**EER** = \frac{\text{Total Cooling Capacity}}{\text{Total Electrical Power Consumption}}

where \( \dot{Q}_c^k(T) \) and \( \dot{E}_e^k(T) \) are the space cooling capacity and electrical power consumption determined from the 30-minute data collection interval of the same steady-state wet coil cooling mode test and calculated as specified in section 3.3. To help differentiate among the resulting EER values, add the letter identification for each steady-state test as a subscript (e.g., \( EER_{A2} \)). These letter identifiers are noted in Tables 3, 4, 5 and 6 and can be any of the following: A, A2, A1, B, B2, B1, E, and F.

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**DEPARTMENT OF ENERGY**

10 CFR Part 431


RIN 1904–AC00

Energy Conservation Standards for Metal Halide Lamp Fixtures: Public Meeting and Availability of the Preliminary Technical Support Document

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of public meeting and availability of preliminary technical support document.

**SUMMARY:** The U.S. Department of Energy (DOE) will hold a public meeting to discuss and receive comments on: the equipment classes that DOE plans to analyze for purposes of establishing energy conservation standards for metal halide lamp fixtures (MHLFs); the analytical framework, models, and tools that DOE is using to evaluate standards for this equipment; the results of preliminary analyses DOE performed for this equipment; and potential energy conservation standard levels derived from these analyses that DOE could consider for this equipment. DOE encourages written comments on these subjects. To inform interested parties and facilitate this process, DOE has prepared an agenda, a preliminary technical support document (TSD), and briefing materials, which are available at [http://www1.eere.energy.gov/buildings/appliance_standards/commercial/metal_halide_lamp_fixtures.html](http://www1.eere.energy.gov/buildings/appliance_standards/commercial/metal_halide_lamp_fixtures.html).

**DATES:** DOE will hold a public meeting on Monday, April 18, 2011 beginning at 9 a.m. in Washington, DC. The agenda for the public meeting will cover this energy conservation standards rulemaking for MHLFs. Any person requesting to speak at the public meeting should submit such a request, along with an electronic copy of the statement to be given at the public meeting, before Monday, April 11, 2011. Written comments are welcome, especially following the public meeting, and should be submitted by May 16, 2011.

In addition, you can attend the public meeting via webinar. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's Web site at: [http://www1.eere.energy.gov/buildings/appliance_standards/commercial/metal_halide_lamp_fixtures.html](http://www1.eere.energy.gov/buildings/appliance_standards/commercial/metal_halide_lamp_fixtures.html). Participants are responsible for ensuring their systems are compatible with the webinar software.

**ADDRESSES:** The public meeting will be held at the U.S. Department of Energy, Forrestal Building, Room 8E–089, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Please note that foreign nationals participating in the public meeting are subject to advance security screening procedures. If a foreign national wishes to participate in the public meeting, please inform DOE of this fact as soon as possible by contacting Ms. Brenda Edwards at (202) 586–2945 so that the necessary procedures can be completed. Interested persons may submit comments, identified by docket number EERE–2009–BT–STD–0018, by any of the following methods:

- **Federal eRulemaking Portal:** [http://www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- **E-mail:** MHLF–2009–STD–0018@ee.doe.gov. Include EERE–2009–BT–STD–0018 and/or RIN 1904–AC00 in the subject line of the message.

**Instructions:** All submissions received must include the agency name and docket number.

**Docket:** Access to the docket to review background documents, the transcript of the public meeting, or comments received is available at the U.S. Department of Energy, Sixth Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024. (202) 586–2945, between 9 a.m. and 4 p.m., Monday through Friday.
- Inserting definitions pertaining to “metal halide ballast,” 2 “metal halide lamp,” 3 and “metal halide lamp fixtures” 4 (among others) into section 321 of EPCA (42 U.S.C. 6291(62), (63), and (64));
- Amending section 323(b) of EPCA to direct DOE to develop a test procedure for metal halide (MH) lamp ballasts that contain the ballasts described at 42 U.S.C. 6295(hh)(1)(A).

In addition to prescribing minimum efficiency requirements for the previously described MH lamp ballasts contained in MHLFs, EISA 2007 amended EPCA to exclude certain types of MH lamp fixtures from the statutorily prescribed energy conservation standards as described at 42 U.S.C. 6295(hh)(1)(B).

Pursuant to section 310 of EISA 2007, EPCA further directed DOE to incorporate standby mode and off mode energy use in any amended (or new) standard adopted after July 1, 2010. (42 U.S.C. 6295(gg)(3)) Because this energy conservation standards rulemaking must be completed by January 1, 2012, the requirement to incorporate standby mode and off mode energy use into the energy conservation standards analysis is applicable. The application of standby mode and off mode energy use in this rulemaking is discussed in detail in the TSD.

