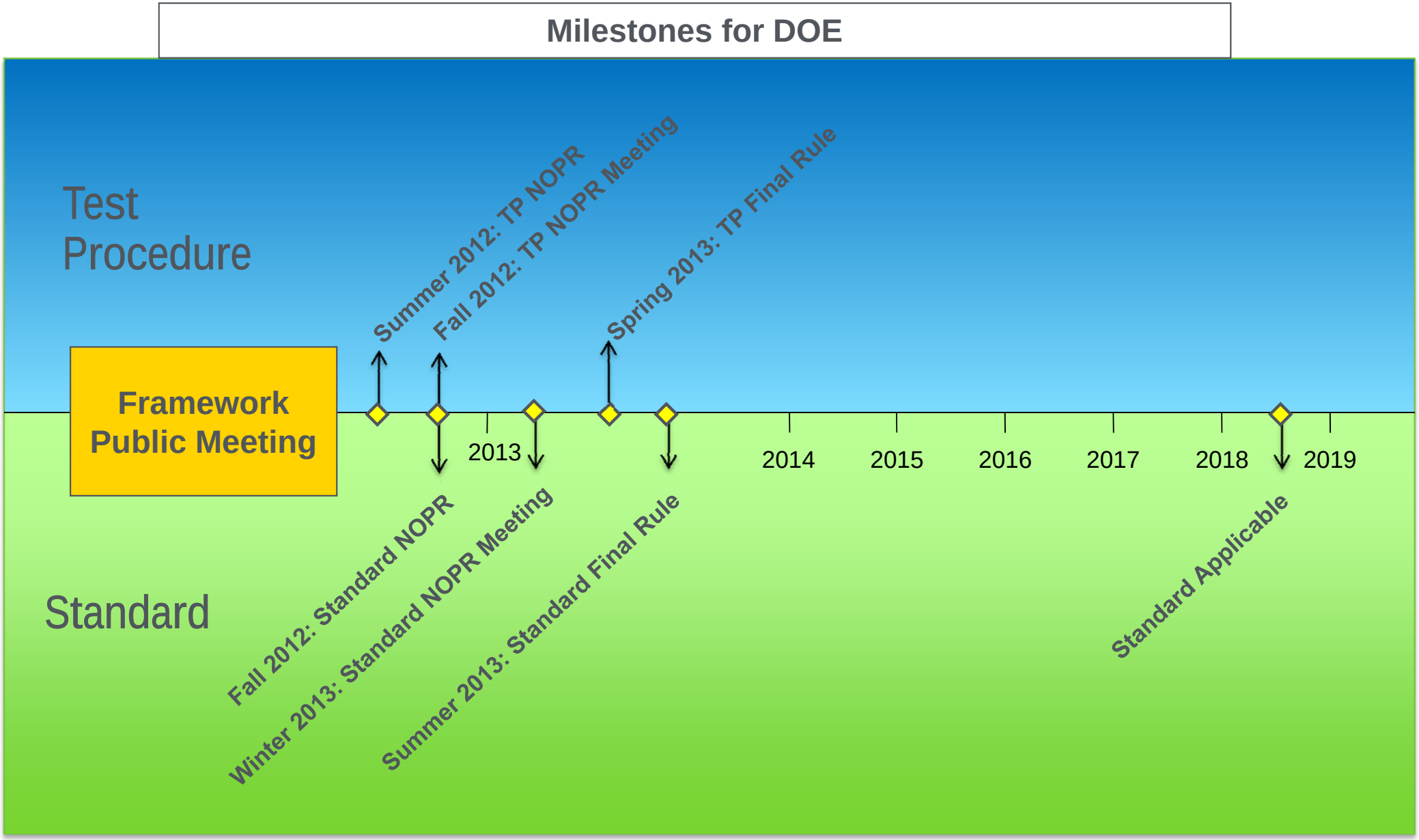
