DOCKETED

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Project Title:	Small Diameter Directional LED Lamps and General Purpose LED Lamps
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CALIFORNIA ENERGY COMMISSION
1516 Ninth Street Sacramento, California 95814
Main website: www.energy.ca.gov

NOTICE OF PROPOSED ACTION

PROPOSED AMENDMENTS TO APPLIANCE EFFICIENCY REGULATIONS California Code of Regulations, Title 20, Sections 1601 through 1609

CALIFORNIA ENERGY COMMISSION Docket Number 15-AAER-6

October 16, 2015

PUBLIC HEARINGS

The Energy Commission's Lead Commissioner for Energy Efficiency will hold a public hearing on the following date and time to receive public comment on the Express Terms:

Wednesday, November 18, 2015
10 a.m. (Pacific Time)
California Energy Commission
1516 Ninth Street
Art Rosenfeld Hearing Room - First Floor
Sacramento, California 95814
(Wheelchair Accessible)

Audio for the **November 18, 2015**, Lead Commissioner hearing will be broadcast over the Internet. Details regarding the Energy Commission's webcast can be found at: [www.energy.ca.gov/webcast].

At this hearing any person may present statements or arguments relevant to the proposed action. Interested persons may also submit written comments (see below).

You may participate in this meeting through WebEx, the Commission's online meeting service. Presentations will appear on your computer screen, and you may listen to audio via your computer or telephone. Please be aware that the meeting may be recorded.

To remotely join the meeting:

VIA COMPUTER: Go to https://energy.webex.com and enter the unique meeting number: 924 646 407. When prompted, enter your name and the following meeting password: Meeting@10.

The “Join Conference” menu will offer you a choice of audio connections:

1. To call into the meeting: Select "I will call in" and follow the on-screen directions.

2. International Attendees: Click on the "Global call-in number" link.

3. To have WebEx call you: Enter your phone number and click "Call Me.”

4. To listen over the computer: If you have a broadband connection, and a headset or a computer microphone and speakers, you may use VolP (Internet audio) by going to the Audio menu, clicking on “Use Computer Headset,” then “Call Using Computer.”

VIA TELEPHONE ONLY (no visual presentation): Call 1-866-469-3239 (toll-free in the U.S. and Canada). When prompted, enter the unique meeting number: 924 646 407. International callers may select their number from https://energy.webex.com/energy/globalcallin.php.

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If you have difficulty joining the meeting, please call the WebEx Technical Support number at 1-866-229-3239.

PROPOSED ADOPTION HEARING

The Energy Commission will hold a public hearing for consideration and possible adoption of the 45-Day Language on the following date and time unless the Energy Commission decides to modify the Express Terms through issuance of 15-Day Language.

Wednesday, December 9, 2015
10 a.m. (Pacific Time)
California Energy Commission
1516 Ninth Street
Art Rosenfeld Hearing Room - First Floor
Sacramento, California 95814
(Wheelchair accessible)

Audio for the December 9, 2015, adoption hearing will also be broadcast over the internet. Details regarding the Energy Commission's webcast can be found at: [www.energy.ca.gov/webcast].

If you have a disability and require assistance to participate in these hearings, please contact Lou Quiroz at (916) 654-5146 at least 5 days in advance.

At this hearing, any person may present oral or written statements or arguments relevant to the proposed action. Interested persons may also submit written comments.

Please provide written comments to be considered at the Proposed Adoption hearing by **November 30, 2015**. The Energy Commission appreciates receiving written comments at the earliest possible date.

PUBLIC COMMENT PERIOD/WRITTEN COMMENTS (Gov. Code, § 11346.5, subd. (a)(15))

The public comment period for this Notice of Proposed Action will be from October 16, 2015 through and including November 30, 2015. Any interested person may submit written comments on the proposed amendments. Written comments will be accepted and considered for the Energy Commission adoption hearing if they are received by 5 p.m. on November 30, 2015. The Energy Commission appreciates receiving written comments at the earliest possible date.

Please submit comments to the Commission using the Commission's e-commenting feature by going to the Commission's 2015 Appliance Efficiency Rulemaking webpage http://www.energy.ca.gov/appliances/2015-AAER-06/rulemaking/ and click on the "Submit e-comment" link. A full name, email address, comment title, and either a comment or an attached document (.doc, .docx, or .pdf format) is mandatory. After a challenge-response test used by the system to ensure that responses are generated by a human user and not a computer, click on the "Agree & Submit Your Comment" button to submit the comment to the Energy Commission Dockets Unit.

