

Invitation to Participate Set-top Boxes and Network Equipment

2013 Appliance Efficiency Rulemaking
California Energy Commission

April 4, 2013

Ken Rider
Appliances & Process Energy Office
Efficiency & Renewable Energy Division
Ken.Rider@energy.ca.gov / 916-654-5006



The California Energy Commission

- ❑ The state's primary energy policy and planning agency, created by the Legislature in 1974
- ❑ Responsibilities include promoting energy efficiency and conservation by setting minimum appliance and building efficiency standards, and other cost-effective measures
- ❑ The Commission's appliance and building energy efficiency standards have saved Californians more than \$74 billion in reduced electricity bills since 1975



Appliance Efficiency – A Statutory Mandate

Warren-Alquist State Energy Resources Conservation and Development Act

Public Resources Code Section 25402(c)

Requires the Commission to adopt minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy and water efficient appliances whose use requires a significant amount of energy or water on a statewide basis.



Scoping Workshop

August 31, 2011

- ❑ The Commission held a Public Workshop to seek comments about the proposed scope of potential new appliance efficiency measures.

- ❑ Interested parties
 - gave technical presentations
 - provided comments
 - submitted proposals for various appliances



Order Instituting Rulemaking

March 14, 2012

- ❑ The Commission issued an Order Instituting Rulemaking (OIR) to begin the process of considering standards, test procedures, labeling requirements, and other efficiency measures for a number of appliances.
- ❑ The rulemaking was divided into three phases based on the information provided by the stakeholders and staff analysis.
- ❑ More information related to this proceeding is available online.
<http://www.energy.ca.gov/appliances/2012rulemaking/index.html>



Purpose of Invitation to Participate

- ❑ The Commission is gathering information to determine how to proceed with products listed in Phase 1 of the OIR.
- ❑ The ITP is an opportunity for stakeholders to inform the Commission's policy, direction, and process.
- ❑ ITP requests product, market, and other relevant information.
- ❑ All interested parties are encouraged to take advantage of this important opportunity to shape the development of draft efficiency standards and measures.



Phase 1 Products

- ❑ **Consumer Electronics**
(computers, displays, game consoles and set-top boxes)
- ❑ **Lighting**
(fluorescent dimming ballasts, light-emitting diodes and multifaceted reflector lamps)
- ❑ **Water Appliances** (faucets, toilets, urinals, and water meters)
- ❑ **Other Appliances** (commercial clothes dryers, air filter labeling, residential pool pumps & motors and portable electric spa labeling)



Basic Information

Basic Information Requested (page 2 of the ITP):

- ❑ Product Definition and Scope
 - ❑ Set-top box types, thin client, router, modem?
- ❑ Existing Test Procedures
- ❑ Sources of Test Data
- ❑ Existing Standards and Standards under Development
- ❑ Product Lifetime for each product type (product's expected time in service after first deployment)
- ❑ Product Development Trends



Operations, Functions, and Modes

- ❑ What are the operational states of Set Top Box (STB) and network equipment? Are there methods for measuring each of these states?
- ❑ What is the most consumptive state, which is the lowest consumptive state (other than a mechanical off)?
- ❑ How frequently are products in each of these states?
- ❑ How well does energy consumption scale with the utilization of hardware such as processors by processing load and networking hardware by data rate/volume, number of clients etc?
- ❑ What components and functions represent a fixed energy consumption while the product is on or in a sleep state?



Energy Saving Technologies, Components, and Features

- ❑ What power management features exist at both the system and subsystem levels?
- ❑ How long does it take products to wake from various sleep modes? What contributes to this wake time?
- ❑ To what extent are energy efficient mobile networking technologies incorporated into STBs and network equipment?
- ❑ What are the design practices and technologies incorporated into the most efficient products?
- ❑ What are the costs associated with more efficient hardware such as energy efficient ethernet technology?
- ❑ How well are hardware efficiency features utilized by system software?



Market Characteristics

- ❑ How many STBs, modems, and routers are sold to end-users each year in California? How many are currently in use? Commercial or residential?
- ❑ To what extent is the market uniform or different within the state, country, continent, and world?
- ❑ Is there a particular time of the year when new models are released?
- ❑ What is the range of efficiency in the market for products with similar performance? Is the variance great?
- ❑ How frequently are STBs, routers, and modems updated after initial release (firmware and hardware)?



Market Competition for Efficiency Products

- ❑ How many small businesses are involved in the manufacture, sale, or installation of these products?
- ❑ What are the current market drivers towards improving efficiency?
- ❑ What markets currently place requirements on the efficiency of products through regulations or procurement requirements?
- ❑ How are consumers able to identify the most efficient products on the market?
- ❑ What is the current market share of products that meet ENERGY STAR's STB specifications versions 2, 3, and 4 and latest small network equipment draft version 1.



STB Specific Market Characteristics

- ❑ How many STBs are purchased by service providers each year?
- ❑ How many STBs are in service in California? What percentage of STBs have been in service for 1, 2, 3, 4, or 5+ years?
- ❑ How do service providers determine how much to charge for a STB? How is this related to the discount rate provided along with the use of a cable card?



STB Specific Market Characteristics

- ❑ How are requests for more efficient set-top boxes resolved by service providers?
- ❑ How do set-top box manufacturers collaborate with service providers during research and development (R&D)?
- ❑ For STBs where constant connection is required, How do service providers handle customer implementation of energy saving technologies such as smart power strips?