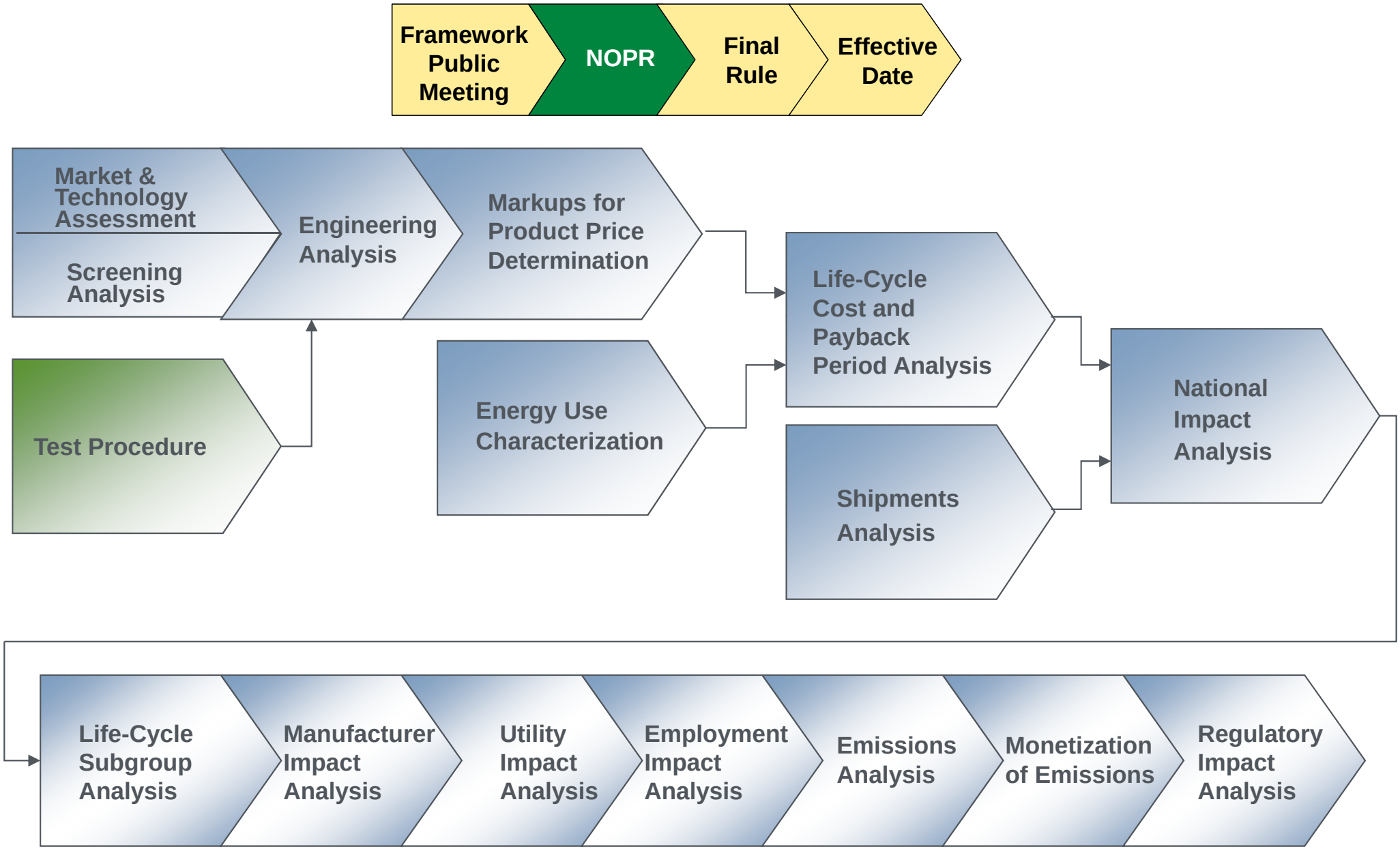


