

Appliance and Equipment Standards Program

An Overview of the Appliance Standards Program



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Context within BTO

- Where does this Program Fit within BTO Ecosystem?
 - Codes & Standards
 - Provides cost-effective energy savings through national appliance and equipment standards.



- The Appliance and Equipment Standards Program’s mission is to fulfill its statutory obligation by:
 - Developing and amending energy conservation standards that achieve the maximum energy efficiency that is technologically feasible and economically justified.
 - Developing and amending test procedures that are repeatable, reproducible, representative, and enforceable.
 - Enforcing its certification and compliance regulations to ensure consumer savings and manufacturer adherence to DOE requirements.

Program Elements and Goals

- What are the major program elements?
 - Update and establish test procedures needed to support DOE Standards and ENERGY STAR;
 - Update and establish energy conservation standards;
 - Ensure compliance with DOE Standards and ENERGY STAR; and
 - Improve linkages to BTO technology development programs.
- The Appliance and Equipment Standards Program's current priority is to realize, by 2030, energy savings from appliance standards avoiding at least 3 billion metric tons of carbon emissions in support of the President's Climate Action Plan. Specifically, the current schedule includes:
 - 2014-2016: Complete 26 standards rulemakings, covering 30 products
 - 2017-2020: Complete 10 standards rulemakings, covering 12 products

STANDARDS SAVE *BIG*: MONEY AND ENERGY

\$63 Billion

The annual utility bill savings to consumers from standards promulgated to date in 2015. This amounts to nearly \$320 per household per year in energy bill savings.

\$2 Trillion

The cumulative utility bill savings to consumers from standards are estimated to be over \$1 trillion through 2020, growing to nearly \$2 trillion through 2030.

132 Quadrillion Btu

The cumulative energy savings of standards promulgated to date will be about 70 quadrillion British thermal units (quads) of energy through 2020, and will amount to nearly 132 quads through 2030 – more than 1 year's worth of US energy use.

40 Final Rules Issued

Includes a variety of products and Federal Building Codes.

\$545 billion

The cumulative utility bill savings to **consumers** from standards issued since January 2009 are estimated to be \$545 billion through 2030.

2.5 billion metric tons

The cumulative carbon emissions savings through 2030 – equivalent to the emissions of 524 million passenger cars in one year.

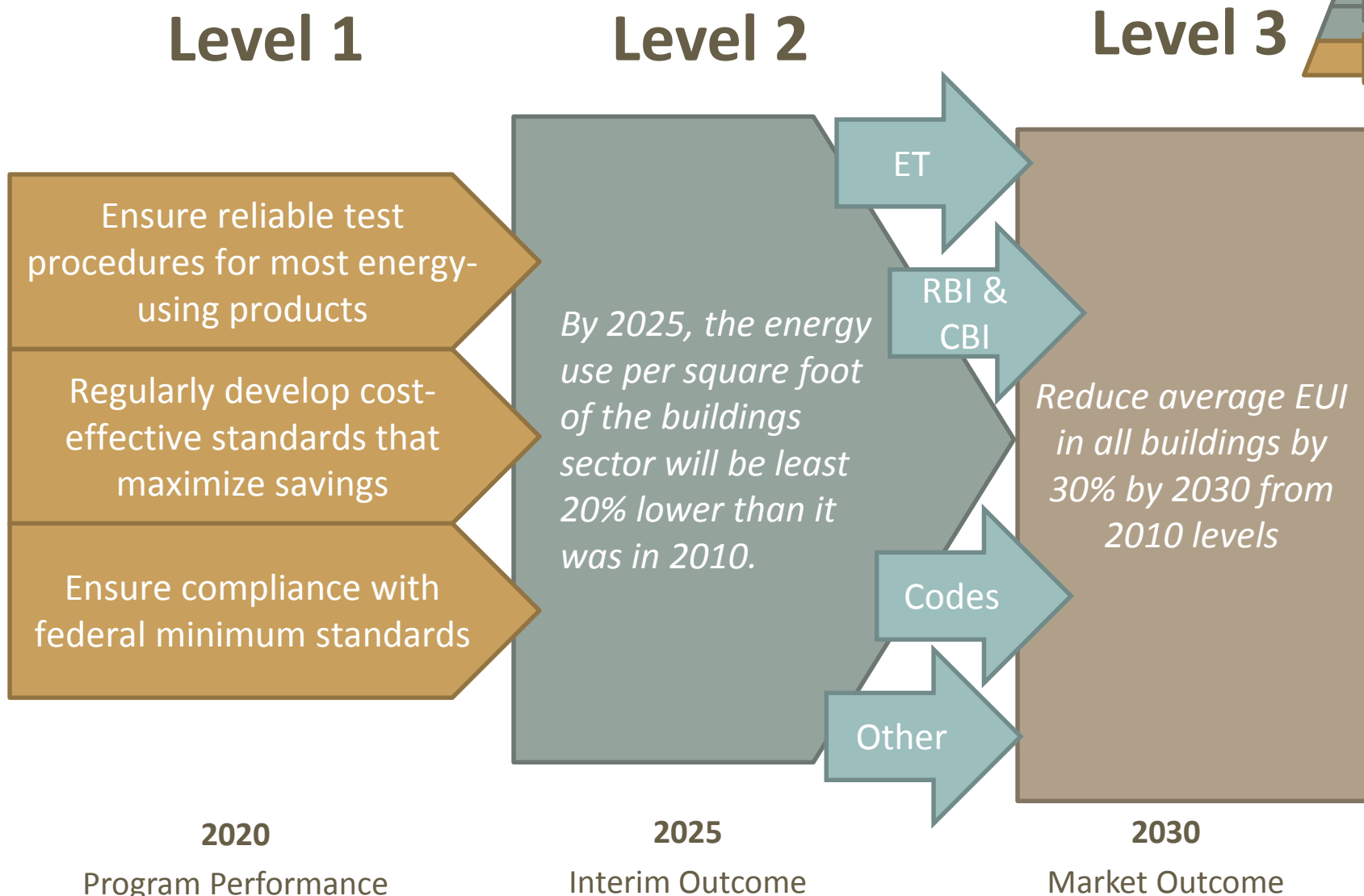
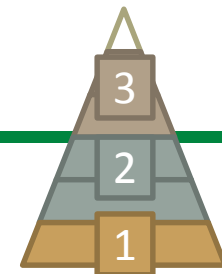
Budget and Key Performers