Please note that written comments, attachments, and associated contact information included within the written comments and attachments, (e.g., your address, phone, email, etc.) become part of the viewable public record.

You are encouraged to use the electronic filing system, described above, to submit comments. If you are unable to submit electronically, a paper copy of your comments may be sent to:

Docket Unit
California Energy Commission
Docket No. 15-AAER-6
1516 9th Street, MS-4
Sacramento, CA 95814
Or email them to: DOCKET@energy.ca.gov.

AUTHORITY AND REFERENCE (Gov. Code, § 11346.5, subd. (a)(2) and Cal. Code Regs., tit. 1, § 14)

The Energy Commission proposes to adopt the amendments under the authority of Public Resources Code sections 25213(a), 25218(e), 25402(c)(1), 25402.5. The proposed amendments implement, interpret, and make specific Public Resources Code section 25402.

INTRODUCTION - INFORMATIVE DIGEST AND POLICY STATEMENT OVERVIEW (Gov. Code, § 11346.5, subd. (a)(3))

Since 1975, California's building and appliance energy efficiency standards have saved Californians an estimated $75 billion in reduced electricity bills. The state's appliance efficiency regulations saved an estimated 22,923 gigawatt hours (GWh) of electricity and 1,626 million therms of natural gas in 2012 alone, resulting in about $5.24 billion in savings to California consumers in 2012 from these regulations. The proposed standards represent the next step in California's long history of resource efficiency and economic savings.

The Appliance Efficiency Regulations (Title 20, Sections 1601-1609 of the California Code of Regulations) contain definitions, test procedures, labeling and marking requirements, and efficiency standards for state and federally regulated appliances. Appliance manufacturers are required to certify to the California Energy Commission that their products meet all applicable state and federal regulations pertaining to efficiency before their products can be included in the Energy Commission's database of approved appliances and sold or offered for sale in California.

The Commission is proposing to amend energy efficiency standards in two distinct areas: Small Diameter Directional Lamps (SDDLs) and general service light emitting diode (LED) lamps (sections 1601(k), 1602(k), 1604(k),1605.3(k), 1606); additionally the Energy Commission is proposing new marking and labeling requirements for LEDs (section 1607(d)(12)). Changes to portable luminaire standards are proposed in order to be consistent with proposed changes to LED standards (section 1605.3(n). To correct an existing error in the regulatory language, the Energy Commission is proposing changes to section 1605.1(k) to eliminate a redundant sentence and for consistency with the proposed changes to SDDL and LED standards.

The proposed standards will provide electricity savings of 32,792 gigawatt-hours (GWh) over the first 13 years of implementation and monetary savings of $4.27 billion to California consumers over that period. The resulting economic impact to California is

positive, with macroeconomic models indicating an increase of both job-years and real disposable personal income.

The Energy Commission has prepared this Notice of Proposed Action (NOPA) and an Initial Statement of Reasons (ISOR) as part of the supporting documents to adopt the proposed amendments. The Energy Commission has also published the Express Terms (45-Day Language) of the proposed amendment language. These documents can be obtained from the contact persons designated below or from the Energy Commission website at: [http://www.energy.ca.gov/appliances/2015-AAER-06/rulemaking/].

I. General Service LED Lamps

General Service LED lamps are white light LED replacement lamps and retrofit kits with E12, E17, E26, or GU-24 bases, including omnidirectional, directional, and decorative lamps. These LED replacement lamps use as little as one tenth of the energy of incandescent lamps, and their efficiency continues to improve. Average LED efficiency surpasses that of compact fluorescent lamps (CFLs). Currently there are federal standards for general service incandescent lamps (GSIL), large diameter directional incandescent lamps, and general service CFL lamps. However, there are currently no effective minimum efficiency standards for general service LED lamps. To save significant energy in California it is necessary to develop cost effective energy efficiency standards for LED lamps. Furthermore, to encourage faster adoption of these energy saving lamps and save significant energy in California, there is a need to ensure a minimum level of quality and performance in these lamps to avoid consumer dissatisfaction that may hinder the adoption of this improved efficiency technology. The proposed standard would save 859 GWh annually by the year 2029.