Steps in the Standards Rulemaking

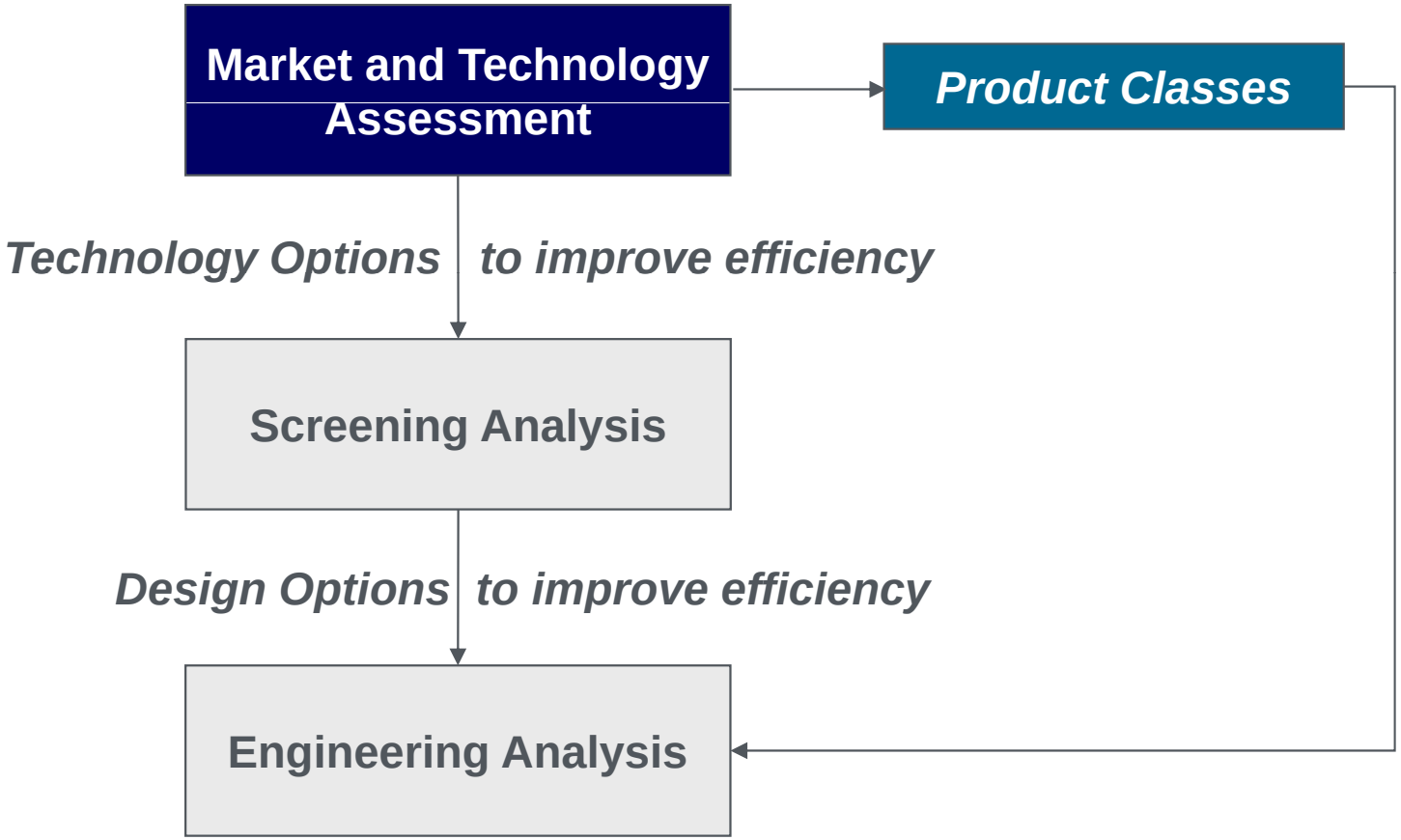


Test Procedure Objectives

- Objectives
  - To develop a representative test for measuring energy consumption
  - To measure active, standby, and off power modes as defined by EPCA (42 U.S.C 6295 (gg) (1))
  - To support data collection used in setting efficiency standards

- DOE will investigate test method to ensure that it:
  - Is repeatable
  - Represents typical household usage
  - Minimizes burden on labs

Relationship of Market and Technology Assessment to Other Analyses



Screening Analysis

Purpose

- Screen out technology options that DOE will not consider in the engineering analysis for set-top boxes.