- Budget Fluctuates from year-to-year

(Dollars in Thousands)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017 Request
Equipment and Buildings Standards	58,302	56,080	48,840	53,359	40,812	53,217

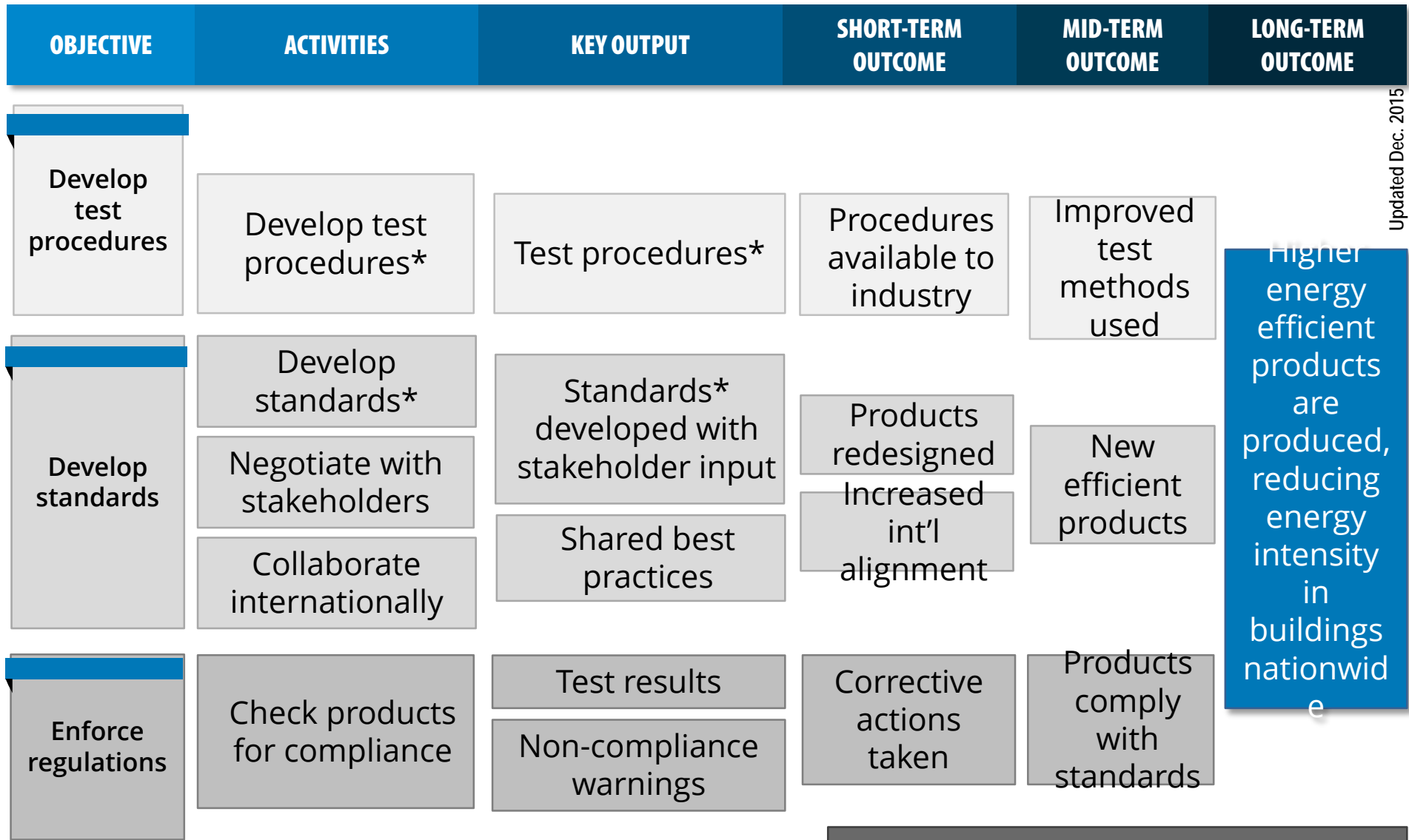
- Key Performers:
 - Navigant Consulting
 - LBNL
 - PNNL
 - ORNL
 - NIST