II. Small Diameter Directional Lamps (SDDLs)

Small-diameter directional lamps are defined as lamps of 2.25 inches or less in diameter, and include multifaceted reflector lamps (MR16s and MR11s) and parabolic aluminized reflector lamps (PAR16s and PAR11s). Directional lamps illuminate certain specific areas in a particular direction for demanding visual tasks. There are no state or federal minimum efficiency standards for small-diameter directional lamps, although federal standards do exist for incandescent reflector lamps with diameters greater than 2.25 inches, which are outside of the scope of this rulemaking. The majority of small diameter directional lamps currently installed in California buildings utilize the more energy-consumptive incandescent, halogen, and halogen infrared (HIR) technologies. Until recently, there were only marginally improved substitutes for incandescent and halogen small diameter directional lamps. LED small diameter directional lamps have become available in the market, offering comparable performance for significantly less energy and are cost-effective replacements. By replacing the existing inefficient, energy-wasting incandescent and halogen lamp stock with energy-efficient LED lamps, the proposed standard would save California approximately 2,286 GWh annually by the year 2029.

CONSISTENCY AND COMPATIBILITY WITH EXISTING STATE REGULATIONS (Gov. Code, § 11346.5, subd. (a)(3)(D))

The proposed amendments are not inconsistent or incompatible with existing state regulations. The Energy Commission has looked into whether there are any related state regulations in this area and has determined that the only other state regulations related to lighting efficiency are also from the California Energy Commission, under Title 24, Part 6, of the California Code of Regulations (California Energy Code). The proposed amendments are intended to harmonize with these provisions in Title 24, Part 6, and are therefore neither inconsistent nor incompatible with existing state regulations.

DOCUMENTS INCORPORATED BY REFERENCE (Cal. Code Regs., tit. 1, § 20(c)(3))

The following represent documents incorporated by reference:

10 C.F.R. section 430.23(dd): Appendix BB to Subpart B of part 430

80 Fed. Reg. 39665-39667 (July 9, 2015)

ENERGY STAR Lamps V1.1 Final Specification (August 28, 2014)

IEC 62301: Household Electrical Appliances – Measurement of Standby Power (Revised 2011)

IES LM-49: Life Testing of General Lighting Incandescent Filament Lamps (Revised 2011)

IES LM-79: Electrical and Photometric Measurements of Solid-State Lighting Products (Revised 2008)

IES LM-84: Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires (Revised 2014)

IES TM-28: Projecting Long-Term Luminous Flux Maintenance of LED Lamps and Luminaires (Revised 2014)

2016 Joint Appendices, October 16 2015, adopted version.

Voluntary California Quality Light-Emitting Diode (LED) Lamp Specification, Version 2.0, December 2014, CEC-400-2015-001.

FEDERAL LAW (Gov. Code, §§ 11346.2, subd. (c) and 11346.9)

None of the proposed changes conflict with existing federal law but, instead, ensure consistency with it.

LOCAL MANDATE (Gov. Code, § 11346.5, subd. (a)(5))

The proposed amendments will not impose a mandate on state or local agencies or school districts.

ECONOMIC IMPACTS (Gov. Code, § 11346.5, subd. (a)(6))

The proposed standards are designed such that appliances sold in California will use less energy and consumers will see a positive net present value from the purchase. The standards also strive to minimize any negative effect to efficacy of the appliances. The proposed standards will reduce electricity consumption. Conservation of electricity makes it available for other purposes. These regulations will transform the market towards more cost-effective and energy-efficient appliances.

The Energy Commission submitted a standardized regulatory impact assessment (SRIA) to the California Department of Finance (DOF) in August 2015 that describes the estimated economic impact to the state of California, and the methodology used to arrive at those estimates. The SRIA also evaluated potential economic impact from alternative standards that would be either less or more stringent than those the Commission chose to propose.

The proposed standards will reduce electricity consumption by about 32,792 GWh/year and provide annual consumer savings of $4.02 billion. Estimated total job-years over the thirteen year period analyzed are projected to increase by 54,098 under the proposed standards, growing from 3,547 additional job-years in 2018 to 3,812 job-years being added in 2029. The proposed standards are estimated to increase real disposable personal income by $5.65 billion over the analyzed thirteen years, which is a beneficial outcome for the California economy.

The proposed regulations are also estimated to avoid 10.3 million tons of carbon dioxide (CO_2) from 2017-2029. This reduction in harmful criteria pollutants is estimated to avoid between $33 million and $222 million in public health losses. The value for CO_2 allowance savings was estimated to be $95 million, based upon an assumed allowance value of $12 per ton.