Approach

- DOE will evaluate each technology option based on the following criteria:

Technological feasibility

Practicability to manufacture, install, and service

Adverse impacts on product or equipment utility or availability to consumers

Impacts on health or safety

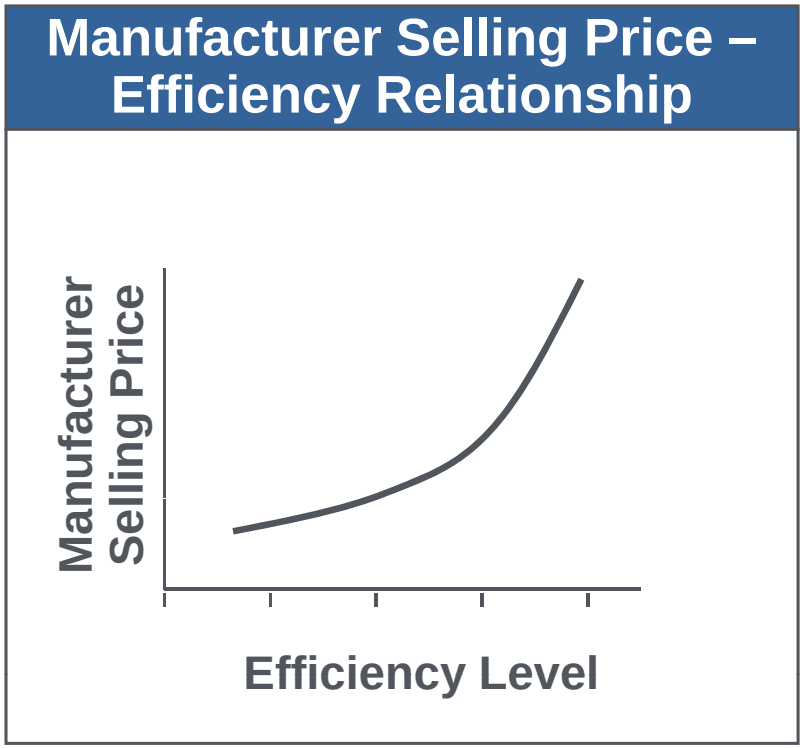
Technologies to Improve Efficiency

- DOE has preliminarily identified the following strategies for improving the efficiency of STBs
  - Power management features
    - Place processor and video decoder in a low power state (e.g. powered off or low voltage/performance state).
    - Maintain active network connections needed for security.
    - Keep RAM powered to maintain state.
  - Multi-room setups. Secondary STBs in a home could be replaced by lower power thin clients that interface with a primary STB in the home. Whole-house STB energy use may be lower using multi-room setups.
  - More efficient components (e.g. power supplies and electronic components)
  - Reduced disk energy for DVR STBs (e.g. Solid State Drives)

Engineering Analysis

- A key factor in setting the standard is the increased cost of a more efficient product.
- The Engineering Analysis determines the relationship between cost and efficiency.

Manufacturer Selling Price – Efficiency Relationship



- Determine manufacturer production costs and selling prices for different models of STBs
- Determine baseline energy levels
- Develop and analysis candidate standards levels for each product class based on design options
- Conservation Standards can be met using any technology

Feedback Is Requested

Especially on Items Identified in Request for Information

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- **In all correspondence, please refer to the Set-top Boxes rulemaking by:**
  - Set-top Boxes Rulemaking,
  - Docket Number EERE–2011–BT–NOA–0067, and
  - Regulatory Identification Number (RIN) 1904-AC52

- **Email:** STB-RFI-2011-NOA-0067@ee.doe.gov

- **Comment period closes: March 15, 2012**

- **For more information:** http://www1.eere.energy.gov/buildings/appliance_standards/residential/set_top_boxes.html

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