Other

- ❑ What types of operations prevent a STB and network equipment from entering a sleep state? What are some of the satellite specific barriers to sleep modes?
- ❑ What types of events cause a STB or network equipment to automatically awake from a sleep state?
- ❑ What product development trends in the market may have an impact on power consumption or proper categorization of devices?



Other

- ❑ What minimum functionalities are required to be maintained by networking protocols?
- ❑ What types of products are powered by network connections such as “power over ethernet”?
- ❑ What are the consumption characteristics of Low-Noise Block (LNB) and Optical Terminal Network (ONT) devices?



How to Submit Data & Information

- ❑ Responses to the Invitation should be submitted in writing to the Dockets Unit by 4:00 p.m. (Pacific Daylight Savings Time) on May 9, 2013.
- ❑ The Commission encourages interested parties to send information **up to 5 MB** by e-mail at docket@energy.ca.gov
- ❑ To comment on Set-Top Boxes and Network Equipment please include 12-AAER-2A in the subject line.



How to Submit Data & Information

(Continued)

- If the file size is more than 5 MB, if the information includes an application for confidential designation, or if you prefer, paper copies of responses with electronic information provided on a CD or DVD may be sent to:

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 12-AAER-2A
1516 Ninth Street
Sacramento, CA 95814-5512



Confidentiality of Data

If interested parties need to maintain the confidentiality of specific data or information, they should contact Jared Babula in the Commission's Chief Counsel's Office *before* submitting a response to this Invitation. Otherwise, all responses received will become publicly available.

Jared Babula,

California Energy Commission,

Chief Counsel's Office

1516 Ninth Street, MS 14, Sacramento, CA 95814-5512

Telephone: (916) 651-1462

Email: jared.babula@energy.ca.gov



Next Steps

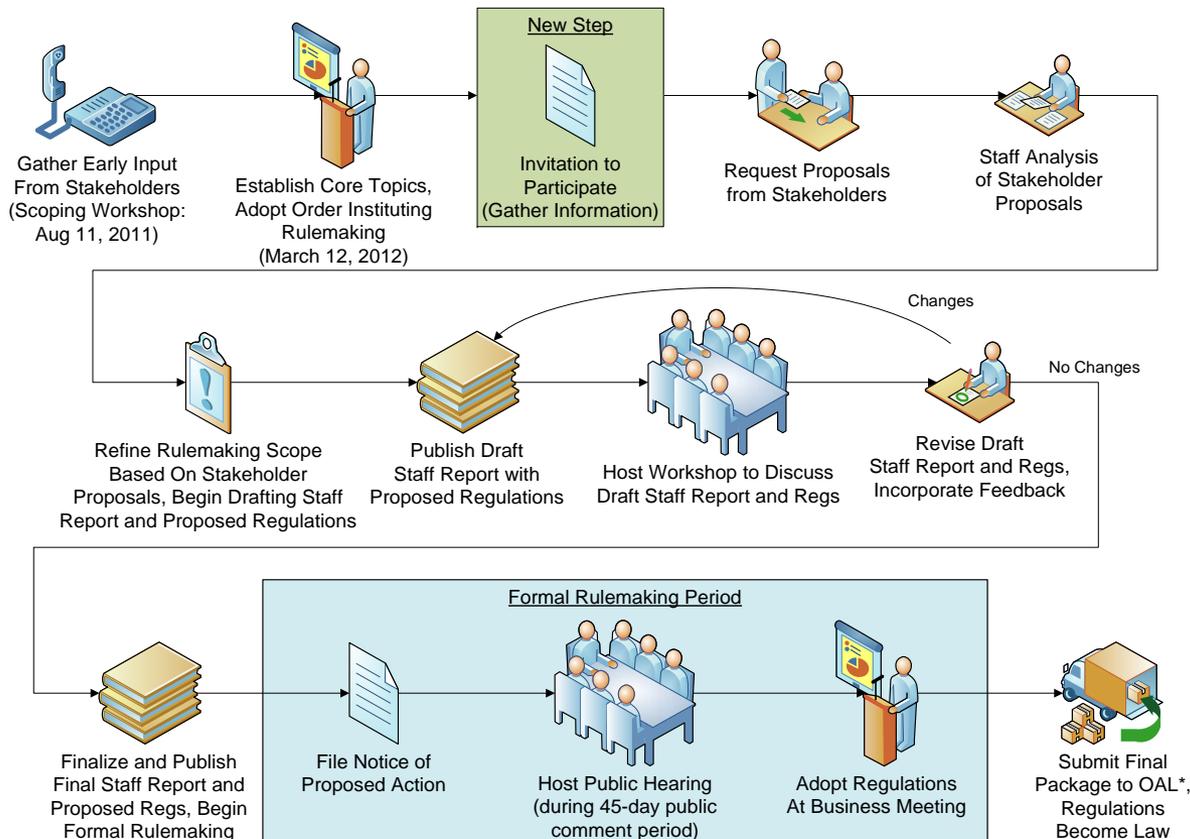
- ❑ Public workshop after the close of the ITP comment period to consider the merits of information and data received.
- ❑ Following the workshop, the Commission will request proposals for updated efficiency standards or measures.
- ❑ These proposals should be based on the information received through the ITP.
- ❑ Commission staff are available to discuss questions and concerns at anytime during the proceeding.



Public Participation

Appliance Energy Efficiency Rulemaking Process

3/22/2013



*Office of Administrative Law



Contact Information

Ken Rider

Ken.Rider@energy.ca.gov / 916-654-5006

Please submit data and information to
Product-Specific Docket #12-AAER-2A
at docket@energy.ca.gov

The ITP is available online:

<http://www.energy.ca.gov/appliances/2013rulemaking/>

