DOE is providing this redline document in accordance with its obligations under Executive Order 12866 to identify the substantive changes between the draft submitted to OIRA for review and the action subsequently announced.

6450-01-P

DEPARTMENT OF ENERGY

10 CFR Part 430

[EERE-2021-BT-STD-0005]

RIN 1904-AF09

Energy Conservation Program: Energy Conservation Standards for General Service Lamps

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

ACTION: Final rule.

SUMMARY: In this final rule, the U.S. Department of Energy ("DOE") is codifying in the Code of Federal Regulations the 45 lumens per watt ("lm/W") backstop requirement for general service lamps ("GSLs") that Congress prescribed in the Energy Policy and Conservation Act, as amended. DOE has determined this backstop requirement applies because DOE failed to complete a rulemaking regarding GSLs in accordance with certain statutory criteria. This final rule represents a departure from DOE's previous determination published in 2019 that the backstop requirement was not triggered.

DATES: The effective date of this rule is **[INSERT DATE ~~60~~75 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: The docket for this rulemaking, which includes *Federal Register* notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *www.regulations.gov*. All documents in the docket are listed in the *www.regulations.gov* index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at *www.regulations.gov/docket/EERE-2021-BT-STD-0005*. The docket web page contains instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: *ApplianceStandardsQuestions@ee.doe.gov*.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

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I. Introduction

The following section briefly discusses the statutory authority underlying this final rule, as well as some of the relevant historical background related to the statutory backstop requirement.

A. Authority

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291-6317) Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles. (42 U.S.C. 6291-6309) These products include GSLs, the subject of this document. (42 U.S.C. 6295(i)(6))

EPCA directs DOE to conduct two rulemaking cycles to evaluate energy conservation standards for GSLs.[3] (42 U.S.C. 6295(i)(6)(A)-(B)) For the first rulemaking cycle, EPCA directs DOE to initiate a rulemaking process prior to January 1, 2014, to determine whether: (1) to amend energy conservation standards for GSLs and (2) the exemptions for certain incandescent lamps should be maintained or discontinued. (42

[1] All references to EPCA in this document refer to the statute as amended through the Infrastructure Investment and Jobs Act, Pub. L. 117-58 (Nov. 15, 2021).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.
[3] GSLs are defined in EPCA to include GSILs, compact fluorescent lamps ("CFLs"), general service light-emitting diode ("LED") lamps and organic light emitting diode ("OLED") lamps, and any other lamps that the Secretary of Energy (Secretary) determines are used to satisfy lighting applications traditionally served by general service incandescent lamps. (42 U.S.C. 6291(30)(BB)(i)) The term "general service lamp" does not include any of the 22 lighting applications or bulb shapes explicitly not included in the definition of "general service incandescent lamp," or any general service fluorescent lamp or incandescent reflector lamp. (42 U.S.C. 6291(30)(BB)(ii))

U.S.C. 6295(i)(6)(A)(i)) The rulemaking is not limited to incandescent lamp technologies and must include a consideration of a minimum standard of 45 lm/W for GSLs. (42 U.S.C. 6295(i)(6)(A)(ii)) EPCA provides that if the Secretary determines that the standards in effect for general service incandescent lamps ("GSIL") should be amended, a final rule must be published by January 1, 2017, with a compliance date at least 3 years after the date on which the final rule is published. (42 U.S.C. 6295(i)(6)(A)(iii)) The Secretary must also consider phased-in effective dates after considering certain manufacturer and retailer impacts. (42 U.S.C. 6295(i)(6)(A)(iv)) If DOE fails to complete a rulemaking in accordance with 42 U.S.C. 6295(i)(6)(A)(i)-(iv), or if a final rule from the first rulemaking cycle does not produce savings greater than or equal to the savings from a minimum efficacy standard of 45 lm/W, the statute provides a "backstop" under which DOE must prohibit sales of GSLs that do not meet a minimum 45 lm/W standard. (42 U.S.C. 6295(i)(6)(A)(v))

EPCA further directs DOE to initiate a second rulemaking cycle by January 1, 2020, to determine whether standards in effect for GSILs (which are a subset of GSLs)) should be amended with more stringent maximum wattage requirements than EPCA specifies, and whether the exemptions for certain incandescent lamps should be maintained or discontinued. (42 U.S.C. 6295(i)(6)(B)(i)) As in the first rulemaking cycle, the scope of the second rulemaking is not limited to incandescent lamp technologies. (42 U.S.C. 6295(i)(6)(B)(ii))

B. March 2016 Notice of Proposed Rulemaking and October 2016 Notice of Proposed Definition and Data Availability

Pursuant to its statutory authority, DOE published a notice of proposed rulemaking ("NOPR") on March 17, 2016, that addressed the first question that Congress directed it to consider—whether to amend energy conservation standards for GSLs ("March 2016 NOPR"). 81 FR 14528, 14629-14630 (Mar. 17, 2016). In the March 2016 NOPR, DOE stated that it would be unable to undertake any analysis regarding GSILs and other incandescent lamps because of a then-applicable congressional restriction ("the Appropriations Rider"). *See* 81 FR 14528, 14540-14541. The Appropriations Rider prohibited expenditure of funds appropriated by that law to implement or enforce: (1) 10 Code of Federal Regulations ("CFR") 430.32(x), which includes maximum wattage and minimum rated lifetime requirements for GSILs; and (2) standards set forth in section 325(i)(1)(B) of EPCA (42 U.S.C. 6295(i)(1)(B)), which sets minimum lamp efficiency ratings for incandescent reflector lamps ("IRLs"). Under the Appropriations Rider, DOE was restricted from undertaking the analysis required to address the first question presented by Congress, but was not so limited in addressing the second question—that is, DOE was not prevented from determining whether the exemptions for certain incandescent lamps should be maintained or discontinued. To address that second question, DOE published a Notice of Proposed Definition and Data Availability ("NOPDDA"), which proposed to amend the definitions of GSIL, GSL, and related terms ("October 2016 NOPDDA"). 81 FR 71794, 71815 (Oct. 18, 2016). Notably, the Appropriations Rider, which was originally adopted in 2011 and readopted and extended

continuously in multiple subsequent legislative actions, expired on May 5, 2017, when the Consolidated Appropriations Act, 2017 was enacted.[4]