The DOF subsequently submitted comments to the Energy Commission regarding its SRIA. While the DOF “generally concurs with the methodology used to estimate the annual impacts under the proposed regulations,” it also made several suggestions to improve the SRIA. The DOF:

- Suggested additional discussion regarding creation or elimination of business. The Energy Commission has revised the SRIA with additional discussion.

- Suggested fiscal impacts to the state regarding state lamp costs and savings as well as standards enforcement costs. The Energy Commission has conducted these state and local fiscal impact analyses in the Form 399, and will provide this evaluation to DOF for sign off.

- Suggested the baseline be augmented with sensitivity analysis to potential scenarios of federal rulemaking activities. While SRIA analysis requires alternative standard scenarios, it does not require alternative baseline scenarios. Moreover, the nature and therefore impact of potential U.S. Department of Energy (DOE) action is very uncertain. However, the minimum time between state and federal regulatory action is well understood and means that the majority of economic impact would still occur within the timeframe of the SRIA analysis. Given the level of uncertainty of DOE action and the limited value to the SRIA analysis, the Energy Commission did not conduct sensitivity analysis regarding potential federal action.

- Suggested that additional detail be added to the SRIA discussion regarding health benefits. The Energy Commission revised the SRIA to expand the discussion of health benefit analysis, underlying assumptions, and uncertainties.

- Suggested that because LEDs, as a result of their superior qualities, may displace CFLs, this may lead to additional benefits to the state. These benefits include additional savings, lower disposal costs, and fewer hazardous materials. The baseline shipment models the Energy Commission used in analysis includes some level of LED displacement of CFL lamps. As DOF postulates, this will lead to additional benefit to California. However this displacement is not assumed to be caused by the regulation, but rather by already existing superior qualities of LED lamps, and therefore is not analyzed.

The revised SRIA is available with the other rulemaking documents on the Energy Commission website, or by request.

FISCAL IMPACTS (Gov. Code, § 11346.5, subd. (a)(6))

Costs Requiring Reimbursement. As generally applicable requirements, the proposed amendments will not impose on local agencies or school districts any costs for which Government Code sections 17500-17630 require reimbursement.

Cost or Savings in Federal Funding to the State. As generally applicable requirements, the proposed amendments will not result in any costs or savings in federal funding to the state.

Cost or Savings to State Agencies. As generally applicable requirements, the proposed amendments will result in minor costs and savings to state agencies. The costs include the incremental cost of more efficient lamps available for sale as a result of the regulations. The savings include reduced electricity costs to the state. The lamps covered under the proposed regulations are not commonly used in government buildings. However, the Energy Commission assumes that the use of LED lamps over CFL lamps will increase, and therefore made estimates of future LED lamp purchases based on 2012 CFL purchases. In each year evaluated the fiscal impact would result in net savings ranging between $132k and $241k across all agencies.

Other Nondiscretionary Costs or Savings Imposed Upon Local Agencies. As generally applicable requirements, the proposed amendments will result in minor costs and savings to local agencies. The costs include the incremental cost of more efficient lamps available for sale as a result of the regulations. The savings include reduced electricity costs to the local agency. The lamps covered under the proposed regulations are not commonly used in government buildings. However, the Energy Commission assumes that the use of LED lamps over CFL lamps will increase, and therefore made estimates of future LED lamp purchases based on 2012 CFL purchases. In each year evaluated the fiscal impact would result in net savings ranging between $529k and $966k across all local agencies. The larger magnitude in comparison to state agencies is simply from the greater number of buildings under local jurisdiction in comparison to state, and not from any specific aspect of the proposed regulation.

EFFECT ON HOUSING COSTS (Gov. Code, § 11346.5, subd. (a)(12))

There will be no significant effect on housing costs. Consumers will retain a choice among products, so any impact to the consumer would be elective. While some Title 24 regulations related to LEDs may have a small effect on housing costs, the proposed Title 20 regulations will not impact housing costs.

INITIAL DETERMINATION OF SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACTS DIRECTLY AFFECTING BUSINESS, INCLUDING THE ABILITY OF CALIFORNIA BUSINESSES TO COMPETE WITH BUSINESSES IN OTHER STATES (Gov. Code, §§ 11346.2, subd. (b)(6), 11346.3, subd. (a), 11346.5, subd. (a)(7) and 11346.5, subd. (a)(8))

The Energy Commission has determined that there will be no significant statewide adverse economic, fiscal, or environmental impact directly affecting businesses, including small businesses, as a result of the proposed regulations, including the ability of California businesses to compete with businesses in other states.