Program Goals Flow Diagram



Appliance & Equipment Standards Program Logic Model

Updated Dec. 2015



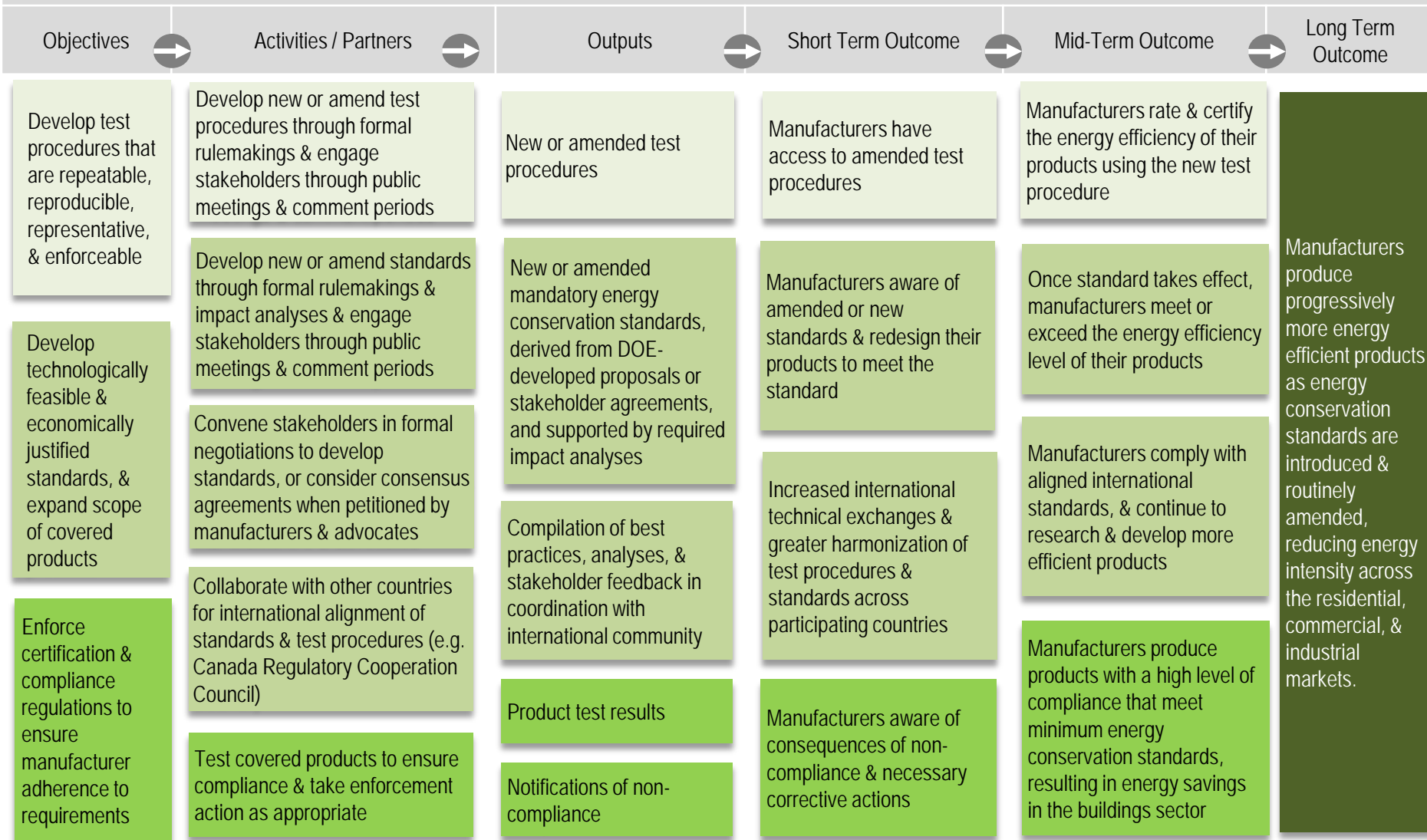
* New or amend(ed) existing; Review cycle is every 6-7 years