C. January 2017 Final Rules

On January 19, 2017, DOE published two final rules concerning the definitions of GSL, GSIL, and related terms ("January 2017 Definition Final Rules"). 82 FR 7276; 82 FR 7322. The January 2017 Definition Final Rules amended the definitions of GSIL and GSL by bringing certain categories of lamps that had been excluded by statute from the definition of GSIL within the definitions of GSIL and GSL. DOE determined to use two final rules in 2017 to amend the definitions of GSIL and GSLs in order to address the majority of the definition changes in one final rule and the exemption for IRLs in the second final rule. These two rules were issued simultaneously, with the first rule eschewing a determination regarding the existing exemption for IRLs in the definition of GSL and the second rulemaking discontinuing that exemption from the GSL definition. 82 FR 7276, 7312; 82 FR 7322, 7323. As in the October 2016 NOPDDA, DOE stated that the January 2017 Definition Final Rules related only to the second question that Congress directed DOE to consider, regarding whether to maintain or discontinue "exemptions" for certain incandescent lamps. 82 FR 7276, 7277; 82 FR 7322, 7324 (*See also* 42 U.S.C. 6295(i)(6)(A)(i)(II)). That is, neither of the two final rules issued on January 19, 2017, established energy conservation standards applicable to GSLs. DOE explained that the Appropriations Rider prevented it from establishing, or even analyzing, standards for GSILs. 82 FR 7276, 7278. Instead, DOE explained that it would either

[4] *See* Consolidated Appropriations Act of 2017 (Pub. L. 115-31, div. D, tit. III); see also Consolidated Appropriations Act, 2018 (Pub. L. 115-141).

impose standards for GSLs in the future pursuant to its authority to develop GSL standards, or apply the backstop standard prohibiting the sale of lamps not meeting a 45 lm/W efficacy standard. 82 FR 7276, 7277-7278. The two final rules were to become effective as of January 1, 2020.

D. September 2019 Withdrawal Rule and December 2019 Final Determination

On March 17, 2017, the National Electrical Manufacturer's Association ("NEMA") filed a petition for review of the January 2017 Definition Final Rules in the U.S. Court of Appeals for the Fourth Circuit. *National Electrical Manufacturers Association v. United States Department of Energy*, No. 17-1341. NEMA claimed that DOE "amend[ed] the statutory definition of `general service lamp' to include lamps that Congress expressly stated were `not include[d]' in the definition" and adopted an "unreasonable and unlawful interpretation of the statutory definition." Pet. 2. Prior to merits briefing, the parties reached a settlement agreement under which DOE agreed, in part, to issue a notice of data availability requesting data for GSILs and other incandescent lamps to assist DOE in determining whether standards for GSILs should be amended (the first question of the rulemaking required by 42 U.S.C. 6295(i)(6)(A)(i)).

With the removal of the Appropriations Rider in the Consolidated Appropriations Act, 2017, DOE was no longer restricted from undertaking the analysis and decision-making required to address the first question presented by Congress, *i.e.*, whether to amend energy conservation standards for general service lamps, including GSILs. Thus, on August 15, 2017, DOE published a notice of data availability and request for

information ("NODA") seeking data for GSILs and other incandescent lamps ("August 2017 NODA"). 82 FR 38613.

The purpose of the August 2017 NODA was to assist DOE in determining whether standards for GSILs should be amended. (42 U.S.C. 6295(i)(6)(A)(i)(I)) Comments submitted in response to the August 2017 NODA also led DOE to re-consider the decisions it had already made with respect to the second question presented to DOE—whether the exemptions for certain incandescent lamps should be maintained or discontinued. 84 FR 3120, 3122 (*See also* 42 U.S.C. 6295(i)(6)(A)(i)(II)) As a result of the comments received in response to the August 2017 NODA, DOE also re-assessed the legal interpretations underlying certain decisions made in the January 2017 Definition Final Rules. *Id*.

On February 11, 2019, DOE published a NOPR proposing to withdraw the revised definitions of GSL, GSIL, and the new and revised definitions of related terms that were to go into effect on January 1, 2020 ("February 2019 Definition NOPR"). 84 FR 3120. In a final rule published September 5, 2019, DOE finalized the withdrawal of the definitions in the January 2017 Definition Final Rules and maintained the existing regulatory definitions of GSL and GSIL, which are the same as the statutory definitions of those terms ("September 2019 Withdrawal Rule"). 84 FR 46661. The September 2019 Withdrawal Rule revisited the same primary question addressed in the January 2017 Definition Final Rules, namely, the statutory requirement for DOE to determine whether "the exemptions for certain incandescent lamps should be maintained or discontinued." 42 U.S.C. 6295(i)(6)(A)(i)(II) (*See also* 84 FR 46661, 46667). In the rule, DOE also

addressed its interpretation of the statutory backstop at 42 U.S.C. 6295(i)(6)(A)(v) and concluded the backstop had not been triggered. 84 FR 46661, 46663-46664. DOE reasoned that 42 U.S.C. 6295(i)(6)(A)(iii) "does not establish an absolute obligation on the Secretary to publish a rule by a date certain." 84 FR 46661, 46663. "Rather, the obligation to issue a final rule prescribing standards by a date certain applies if, and only if, the Secretary makes a determination that standards in effect for GSILs need to be amended." *Id.* DOE further stated that, since it had not yet made the predicate determination on whether to amend standards for GSILs, the obligation to issue a final rule by a date certain did not yet exist and, as a result, the condition precedent to the potential imposition of the backstop requirement did not yet exist and no backstop requirement had yet been triggered. *Id.* at 84 FR 46664.

Similar to the January 2017 Definition Final Rules, the September 2019 Withdrawal Rule clarified that DOE was not determining whether standards for GSLs, including GSILs, should be amended. DOE stated it would make that determination in a separate rulemaking. *Id.* at 84 FR 46662. DOE initiated that separate rulemaking by publishing a notice of proposed determination ("NOPD") on September 5, 2019, regarding whether standards for GSILs should be amended ("September 2019 NOPD"). 84 FR 46830. In conducting its analysis for that notice, DOE used the data and comments received in response to the August 2017 NODA and relevant data and comments received in response to the February 2019 Definition NOPR, and DOE tentatively determined that the current standards for GSILS do not need to be amended because more stringent standards are not economically justified. *Id.* at 84 FR 46831. DOE finalized that tentative determination on December 27, 2019 ("December 2019

Final Determination"). 84 FR 71626. DOE also concluded in the December 2019 Final Determination that, because it had made the predicate determination not to amend standards for GSILs, there was no obligation to issue a final rule by January 1, 2017, and, as a result, the backstop requirement had not been triggered. *Id.* at 84 FR 71636.