The proposed regulations have advantages and disadvantages to retailers, manufacturers, and utilities in the state. The regulations would give an advantage to manufacturers who make and distribute more efficient appliances in California and a disadvantage to those that do not. Energy utilities will see a decrease in demand for electricity and natural gas relative to a baseline forecast. Because their revenues are decoupled from sales, these utilities will see a business advantage to the proposed regulations. However, job years for utilities are expected to decrease over the analysis period, consistent with a general downward trend in job years for utilities in the baseline analysis.

The decrease in overall energy prices estimated with the macroeconomic model would create a slight competitive advantage for California businesses.

STATEMENT OF THE RESULTS OF THE STANDARDIZED REGULATORY IMPACT ASSESSMENT (SRIA) (Gov. Code, § 11346.5, subd. (a)(10)).

CREATION OR ELIMINATION OF JOBS WITHIN CALIFORNIA

Total job-years over the thirteen-year analysis period will increase by 54,098 under the proposed standards. Estimated job-years rise from 3,547 in 2018 to 3,812 by the year 2029. The average annual job growth is 4,161 over the period of analysis.

CREATION OR ELIMINATION OF BUSINESSES WITHIN CALIFORNIA

The proposed regulations will not lead to the specific creation or elimination of any specific California business. While the small-diameter directional lamp will lead to a technology change from filament incandescence to LED, staff could find no small-diameter directional lamp manufacturing in California. In fact, the only lamp manufacturing that staff could find within the state is the manufacture of some LED chips, a key component to LED lamps. These parts do not themselves comply or not comply with the regulations, but the regulations may increase demand for these chips by increasing demand for LEDs lamps. However, the proposed regulations do not create the need for a new good or service. Instead, it requires the improvement of existing goods in the market. Therefore no specific business is estimated to be directly created by the regulation, although secondary businesses may be created from expanded jobs and disposable income within the state.

Staff estimates commercial businesses will save about $227 million annually and $2.75 billion total on electricity bills between 2017-2029. Additionally, staff estimates a net reduction in lamp business expenses of $506 million over the period of analysis. The overall positive job increase and gross state product increase indicates overall business growth. Additionally, the direct impact to California businesses will also be positive: reduced electricity costs, a reduction in lamp replacement costs, and a small reduction in overall prices throughout the state’s economy.

COMPETITIVE ADVANTAGES OR DISADVANTAGES FOR BUSINESS CURRENTLY DOING BUSINESS WITHIN THE STATE

The proposed regulations have advantages and disadvantages to retailers, manufacturers, and utilities in the state. The regulations would naturally give an advantage to manufacturers of more efficient appliances in California. Energy utilities will see a decrease in demand for electricity relative to a baseline forecast. Because investor-owned energy utilities’ revenue is decoupled from energy sales, these utilities will see minimal impacts from the proposed regulations.

The distribution of compliant products is spread among many manufacturers. Assembly of LED lamps does not occur in significant volume within the state; however, there are California-based LED corporations as well as entities conducting research and development. These companies will benefit from the diminishing incandescent small-diameter directional lamp market, which will drive up LED sales.

The decrease in overall energy prices estimated with the macroeconomic model would create a slight competitive advantage for California businesses.

INCREASE OR DECREASE OF INVESTMENT IN THE STATE

Impacts to investment in the state were modeled over a thirteen-year period (2017-2029); staff anticipates future federal general service LED appliance efficiency regulations could supersede the proposed standard before 2029. If new federal general service LED standards supersede the California regulations in less than 13 years, the resulting economic impacts would be for a shorter period than the period analyzed.

Over the thirteen-year period, staff estimates that gross private domestic fixed investment increases by $128 million over the analysis period, including some years of increase and some years of decline. These levels of increased and reduced private fixed investment are very small compared to the whole California economy and represent a 0.01 percent change from the baseline in either direction. Staff finds the overall effect of the regulations to investment in California to be small compared to expected benefits of reduced energy consumption, increased jobs, increased personal income, improved air quality, and reduced greenhouse gas emissions.