The following statutory provisions (and associated rulemakings) are related to MHLFs but are separate from the current standards rulemaking:
- In conjunction with energy conservation standards for MHLFs, EPCA required DOE to undertake a determination to see if energy conservation standards for High Intensity Discharge (HID) lamps (including MH lamps) would be technologically feasible and economically justified, and would result in significant energy savings. (42 U.S.C. 6317(a)(1)) DOE completed the HID determination and published a final rule (75 FR 67975) on July 1, 2010 concluding that energy conservation standards for certain HID lamps are technologically feasible and economically justified.
- DOE completed a test procedure rulemaking for MH lamp ballasts, as required by EPCA through amendments from EISA 2007. (42 U.S.C. 6293(b)(18)) The final rule test procedure for MH lamp ballasts was published in the Federal Register on March 10, 2010. 75 FR 10950.
- The FTC is directed to conduct a labeling rulemaking as part of the requirements set forth by EISA 2007 for MHLFs. (42 U.S.C. 6294(a)(2)(C)) To this end, the FTC published a final rule in the Federal Register on July 9, 2008, amending 16 CFR part 305, “Rule Concerning Disclosures Regarding Energy Consumption and Water Use of Certain Home Appliances and Other Products Required Under the Energy Policy and Conservation Act (‘Appliance Labeling Rule’).” 73 FR 39221. On October 23, 2008, the FTC

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1 For editorial reasons, upon codification in the U.S. Code, Part B of Title III was re-designated as Part A.

2 “Metal halide ballast” means “a ballast used to start and operate metal halide lamps.” (42 U.S.C. 6291(62)).

3 “Metal halide lamp” means “a high intensity discharge lamp in which the major portion of the light is produced by radiation of metal halides and their products of dissociation, possibly in combination with metallic vapors.” (42 U.S.C. 6291(63)).

4 “Metal halide lamp fixture” means “a light fixture for general lighting application designed to be operated with a metal halide lamp and a ballast for a metal halide lamp.” (42 U.S.C. 6291(64)).
published in the Federal Register additional amendments to 16 CFR part 305 for MHLFs in the form of technical corrections. 73 FR 63066. Both final rules fulfilled the FTC’s obligations under EISA 2007 pertaining to labeling requirements for MHLFs and MH lamp ballasts.

B. Current Rulemaking Process

On December 30, 2009, DOE published a notice announcing the availability of the framework document, “Energy Conservation Standards Rulemaking Framework Document for Metal Halide Lamp Fixtures,” and a public meeting to discuss the proposed analytical framework for the rulemaking. 74 FR 69036. DOE also posted the framework document on its Web site describing the procedural and analytical approaches DOE anticipated using to evaluate the establishment of energy conservation standards for MHLFs. This document is available at http://www1.eere.energy.gov/buildings/appliance_standards/commercial/pdfs/mh_eere_framework.pdf.

DOE field a public meeting on January 26, 2010, to describe the various rulemaking analyses DOE would conduct, such as the engineering analysis, the life-cycle cost (LCC) and payback period (PBP) analyses, and the national impact analysis (NIA); the methods for conducting them; and the relationship among the various analyses. Manufacturers, trade associations, and environmental advocates attended the meeting. The participants discussed multiple issues including test procedures, a system approach and ballast efficiency metric, DOE’s engineering analysis, LCCs, efficiency levels, and energy savings.

Comments received since publication of the framework document have helped DOE identify and resolve issues involved in the preliminary analyses. Chapter 2 of the preliminary TSD summarizes and addresses the comments DOE received.

II. Summary of the Analyses

DOE conducted in-depth technical analyses in the following areas for the MHLFs currently under consideration: (1) Engineering, (2) energy use characterization, (3) markups to determine product price, (4) LCC and PBP, and (5) national impact. The preliminary TSD presents the methodology and results of each analysis. The analyses are described in more detail below.

DOE conducted several other analyses that either support the five major analyses or are preliminary analyses that will be expanded in the Notice of Proposed Rulemaking (NOPR). These include the market and technology assessment; the screening analysis, which contributes to the engineering analysis; and the shipments analysis, which contributes to the NIA. DOE has begun some preliminary work on the manufacturer impact analysis and identified the methods to be used for the LCC subgroup analysis, the environmental assessment, the employment analysis, the regulatory impact analysis, and the utility impact analysis. DOE will expand on these in the NOPR.