Two petitions for review were filed in the U.S. Court of Appeals for the Second Circuit challenging the September 2019 Withdrawal Rule. The first petition was filed by 15 States,[5] New York City, and the District of Columbia. See *New York v. U.S. Department of Energy*, No. 19-3652 (2d Cir., filed Nov. 4, 2019). The second petition was filed by six organizations[6] that included environmental, consumer, and public housing tenant groups. See *Natural Resources Defense Council v. U.S. Department of Energy*, No. 19-3658 (2d Cir., filed Nov. 4, 2019). The petitions were subsequently consolidated. Merits briefing has been concluded, but the case has not been argued or submitted to the Circuit panel for decision. The case has been in abeyance since March 2021, pending further rulemaking by DOE.

Additionally, in two separate petitions also filed in the Second Circuit, groups of petitioners that were essentially identical to those that filed the lawsuit challenging the September 2019 Withdrawal Rule challenged the December 2019 Final Determination. See *Natural Resources Defense Council v. U.S. Department of Energy*, No. 20-699 (2d

[5] The petitioning States are the States of New York, California, Colorado, Connecticut, Illinois, Maryland, Maine, Michigan, Minnesota, New Jersey, Nevada, Oregon, Vermont, and Washington and the Commonwealth of Massachusetts.

[6] The petitioning organizations are the Natural Resource Defense Council, Sierra Club, Consumer Federation of America, Massachusetts Union of Public Housing Tenants, Environment America, and U.S. Public Interest Research Group.

Cir., filed Feb, 25, 2020); *New York v. U.S. Department of Energy*, No. 20-743 (2d Cir., filed Feb. 28, 2020). On April 2, 2020, those cases were put into abeyance pending the outcome of the September 2019 Withdrawal Rule petitions.

E. Subsequent Review

On January 20, 2021, President Biden issued Executive Order ("E.O.") 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." 86 FR 7037 (Jan. 25, 2021). Section 1 of that Order lists a number of policies related to the protection of public health and the environment, including reducing greenhouse gas emissions and bolstering the Nation's resilience to climate change. *Id.* at 7041. Section 2 of the Order instructs all agencies to review "existing regulations, orders, guidance documents, policies, and any other similar agency actions promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are or may be inconsistent with, or present obstacles to, [these policies]." *Id.* Agencies are then directed, as appropriate and consistent with applicable law, to consider suspending, revising, or rescinding these agency actions and to immediately commence work to confront the climate crisis. *Id.*

In accordance with E.O. 13990, on May 25, 2021, DOE published a request for information ("RFI") initiating a re-evaluation of its prior determination that the Secretary was not required to implement the statutory backstop requirement for GSLs ("May 2021 RFI"). 86 FR 28001. DOE solicited information regarding the availability of lamps that would satisfy a minimum efficacy standard of 45 lm/W, as well other information that may be relevant to a possible implementation of the statutory backstop. *Id.* On

December 13, 2021, DOE published a NOPR proposing to codify in the CFR the 45 lm/W backstop requirement for GSLs and welcomed comments on the proposal ("December 2021 NOPR"). 86 FR 70755.

DOE received comments in response to the December 2021 NOPR from the interested parties listed in Table I.1.

Table I.1 Written Comments Received in Response to the December 2021 NOPR

Commenter(s)	Abbreviation	Commenter Type
American Lighting Association	ALA	Trade Association
Amy Glass	Glass	Individual commenter
Anonymous	Anonymous	Individual commenter
Anonymous	Anonymous	Individual commenter
Anonymous	Anonymous	Individual commenter
Anonymous	Anonymous	Individual commenter
Anonymous	Anonymous	Individual commenter
Appliance Standards Awareness Project, American Council for an Energy-Efficient Economy, Alliance of Nurses for Healthy Environments, Alliance to Save Energy, The California Efficiency + Demand Management Council, Center for Biological Diversity, Climate Smart Missoula, Colorado Energy Office, Consumer Federation of America, E4TheFuture, Energy Efficiency Alliance of New Jersey, Campaign for 100% Renewable Energy, Environment America, Evergreen Action, Green Energy Consumers Alliance, Interfaith Power & Light, Maine Department of Environmental Protection, Montana Environmental Information Center, National Consumer Law Center, Northeast Energy Efficiency Partnership, Nevada Governor's Office of Energy, Nevada Legislature, New Buildings Institute, Northwest Energy Coalition, Carbon-Free Buildings RMI, Southwest Energy Efficiency Project ("SWEEP"), Urban Green Council, Utah Clean Energy, Vermont Energy Investment Corporation, Washington Department of Commerce	ASAP et al.	Energy Efficiency Organization; State Official/Agency
Attorneys General of New York, California, Colorado, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, Oregon, Vermont, Washington, The Commonwealth of Massachusetts, The District of Columbia, and The City of New York	Attorneys General	State Official/Agency
California Energy Commission	CEC	State Official/Agency
Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison	CA IOUs	Utilities

Center for Energy and Environment Competitive Enterprise Institute, Regulatory Action Center FreedomWorks Foundation, JunkScience.com, Project 21, Center for Energy & Environmental Policy Caesar Rodney Institute, Rio Grande Foundation, The Cornwall Alliance for the Stewardship of Creation, Americans for Limited Government, Institute for Energy Research, National Center for Public Policy Research, Roughrider Policy Center, 60 Plus Association, Independent Women's Forum, Committee for a Constructive Tomorrow, Independent Women's Voice	Free Market Organizations	Consumer Advocacy Organizations
Consumer Federation of America, The National Consumer Law Center	CFA and NCLC	Consumer Advocacy Organizations
David Maier	Maier	Individual commenter
David Walton	Walton	Individual commenter
Edison Electric Institute	EEI	Utilities
GE Lighting, a Savant Company	GE Lighting	Manufacturer
Institute for Policy Integrity ("IPI") at NYU School of Law, Montana Environmental Information Center, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists	IPI et al.	Energy Efficiency Organizations
Jean Sherman	Sherman	Individual commenter
Lutron Electronics Co., Inc	Lutron	Manufacturer
Minimise USA	Minimise USA	Energy Efficiency Services Company
National Association of State Energy Officials	NASEO	State Official/Agency
National Electrical Manufacturers Association	NEMA	Trade Association
National Retail Federation, Retail Industry Leaders Association	NRF and RILA	Trade Association
New York State Energy Research and Development Authority	NYSERDA	State Official/Agency
Northwest Energy Efficiency Alliance	NEEA	Energy Efficiency Organization
Northwest Power and Conservation Council	NPC Council	State Organization
Project 21 - National Research for Public Policy Research	Project 21	Research Organization
Sierra Club, National Resources Defense Council, Earthjustice	SC, NRDC, and EJ	Energy Efficiency Organizations