INCENTIVES FOR INNOVATION IN PRODUCTS, MATERIALS OR PROCESSES

The proposed standards will cause the spread of existing, efficient technologies into products that may not currently contain them, thereby increasing the number of products that would comply with the proposed standards.

Innovations in the products proposed to be regulated can be organized into three types: innovations that would decrease energy use, innovations that are neutral to energy use, and innovations that increase energy use. The proposed standards provide incentives for technologies and innovations that can reduce the energy use of LED lamps. The proposed regulations put pressure on manufacturers of existing products to adjust from status quo designs that would have difficulty meeting the performance standards. These changes lead to increased industry investment in technology and form the core of innovation.

The proposed regulations would have a neutral effect on innovations that would increase consumption, but not in excess of the performance standard. The proposed regulations would have a negative effect on innovations that would cause energy consumption to exceed the standard. This means that manufacturers will have to either modify the product to conform to the standard or forgo the innovation.

BENEFITS OF THE REGULATIONS

The proposed and alternative regulations provide a wide range of benefits to California households and commercial businesses. The benefits that were quantified include electricity conservation and utility bill savings, reduced lamp replacement costs, jobs impact, changes in personal income, reduced air pollution, and reduced greenhouse gas emissions.

Total electricity savings are estimated to be 21 gigawatt-hours (GWh) in 2017, with an implementation jump to 2,040 GWh in 2018, which rises to 3,144 GWh by 2025. The energy savings in 2025 are one Rosenfeld, which translates to the displacement of one 500 MW power plant.

The value of residential electricity bill savings is estimated to be $44.28 million in 2018 and up to $133 million in 2025. Commercial sector electricity bill savings over the same period go from $239 million to $250 million annually.

Businesses save millions of dollars in lamp replacement costs between 2019 and 2029. This same pattern is seen in the residential sector, but over a longer period of time due to the fewer hours of annual use. The lower number of hours means that the inefficient lamps will take longer to be replaced in the residential sector and that savings from avoided replacements happens less frequently. Over the thirteen-year period, commercial and residential consumers spend $523 million less on small diameter directional lamps and LED lamp replacements because of the more efficient products.

Total job-years over the thirteen-year period of analysis will increase by 54,098 under the proposed standards. Estimated additional job-years rise from 3,547 in 2018 to 3,812 by 2029.

In addition to utility bill savings, the proposed standards will increase real disposable personal income by $392 million in 2018 and $436 million in 2029, due in part to consumer and commercial businesses saving money on utilities and spending it on other goods and services, resulting in higher employment. The cumulative increase in personal income with the proposed standards is $5.65 billion.

Air quality benefits of proposed and alternative lamp energy efficiency regulations are significant as a result of avoided electricity generation, but difficult to quantify given uncertainty in the mix of generation resources over the next 15 years, resulting in estimated ranges of savings. Staff estimates that, over the next thirteen years, the regulations will reduce PM 2.5 emissions by 492 tons to 1,148 tons, oxides of nitrogen (NO_x) emissions by 820 tons to 6,558 tons, and sulfur dioxide (SO_2) emissions by 66 tons to 115 tons. The proposed standards are estimated to avoid between $3.3 million and $22.2 million in health impacts during the first year of implementation. The 10-year cumulative estimated air quality benefit of the proposed regulations is between $33 million and $222 million.

The proposed regulations are estimated to avoid 10.3 million tons of carbon dioxide (CO2) between 2017 and 2029. The U.S. EPA provides a range of estimates for

avoided global damages due to emissions of fossil CO_2.[1] A low value of $13 per metric ton CO2 applied to the low lamp efficiency alternative yields a cumulative net present value GHG emission reduction benefit of $76.5 million over the 13-year analysis period. The total GHG benefit for proposed lamp efficiency standards, using a midpoint value for social cost of carbon at $47 per metric ton of CO2, is roughly $373 million. A second value estimated is the avoided cost of purchasing CO2 allowances for California's Cap-and-Trade Program. The value for CO2 allowance savings was estimated to be $95 million, based upon an assumed allowance value of $12 per ton.

COST IMPACTS ON REPRESENTATIVE PERSON OR BUSINESS (Gov. Code, § 11346.5, subd. (a)(9))

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

BUSINESS REPORTS (Gov. Code, §§ 11346.5, subd. (a)(11) and 11346.3, subd. (d))

The proposed changes to the labeling requirements on LED products claiming certain performance levels are not mandatory and therefore would not require additional annual reporting costs for businesses.