A. Engineering Analysis

The engineering analysis establishes the relationship between manufacturer selling price and equipment efficiency. This relationship serves as the basis for cost-benefit calculations for individual consumers, manufacturers, and the nation. The engineering analysis identifies representative baseline models, which is the starting point for analyzing technologies that provide energy efficiency improvements. A baseline model refers to a model (or models) having features and technologies typically found in equipment currently offered for sale. The baseline model in each equipment class represents the characteristics of certain MHLFs in that class and, for fixtures already subject to energy conservation standards, is usually a model that just meets the current standard. Chapter 5 of the preliminary TSD discusses the engineering analysis.

B. Energy Use Characterization

The energy use characterization provides estimates of annual energy usage for MHLFs, which DOE uses in the LCC and PBP analyses and the NIA. DOE developed energy usage estimates for all of the equipment classes analyzed in the engineering analysis as the basis for its energy use estimates. Chapters 2 and 6 of the preliminary TSD provide detail on the energy use characterization.

C. Markups To Determine Installed Price

DOE derives the installed prices for equipment based on manufacturer markups, retailer markups, distributor markups, contractor markups, builder markups, and sales taxes. In deriving these markups, DOE has determined the distribution channels for product sales, the markup associated with each party in the distribution channels, and the existence and magnitude of differences between markups for baseline equipment (baseline markups) and for more efficient equipment (incremental markups). DOE calculates both overall baseline and overall incremental markups based on the equipment markups at each step in the distribution channel. The overall incremental markup relates the change in the manufacturer sales price of higher efficiency models (the incremental cost increase) to the change in the retailer or distributor sales price. Chapters 2 and 7 of the preliminary TSD provide detail on the estimation of markups.

D. Life-Cycle Cost and Payback Period Analyses

The LCC and PBP analyses determine the economic impact of potential standards on individual consumers. The LCC is the total consumer expense for equipment over its lifetime. The LCC analysis compares the LCCs of equipment designed to meet possible energy conservation standards with the LCCs of equipment likely to be installed in the absence of standards. DOE determines LCCs by considering (1) Total installed cost to the purchaser (which consists of manufacturer selling price, sales taxes, distribution chain markups, and installation cost); (2) the operating expenses of the equipment (energy use and maintenance); (3) equipment lifetime; and (4) a discount rate that reflects the real consumer cost of capital and puts the LCC in present-value terms. The PBP represents the number of years needed to recover the increase in purchase price (including installation cost) of more efficient equipment through savings in the operating cost. PBP is equal to the change in total installed cost due to increased efficiency divided by the change in annual operating cost from increased efficiency. Chapters 2 and 8 of the preliminary TSD provide detail on the LCC and PBP analyses.

E. National Impact Analysis

The NIA estimates the national energy savings (NES) and the net present value (NPV) of total consumer costs and savings expected to result from new standards at specific efficiency levels (referred to as candidate standard levels). DOE calculated NES and NPV at each efficiency level for each candidate standard for MHLFs as the difference between a base-case forecast (without new standards) and the standards-case forecast (with standards). DOE determined national annual energy usage by multiplying the number of units in use (by vintage) by the average unit energy usage (also by vintage). Cumulative energy savings are the sum of the annual NES determined over a specified time period. The national NPV...
is the sum over time of the discounted net savings each year, which consists of the difference between total operating cost savings and increases in total installed costs. Critical inputs to this analysis include shipments projections, retirement rates (based on estimated product lifetimes), and estimates of changes in shipments and retirement rates in response to changes in product costs due to standards. Chapters 2 and 10 of the preliminary TSD provide detail on the NIA.

DOE consulted with interested parties on all of the analyses and invites further input on these topics. The preliminary analytical results are subject to revision following review and input from the public. A revised TSD will be made available upon issuance of a NOPR. The final rule will contain the final analysis results and be accompanied by a final rule TSD.

DOE encourages those who wish to participate in the public meeting to obtain the preliminary TSD and be prepared to discuss its contents. However, public meeting participants need not limit their comments to the topics identified in the preliminary TSD. DOE is also interested in receiving information on other relevant issues that participants believe would affect energy conservation standards for this equipment or that DOE should address in the NOPR.

DOE welcomes all interested parties, regardless of whether they participate in the public meeting, to submit comments and information in writing by May 16, 2011.

The public meeting and associated Webinar will be conducted in an informal, conference style. A court reporter will be present to record the minutes of the meeting. There shall be no discussion of proprietary information, costs, prices, market shares, or other commercial matters regulated by U.S. antitrust laws.

After considering all comments and additional information it receives from interested parties or through further analyses, DOE will prepare and publish in the Federal Register a NOPR. The NOPR will include proposed energy conservation standards for the equipment covered by the rulemaking. Members of the public will have an opportunity to submit written and oral comments on the proposed standards.