VALU Home Centers	VALU Home Centers	Retailer
William Hough	Hough	Individual commenter

The comments received on the December 2021 NOPR are summarized and addressed in the following section. A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[7]

II. Final Rule

In this final rule, DOE has determined that the 45 lm/W backstop requirement for GSLs at 42 U.S.C. 6295(i)(6)(A)(v) has been triggered because of DOE's failure to complete the first phase of rulemaking in accordance with 42 U.S.C. 6295(i)(6)(A)(i)-(iv), and because the final rules that DOE published did not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W. As a result of this failure to complete certain rulemakings, EPCA dictates that DOE prohibit sales of GSLs that do not meet a minimum 45 lm/W standard. (42 U.S.C. 6295(i)(6)(A)(v))

A. Statutory Backstop Requirement

As described in section I.A of this document, EPCA specifies several criteria that DOE must adhere to in its first rulemaking cycle for GSLs. (*See* 42 U.S.C. 6295(i)(6)(A)(i)-(iv)) If DOE fails to complete a rulemaking in accordance with clauses

[7] The parenthetical reference provides a reference for information located in the docket of DOE's re-evaluation of the statutory backstop for GSLs. (Docket No. EERE-2021-BT-STD-0005, which is maintained at *www.regulations.gov*). The references are arranged as follows: (commenter name, comment docket ID number at page of that document).

(i) through (iv) of 42 U.S.C. 6295(i)(6)(A) or if the final rule does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W, clause (v) requires DOE to prohibit sales of lamps with an efficacy below 45 lm/W "effective beginning January 1, 2020."

1. Prior Consideration of the Backstop Requirement

a. Prior to the September 2019 Withdrawal Rule

In the March 2016 NOPR proposing energy conservation standards for GSLs, DOE explicitly addressed the backstop provision at 42 U.S.C. 6295(i)(6)(A)(v). 81 FR 14528 (March 17, 2016). Specifically, DOE stated that due to the Appropriations Rider, DOE was unable to perform the analysis required in clause (i) of 42 U.S.C. 6295(i)(6)(A) and as a result, the backstop in 42 U.S.C. 6295(i)(6)(A)(v) is automatically triggered. 81 FR 14528, 14540. DOE reiterated that it was not considering GSILs, including exclusions or exemptions, in the rulemaking due to the Appropriations Rider. 81 FR 14528, 14582. DOE further explained that under 42 U.S.C. 6295(i)(6)(A)(v), if it failed to (1) complete a rulemaking in accordance with clauses (i) through (iv), which included determining whether the exemptions for certain incandescent lamps should be maintained or discontinued, or (2) publish a final rule that would meet or exceed the energy savings associated with the statutory 45 lm/W requirement, then the backstop would be triggered beginning January 1, 2020. *Id.* Thus, in the March 2016 NOPR, DOE assumed that the backstop would be triggered beginning January 1, 2020. *Id.* Further, DOE stated that lamps that meet the proposed GSL definition would be subject to the 45 lm/W efficacy level and estimated an associated energy savings of approximately 3 quadrillion Btu

("quads") for lamps sold in 2020-2049 and a carbon reduction of approximately 200 million metric tons by 2030. 81 FR 14528, 14534.

In the January 2017 Definition Final Rules, DOE did not interpret paragraph (6)(A) as requiring DOE to establish amended standards for GSLs. 82 FR 7276, 7283. DOE stated that clause (v) expressly contemplates the possibility that DOE would not finalize a rule that develops alternative standards for GSLs. *Id.* In these rules, DOE did not make any determination regarding standards for GSLs. 82 FR 7278, 7316. DOE acknowledged that the backstop would go into effect if DOE failed to complete the rulemaking as prescribed by EPCA by January 1, 2017, or the final rule did not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W. *Id.* While not explicitly stating its assumption that the backstop requirement would be triggered, DOE set a January 1, 2020, effective date for the definitions rule, which coincided with the effective date of the statutory backstop requirement. DOE also noted its commitment to working with manufacturers to ensure a successful transition if the backstop standard went into effect. To that end, on January 18, 2017, DOE issued a "Statement Regarding Enforcement of 45 LPW General Service Lamp Standard" ("January 2017 Enforcement Statement") stating that EPCA requires that, effective beginning January 1, 2020, DOE shall prohibit the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W.[8] In the enforcement statement, DOE advised

[8] Available at *www.energy.gov/sites/default/files/2017/01/f34/Statement%20on%20Enforcement%20of%20GSL%20Standard%20-%201.18.2017.pdf*.

that it could issue a policy that provides additional time allowing for the necessary flexibility for manufacturers to comply with the 45 lm/W standard. *Id.*

b. September 2019 Withdrawal Rule and the December 2019 Final Determination

In the September 2019 Withdrawal Rule, DOE concluded that the backstop requirement had not been triggered. 84 FR 46661, 46664. DOE stated that it initiated the first GSL standards rulemaking process by publishing a notice of availability of a framework document in December 2013, satisfying the requirements in 42 U.S.C. 6295(i)(6)(A)(i) to initiate a rulemaking by January 1, 2014. 84 46661, 46663. DOE further stated its belief that Congress intended for the Secretary to make a predicate determination about GSILs, and that the obligation to issue a final rule prescribing standards by a date certain applies if, and only if, the Secretary makes a determination that standards in effect for GSILs need to be amended. 84 FR 46661, 46663-46664. Since DOE had not yet made the predicate determination on whether to amend standards for GSILs, DOE found the obligation to issue a final rule by a date certain did not yet exist and, as a result, the condition precedent to the potential imposition of the backstop requirement did not yet exist and no backstop requirement had yet been triggered. *Id.*