SMALL BUSINESS (Cal. Code Regs., tit. 1, §§ 4(a) and 4(b))

There will be no significant cost impacts on small businesses that purchase small diameter directional lamps or LEDs. Although the costs in the first year of implementation may be higher than they otherwise would for small businesses, the costs of owning and operating these lighting products will decrease as a result of lower electricity costs by using the more efficient products and reduce number of replacement lamps that will need to be purchased.

ALTERNATIVES INFORMATION (Gov. Code, § 11346.5, subd. (a)(13))

Before adopting the proposed regulations, the Energy Commission must determine that no reasonable alternative it considered, or that has otherwise been identified and brought to its attention, would be more effective in carrying out the purpose for which the amendments are proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

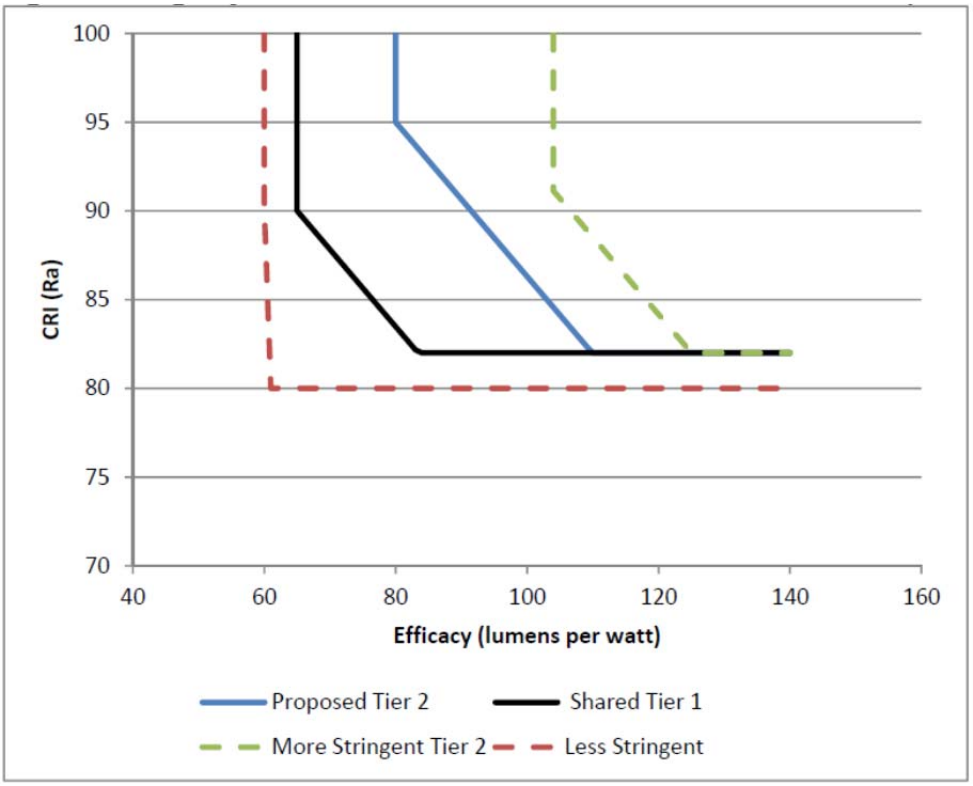
The alternatives considered, which are reflected in the Standardized Regulatory Impact Assessment prepared pursuant to section 11346.3(c) of the Government Code, are shown in Table 1 and Figure 1.

[1] For social cost of carbon, see http://www.epa.gov/climatechange/EPAactivities/economics/scc.html.

Table 1: Scenarios Analyzed for Small Diameter Directional Lamps

Halogen baseline (watts)	LED baseline (watts)	Less Stringent Scenario Compliant LED (watts)	Proposed Scenario Compliant LED (watts)	More Stringent Scenario Compliant LED (watts)
50	21	14	11	10
35	14	9	7	6
20	7	5	4	3

Figure 1: Stringency Scenarios for Medium Screw-Base Omnidirectional Lamps



Based on the alternatives assessed and discussed in the SRIA, the California Energy Commission has determined that no reasonable alternative would be more effective in carrying out the purpose for which the action is proposed while also being less burdensome to affected private persons or more cost-effective to affected private persons and equally effective in implementing the statutory policy than the proposed standards.