EXTERNAL INFLUENCES

- DOE Budget
- Energy Prices
- Market Incentives
- Legislation / Regulation
- Real Estate Market

The Appliance & Equipment Standards Program promulgates energy conservation standards and test procedures in a rulemaking process to reduce energy consumption across residential, commercial, and industrial buildings.

External Influences: DOE budget, Energy prices, Real estate market, Market incentives, Legislation / Regulation



Appliance Standards Program's Interim Market Goal

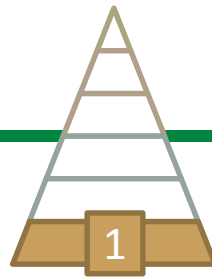


By 2025, the energy use intensity (energy use per square foot) of the buildings sector will be least 20% lower than in 2010.

- Connections Between Interim Goal and Program Strategy
 - Federal Minimum Standards cover over 85% of residential energy use and more than 75% of all commercial energy use so program activities directly translate into efficiency improvements.
- Current Status:
 - EIA's most recent estimate of EUI in the buildings sector for 2015 was: 139 kBtu per sq. ft. which is about 6% lower than the EUI in 2010.

This goal is inline with the Appliance and Equipment Standards Program's contribution to the President's Climate Action Plan through enacting standards between 2008 and 2016 that reduce carbon pollution by at least 3 billion tons of CO₂ by 2030.

Key Activities for Program Performance



Ensuring availability of reliable test procedures:

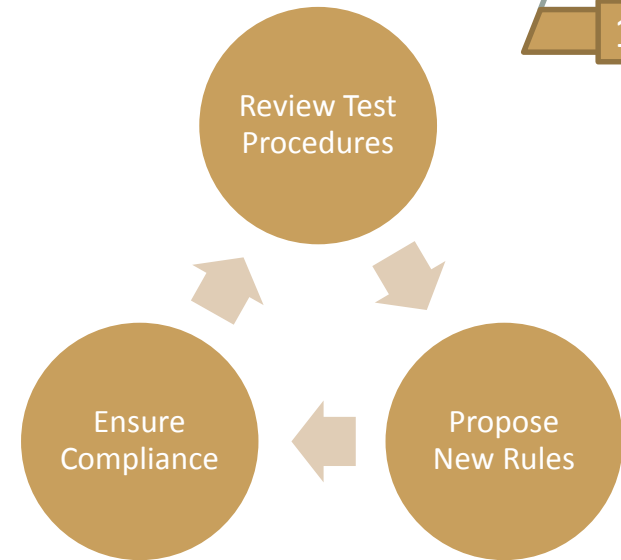
- Establish and update, as needed, test procedures that reliably rate the efficiency of all covered products

Establishing/updating minimum standards:

- Develop (or update) standards for covered products that maximize the energy efficiency that is technologically feasible and economically justified

Ensuring full compliance:

- Support the verification of product efficiency by the testing of covered products



The Standards Cycle:

A continuous process with new standards being developed according to statutes established in law. The Standards Program reviews test procedures and revises minimum efficiency standards in a process that is open to the public. Once a standard is adopted, the program ensures compliance through product testing.