In the December 2019 Final Determination, DOE reiterated its interpretation that the statutory deadline for the Secretary to complete a rulemaking for GSILs in 42 U.S.C. 6295(i)(6)(A)(iii) does not establish an absolute obligation on the Secretary to publish a rule by a date certain. 84 FR 71626, 71635. Instead, DOE stated that this deadline applies only if the Secretary makes a determination that standards for GSILs should be amended. *Id.* at 84 FR 71636. Otherwise, DOE again stated, it could result in a situation

where a prohibition is automatically triggered for a category of lamps for which no new standards, much less prohibition, are necessary. *Id.* In the December 2019 Final Determination, since DOE made what it characterized as the predicate determination that standards for GSILs do not need to be amended, DOE found that the obligation to issue a final rule by a date certain did not exist and, as a result, the condition precedent to the potential imposition of the backstop requirement did not exist and no backstop requirement had been triggered. *Id.*

2. Proposed Determination Regarding Operation of the Backstop Requirement

As presented in the December 2021 NOPR, Congress identified two circumstances that would trigger application of the backstop requirement: (1) If DOE "fails to complete a rulemaking in accordance with clauses (i) through (iv)" of section 6295(i)(6)(A); or (2) "if the final rule" promulgated under this rulemaking "does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lumens per watt." 86 FR 70755, 70760; 42 U.S.C. 6295(i)(6)(A)(v). In the December 2021 NOPR, DOE tentatively determined that the backstop requirement has been triggered because both of the foregoing circumstances have occurred. *Id.*

DOE explained in the December 2021 NOPR that it failed to complete the first cycle of rulemaking in accordance with clauses (i) through (iv) of 42 U.S.C. 6295(i)(6)(A) for at least two reasons. *Id.* The first reason is that DOE failed to complete this first GSL rulemaking in a timely manner. The structure of section 6295(i)(6)(A) reflects an expectation by Congress that by January 1, 2017, the outcome

of DOE's GSL rulemaking would have been known, and, if either amended standards or the backstop were to be applicable, those would be in place no later than January 1, 2020. *Id.*

DOE also stated in the December 2021 NOPR, that the position it advanced in the September 2019 Withdrawal Rule and the December 2019 Final Determination—namely, that the backstop provision is premised on the Secretary first making a determination that standards for GSILs should be amended and that the statute does not impose a deadline for the GSIL determination—fails to give meaning to all of the surrounding statutory text, as DOE is obligated to do. *See* 84 FR 46661, 46663-46664; 84 FR 71626, 71635; ***see also*** 42 U.S.C. 6295(i)(6)(A)(iii). DOE stated that in looking at the surrounding context of sections 6295(i)(6)(A) and 6295(i)(6)(B), it is clear that Congress intended DOE's first GSL rulemaking to be completed by January 1, 2017—primarily due to Congress providing interested parties a gap of time between the conclusion of this rulemaking and the deadline for compliance, thus giving interested parties time to adjust to any changes. *Id.*

DOE explained in the December 2021 NOPR that in section 6295(i)(6)(A), Congress explicitly contemplated two possible outcomes: (1) a final rule amending standards for GSLs, or (2) imposition of the backstop of 45 lm/W. Under the first scenario, DOE would have been obligated to publish a final rule by January 1, 2017, with an effective date no earlier than three years after publication—thereby giving manufacturers a three-year lead time to prepare for the changed standards. *See* 42 U.S.C. 6295(i)(6)(A)(iii). Under the second scenario, the backstop would come into effect, but

not until January 1, 2020—giving manufacturers the same three-year lead time to adjust to the forthcoming efficacy standard of 45 lm/W. *See Id.* at 42 U.S.C. 6295(i)(6)(A)(v). 86 FR 70755, 70760-61.

DOE further stated in the December 2021 NOPR that even if the statute contemplated a third possible scenario—a determination by DOE that standards for GSLs need not be amended under which the backstop was not triggered—it is clear from section 6295(i)(6)(A) that Congress expected this determination would be made no later than January 1, 2017. 86 FR 70755, 70761.

DOE also made the case in the December 2021 NOPR that this allowance for lead time is reflected in the preemption exception provision in section 6295(i)(6)(A)(vi), which gives California and Nevada the authority to adopt, with an effective date beginning January 1, 2018 or after, either:

(1) A final rule adopted by the Secretary in accordance with 42 U.S.C. 6295(i)(6)(A)(i)-(iv);

(2) If a final rule has not been adopted in accordance with 42 U.S.C. 6295(i)(6)(A)(i)-(iv), the backstop requirement under 42 U.S.C. 6295(i)(6)(A)(v); or

(3) In the case of California, if a final rule has not been adopted in accordance with 42 U.S.C. 6295(i)(6)(A)(i)-(iv), any California regulations related to "these covered products" adopted pursuant to state statute in effect as of the date of enactment of the Energy Independence and Security Act of 2007.

This provision allows California and Nevada to implement either a final DOE rule amending standards for GSLs or the 45 lm/W backstop standard on January 1, 2018, two years earlier than the rest of the country. This provision thus assumes that California and Nevada would have to have known whether DOE had completed a final rule amending standards for GSLs by January 1, 2017, so that manufacturers subject to standards in those states would have a practicable one-year lead time to comply. *Id.*

Lastly, DOE stated in the December 2021 NOPR that Congress' mandate in 42 U.S.C. 6295(i)(6)(B) that DOE initiate the second cycle of rulemaking by January 1, 2020, coincides with a schedule in which standards are adopted (or the backstop is implicated by January 1, 2017, with a minimum three-year lead time. *Id.*

DOE also tentatively determined in the December 2021 NOPR that in addition to failing to complete the first cycle of rulemaking timely, the second reason why DOE's rulemaking was not "in accordance with clauses (i) through (iv)" of section 6295(i)(6)(A) is because DOE's rulemaking did not "consider[ ] a minimum standard of 45 lumens per watt for general service lamps" as required under 42 U.S.C. 6295(i)(6)(A)(ii)(II). 86 FR 70761. DOE considered GSILs only in the scope of the December 2019 Final Determination analysis, with lamps having a maximum efficacy less than 45 lumens per watt. *Id.* While DOE did not analyze lamps other than GSILs in the scope of the December 2019 Final Determination analysis, DOE did look at the impact on GSIL shipments as a result of consumers choosing to purchase other lamps, such as compact fluorescent lamps ("CFLs") and light-emitting diode ("LED") lamps, if standards for