DESIGNATED CONTACT PERSONS (Gov. Code, § 11346.5, subd. (a)(14))

Please contact the following person, preferably by e-mail, for general information about the proceeding or to obtain any document relevant to the proceeding, including this document, the Express Terms, the Initial Statement of Reasons, the Form 399, and any other document in the rulemaking file:

Angelica Romo-Ramos
California Energy Commission
1516 Ninth Street, Mail Station 25
Sacramento, California 95814-5512
Telephone: 916-654-4147
Fax: 916-654-4304
Email: Angelica.Romo@energy.ca.gov

Please contact the following person, preferably by e-mail, for substantive questions:

Kenneth Rider
California Energy Commission
1516 Ninth Street, Mail Station 25
Sacramento, California 95814-5512
Telephone: 916-654-5006
Fax: 916-654-4304
Email: Ken.Rider@energy.ca.gov

The backup contact person for substantive questions is:

Harinder Singh
California Energy Commission
1516 Ninth Street, Mail Station 25
Sacramento, California 95814-5512
Telephone: 916-654-4091
Fax: 916-654-4304
Email: Harinder.Singh@energy.ca.gov

Mr. Rider and Mr. Singh also can assist in obtaining documents and in answering general questions.

PUBLIC ADVISER

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission activities. If you want information on how to participate in this rulemaking, please contact:

Alana Matthews, Public Adviser
California Energy Commission
1516 Ninth Street, Mail Station 12
Sacramento, California 95814-5512
Telephone: 916-654-4489
Fax: 916-654-4493
Email: pao@energy.ca.gov

NEWS MEDIA INQUIRIES

News media inquiries should be directed to Media and Public Communications Office at (916) 654-4989, or by email at mediaoffice@energy.ca.gov.

AVAILABILITY OF THE TEXT OF THE PROPOSED AMENDMENTS (EXPRESS TERMS), THE INITIAL STATEMENT OF REASONS (ISOR), AND THE INFORMATION UPON WHICH THE PROPOSAL IS BASED (RULEMAKING FILE) (Gov. Code, § 11346.5, subd. (a)(16))

The first action to take to obtain documents in this rulemaking proceeding is to visit the Energy Commission's appliance efficiency website at: http://energy.ca.gov/appliances/rulemaking.html.

The website will have all of the documents prepared by the Energy Commission, including the Express Terms of the proposed amendments (written in plain English and set forth in a format that indicates both the existing text and the proposed text), the Initial Statement of Reasons, and all documents relied upon by the Energy Commission, as well as most of the other documents in the rulemaking file.

The Express Terms and the Initial Statement of Reasons are also available at no cost from the contact person, Angelica Romo-Ramos (see above).

The Energy Commission's Docket Office has available all of the documents in the rulemaking file; for copies, please contact:

Docket Office
California Energy Commission
1516 Ninth Street, MS 4
Sacramento, California 95814-5504
916-654-5076

AVAILABILITY OF CHANGED OR MODIFIED TEXT (Gov. Code, § 11346.5, subd. (a)(18))

After considering all timely and relevant comments received, the Energy Commission may adopt the proposed regulations substantially as described in this notice. If the Commission makes modifications which are sufficiently related to the originally proposed text, it will make the modified text (with the changes clearly indicated) available to the public for at least 15 days before it adopts the regulations as revised. Per section 44, title 1, of the California Code of Regulations, notice of any modified text will be submitted to (1) anyone who submits oral or written comments at the public hearing, (2) anyone who submits written comments to the Energy Commission's docket, or (3) anyone who specifically requests notification of such modifications.

FINAL STATEMENT OF REASONS (Gov. Code, § 11346.5, subd. (a)(19))

The Energy Commission will prepare a Final Statement of Reasons on the amendments, responding to all relevant comments made during the proceeding. The Final Statement of Reasons will be available from the contact person named above, from the Docket Office, and will be posted on the Energy Commission's website.

INTERNET ACCESS (Gov. Code, §§ 11346.4, subd. (a)(6) and 11346.5, subd. (a)(20))

The Energy Commission maintains a website in order to facilitate public access to documents prepared and considered as part of this rulemaking proceeding. Documents prepared by the Energy Commission for this rulemaking, including this Notice of Proposed Action, the Express Terms, the Initial Statement of Reasons, and the Economic and Fiscal Impact Statements, as well as many other documents in the rulemaking file have been posted at: http://www.energy.ca.gov/appliances/2015-AAER-06/rulemaking/.