GSILs were amended as discussed in section VI.A of the December 2019 Final Determination. Therefore, DOE preliminarily concluded in the December 2021 NOPR that it could not have considered a 45 lumens per watt standard level as part of that rulemaking determination because of the GSIL limited scope. *Id.*

DOE explained in the December 2021 NOPR that although DOE's failure to "complete a rulemaking in accordance with clauses (i) through (iv)" is itself sufficient to trigger application of the backstop, DOE also did not determine whether its final rule (or rules) in this first cycle of rulemaking produced savings that are "greater than or equal to the savings from a minimum efficacy standard of 45 lm/W[.]" 42 U.S.C. 6295(i)(6)(A)(v). That is an independent basis for application of the backstop under section 6295(i)(6)(v). Congress provided that the backstop would be triggered "if the final rule does not produce energy savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W." *Id.* Since DOE did not compare whether any energy savings resulting from either the September 2019 Withdrawal Rule or the December 2019 Final Determination would produce energy savings that are greater than or equal to a minimum efficacy standard of 45 lm/W, DOE preliminary determined in the December 2021 NOPR that the backstop requirement in section 6295(1)(6)(A)(v) was triggered.[9] *Id.*

[9]Although DOE did perform various energy savings analyses in the December 2019 Final Determination, it was not the comparison to a 45 lumens per watt efficacy standard required by 42 U.S.C. 6295(i)(6)(A)(v). *See*, *e.g.*, 84 FR 71632 ("The no-new-standards case represents a projection of energy consumption that reflects how the market for a product would likely evolve in the absence of amended energy conservation standards. In this case, the standards case represents energy savings not from the technology outlined in a [trial standard level], but from product substitution as consumers are priced out of the market for GSILs.").

For the foregoing reasons, DOE determines that the backstop requirement in 42 U.S.C. 6295(i)(6)(A)(v) was triggered and should have been effective as of January 1, 2020 because DOE failed to complete a GSL rulemaking in accordance with certain statutory criteria.

3. Discussion of Comments and Final Determination Regarding Operation of the Backstop

In response to the December 2021 NOPR, NEMA encouraged DOE to review its past comments regarding implementation of the backstop. (NEMA, No. 51 at p. 2) DOE notes that in the September 2019 Withdrawal Rule proceeding, NEMA commented that the backstop standard had not be triggered because the Secretary had not determined whether to amend GSIL standards under 42 U.S.C. 6295(i)(6)(A)(iii). In that proceeding, NEMA also commented that the backstop standard is not self-executing and requires the Secretary to issue a prohibitory order. NEMA asserted that the Secretary had not issued such an order because the Secretary had not failed to complete a rulemaking in accordance with clauses (i) through (iv) or that such final rule does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W because the obligation to issue such a rule did not yet exist. 84 FR 46661, 46663.

Further, in response to the December 2021 NOPR, the Free Market Organizations stated opposition to DOE's proposed implementation of the 45 lm/W backstop because it bypasses consumer protections in EPCA and adversely impacts product cost, choice, and

features. (Free Market Organizations, No. 65 at p. 2) They asserted that if Congress wanted the 45 lm/W backstop to be applicable to all GSILs as of January 1, 2020, it could have stated so clearly and succinctly, as EPCA is replete with such statutorily-imposed minimum efficiency standards for home appliances that automatically take effect on the date specified. The Free Market Organizations asserted that in the case of GSLs, the statute delineates agency actions that are preconditions to any triggering of the 45 lm/W backstop requirement, namely that DOE determine that existing standards need to be amended and then either fails to amend the standards or sets a standard weaker than would have been achieved by the backstop. The Free Market Organizations asserted that DOE never made the threshold determination and thus the 45 lm/W backstop does not apply. (Free Market Organizations, No. 65 at p. 3)

DOE received comments from the Attorneys General, NPC Council, ASAP et al., and SC, NRDC, and EJ in support of DOE's tentative conclusion in the December 2021 NOPR that the backstop had been triggered. (Attorneys General, No. 60 at p. 2; NPC Council, No. 46 at p. 2; ASAP et al., No. 63 at p. 2; SC, NRDC, and EJ, No. 58 at pp. 1-2) In particular, SC, NRDC, and EJ commented that the defects pointed out by DOE in the December 2021 NOPR are not the only bases for concluding that DOE has failed to complete a rulemaking in accordance with clauses (i) through (iv) of 42 U.S.C. 6295(i)(6)(A). Rather, SC, NRDC, and EJ commented that DOE has failed to meet not just two, but all four of the rulemaking criteria prescribed in 42 U.S.C. 6295(i)(6)(A). Moreover, these commenters asserted that DOE triggered the backstop more than eight years ago when it failed to meet the January 1, 2014 statutory deadline to initiate the

required rulemaking procedure. (SC, NRDC, and EJ, No. 58 at pp. 1-2) Additionally, IPI et al. commented that the statutory backstop provision in 42 U.S.C. 6295(i)(6)(A)(v) is absolute and unambiguous, suggesting that it applies even if it did not meet EPCA's typical mandate that standards be "economically justified," or that "the benefits of the standards exceed its burdens." These commenters stated that federal law demands that DOE promulgate the backstop standard regardless of the magnitude of climate benefits or the results of its cost-benefit analysis more broadly. (IPI et al., No. 54 at pp. 4-5)

DOE concludes that the 45 lm/W backstop requirement has been triggered for the reasons put forth in the December 2021 NOPR. That is, DOE failed to complete the first cycle of rulemaking in accordance with clauses (i) through (iv) of 42 U.S.C. 6295(i)(6)(A), and DOE's final rules that were published did not produce savings that are "greater than or equal to the savings from a minimum efficacy standard of 45 lm/W[.]" 42 U.S.C. 6295(i)(6)(A)(v).

First as explained above and in the December 2021 NOPR, DOE did not complete the first cycle rulemaking in accordance with the criteria established by EPCA because it did not complete the rulemaking in a timely manner. (42 U.S.C. 6295(i)(a)(6)(i)-(iv)) As discussed, the structure of section 6295(i)(6)(A) reflects an expectation by Congress that by January 1, 2017, the outcome of DOE's GSL rulemaking would have been known, and, if either amended standards or the backstop were to be applicable, those would be in place no later than January 1, 2020. Even if the statute contemplated a third possible scenario as previously suggested by commenters—*i.e.*, a determination by DOE that

standards for GSLs need not be amended, in which circumstance the backstop would not be triggered (see e.g., NEMA, Docket No. EERE-2018-BT-STD-0010,[10] No. 329 at p. 40) —it is clear from section 6295(i)(6)(A) that Congress expected this determination would be made no later than January 1, 2017. This lack of a timely concluded rulemaking by itself constitutes a failure to complete a rulemaking in accordance with the enumerated clauses, thereby triggering the backstop.

While failure to satisfy any one of the specified criterion alone triggers the backstop, DOE agrees with those commenters stating that DOE also failed to conduct the evaluation required by 42 U.S.C. 6295(i)(6)(A)(ii)(II)—*i.e.*, an evaluation of a 45 lm/W standard for GSLs. As explained, the December 2019 Final Determination only evaluated standards in relation to a 45 lm/W requirement for GSILs. ~~By~~By providing only a limited evaluation of a 45 lm/W requirement and by excluding other GSLs from this evaluation (*e.g.*, CFLs, LEDs), DOE failed to consider a minimum standard of 45 lm/W for ~~all~~ GSLs as required by 42 U.S.C. 6295(i)(6)(A)(ii)(II).

In addition, Congress provided that the backstop requirement is triggered if the rulemaking completed under 42 U.S.C. 6295(i)(6)(A) "does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 [l/w]." 42 U.S.C. 6295(i)(6)(A)(v). That is an independent basis for application of the backstop under section 6295(i)(6)(v). As discussed, neither the September 2019 Withdrawal Rule nor the December 2019 Final Determination considered whether any energy savings

[10] Available at: *www.regulations.gov/docket/EERE-2018-BT-STD-0010.*

resulting from either rule would produce energy savings that are greater than or equal to a minimum efficacy standard of 45 lm/ W.

For the foregoing reasons, DOE has determined the backstop requirement in 42 U.S.C. 6295(i)(6)(A)(v) was triggered and should have been effective as of January 1, 2020.

DOE received extensive comments from IPI et al. regarding consideration of greenhouse gas emission and the estimated value of emission reductions as a result of the backstop requirement. (*See generally* IPI *et al*., No. 54) DOE agrees with IPI et al. that once triggered, application of the backstop requirement does not necessitate a determination of economic justification. (*See* IPI et al., No. 54 at pp. 4-5) Importantly, the 45 lm/W backstop standard is explicitly commanded by Congress in 42 U.S.C. 6295(i)(6)(A)(v). This is not a discretionary rulemaking standard subject to evaluation of the factors at 42 U.S.C. 6295(o). ~~Although not required~~However, consistent with Executive Order 12866, DOE notes that it has provided a cost-benefit analysis of implementing the 45 lm/W backstop for GSLs, which is discussed in greater detail for the public in section ~~IV.A for informational purposes only~~IV.A of this document.

DOE received a number of comments that objected to the 45 lm/W requirement generally. DOE received comments stating that regulation was not necessary as market forces were shifting lighting technology to LED lamps. DOE also received comments stating that the backstop standard would be costly to consumers and remove consumer

choice in product and product features. Commentators also stated potential health and safety concerns resulting from the implementation of the backstop requirement. These comments are discussed in detail in section II.D of this document.

DOE also received comments in general support of the 45 lm/W requirement. NPC Council stated that having a consistent federal standard in place will enable better energy efficiency planning and a more equitable distribution of the benefits to consumers. (NPC Council, No. 46 at p. 2) NYSERDA, CFA and NCLC, NRF and RILA, ALA, Lutron, NEEA, CEC, CA IOUs, SC, NRDC, and EJ, ASAP *et al*., the Attorneys General, and IPI et al. stated that the nation would experience benefits such as reduced electricity bills and reduced climate emissions from the implementation of the 45 lm/W backstop requirement. (NYSERDA, No. 48 at pp. 1-2; CFA and NCLC, No. 52 at p. 2; NRF and RILA, No. 55 at p. 2; ALA, No. 57 at p. 1; Lutron, No. 62 at p. 2; NEEA, No. 64 at pp. 1-2; CEC, No. 53 at p. 1; SC, NRDC, and EJ, No. 58 at p. 1; ASAP et al., No. 63 at p. 1; Attorneys General, No. 60 at p. 1; IPI et al., No. 54 at p. 4) ALA stated its support for the adoption of the 45 lm/W backstop requirement with the caveat that it opposed a 60-day effective date for the backstop. ALA also noted that its comments are submitted in support of the NEMA positions. (ALA, No. 57 at p. 2)

As stated, DOE has determined that it failed to conduct a rulemaking (or rulemakings) in accordance with the criteria specified by EPCA at 42 U.S.C. 6295(i)(6)(A)(i)-(iv) and the final rules that were published did not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W.

(42 U.S.C. 6295(i)(6)(A)(v)) Accordingly, the statute requires the Secretary to prohibit the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W.

B. Scope of Backstop Requirement

Once triggered, the backstop requirement as specified in 42 U.S.C. 6295(i)(6)(A)(v) directs DOE to prohibit the sale of GSLs that do not meet a minimum efficacy standard of 45 lm/W. DOE's previous regulatory definition of GSL did not include any of the 22 lighting applications or bulb shapes explicitly not included in the definition of GSIL,[11] or any general service fluorescent lamp or IRL. (*See*, 42 U.S.C. 6291(30)(BB)(ii))

On August 21, 2021, DOE published a notice of proposed rulemaking proposing to amend the then-current definitions of GSL and GSIL to be defined as previously set forth in the January 2017 Final Rules. 86 FR 46611 ("August 2021 Definition NOPR"). DOE issued a final rule published elsewhere in this issue of the *Federal Register* responding to comments received on the August 2021 Definition NOPR and adopting the definitions of GSL and GSIL as set forth in that NOPR. These definitions of GSL and GSIL adopted by DOE in the 2022 Definition Final Rule are as follows:

[11] As defined in EPCA "general service incandescent lamp" does not include the following incandescent lamps: (I) An appliance lamp; (II) A black light lamp; (III) A bug lamp; (IV) A colored lamp; (V) An infrared lamp; (VI) A left-hand thread lamp; (VII) A marine lamp; (VIII) A marine signal service lamp; (IX) A mine service lamp; (X) A plant light lamp; (XI) A reflector lamp; (XII) A rough service lamp; (XIII) A shatter-resistant lamp (including a shatter-proof lamp and a shatter-protected lamp); (XIV) A sign service lamp; (XV) A silver bowl lamp; (XVI) A showcase lamp; (XVII) A 3-way incandescent lamp; (XVIII) A traffic signal lamp; (XIX) A vibration service lamp; (XX) A G shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002 with a diameter of 5 inches or more; (XXI) A T shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002) and that uses not more than 40 watts or has a length of more than 10 inches; (XXII) A B, BA, CA, F, G16-1/2, G-25, G30, S, or M-14 lamp (as defined in ANSI C79.1-2002 and ANSI C78.20-2003) of 40 watts or less. (42 U.S.C. 6291(30)(D)(ii))

General service lamp means a lamp that has an ANSI base; is able to operate at a voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or at 277 volts for integrated lamps, or is able to operate at any voltage for non-integrated lamps; has an initial lumen output of greater than or equal to 310 lumens (or 232 lumens for modified spectrum general service incandescent lamps) and less than or equal to 3,300 lumens; is not a light fixture; is not an LED downlight retrofit kit; and is used in general lighting applications. General service lamps do not include:

(1) Appliance lamps;

(2) Black light lamps;

(3) Bug lamps;

(4) Colored lamps;

(5) G shape lamps with a diameter of 5 inches or more as defined in ANSI C79.1-2002;

(6) General service fluorescent lamps;

(7) High intensity discharge lamps;

(8) Infrared lamps;

(9) J, JC, JCD, JCS, JCV, JCX, JD, JS, and JT shape lamps that do not have Edison screw bases;

(10) Lamps that have a wedge base or prefocus base;

(11) Left-hand thread lamps;

(12) Marine lamps;

(13) Marine signal service lamps;

(14) Mine service lamps;

(15) MR shape lamps that have a first number symbol equal to 16 (diameter equal to 2 inches) as defined in ANSI C79.1-2002, operate at 12 volts, and have a lumen output greater than or equal to 800;

(16) Other fluorescent lamps;

(17) Plant light lamps;

(18) R20 short lamps;

(19) Reflector lamps that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C79.1-2002 and that do not have E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, or EX39 bases;

(20) S shape or G shape lamps that have a first number symbol less than or equal to 12.5 (diameter less than or equal to 1.5625 inches) as defined in ANSI C79.1-2002;

(21) Sign service lamps;

(22) Silver bowl lamps;

(23) Showcase lamps;

(24) Specialty MR lamps;

(25) T shape lamps that have a first number symbol less than or equal to 8 (diameter less than or equal to 1 inch) as defined in ANSI C79.1-2002, nominal overall length less than 12 inches, and that are not compact fluorescent lamps;

(26) Traffic signal lamps.

General service incandescent lamp means a standard incandescent or halogen type lamp that is intended for general service applications; has a medium screw base; has a lumen range of not less than 310 lumens and not more than 2,600 lumens or, in the case of a modified spectrum lamp, not less than 232 lumens and not more than 1,950 lumens; and is capable of being operated at a voltage range at least partially within 110 and 130 volts; however, this definition does not apply to the following incandescent lamps—

(1) An appliance lamp;

(2) A black light lamp;

(3) A bug lamp;

(4) A colored lamp;

(5) A G shape lamp with a diameter of 5 inches or more as defined in ANSI C79.1-2002;

(6) An infrared lamp;

(7) A left-hand thread lamp;

(8) A marine lamp;

(9) A marine signal service lamp;

(10) A mine service lamp;

(11) A plant light lamp;

(12) An R20 short lamp;

(13) A sign service lamp;

(14) A silver bowl lamp;

(15) A showcase lamp; and

(16) A traffic signal lamp.

NYSERDA submitted comments encouraging DOE to publish final rules for both the 45 lm/W backstop and expanded scope definitions as these rules will provide overdue savings. (NYSERDA, No. 48 at p. 3) CEC, CA IOUs, SC, NRDC, and EJ, CFA, NCLC, the Attorneys General, and NYSERDA stated that DOE should promptly reinstate the January 2017 Definition Final Rules expanding the definitions of GSL and GSIL to take effect no later than the effective date of the GSL backstop, thus enforcing the backstop sales prohibition on the expanded scope of GSLs. (CA IOUs, No. 56 at pp. 2-3; SC, NRDC, and EJ, No. 58 at p. 3; CFA, NCLC, No. 52 at p. 1; Attorneys General, No. 60 at p. 1) CEC stated that reinstatement of the expanded definition of GSLs finalized in the January 2017 Definition Final Rules would achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (CEC, No. 53 at pp. 4-5) The CA IOUs and NYSERDA commented that reinstatement of the January 2017 Definition Final Rules was identified for review in President Biden's Executive Order 13990 and slated for completion by December 31, 2021, and that additional delay to finalize both rules prevents realizing the full energy savings potential of the GSL backstop standard. (CA IOUs, No. 56 at p. 2; NYSERDA, No. 48 at p. 2) The CA IOUs stated that California and several other states have adopted and implemented the 45 lm/W backstop standard including DOE's expanded GSL definition. The CA IOUs further stated that in California the CEC have reported no consumer complaints about product availability. (CA IOUs, No. 56 at p. 3) The Attorneys General stated that together, prompt enforcement of the backstop standard and the expanded definition of GSLs will significantly increase GSL efficiency and ensure that consumers, businesses, and

governments enjoy the full economic and environmental benefits of strong national energy efficiency standards. (Attorneys General, No. 60 at p. 3) Minimise USA stated that it supports setting a minimum efficacy standard of 45 lm/W for GSLs and GSILs, such as those used in decorative, recessed, and track lighting fixtures. (Minimise USA, No. 38 at p.1)

As noted, the 2022 Definition Final Rule amended the definitions of GSL and GSIL as they were specified in the January 2017 Definition Final Rules. For the current definition of GSL adopted in the 2022 Definition Final Rule, DOE adopted additional detail to the statutory definition by specifying the base type, lumens, and voltages of GSLs. DOE also removed the GSIL exemptions for certain incandescent lamps that are used in general lighting applications and included those lamps in the definition of GSIL and GSL. The adopted definitions of GSL and GSIL explicitly include not only A-shaped or pear-shaped light bulbs but also the smaller, decorative shaped light bulbs resembling a candle, bullet or globe and often used in chandeliers, desk lamps, ornamental wall lights, etc. Additionally, the definitions include reflector shaped light bulbs that have a cone-like shape with an inner reflective coating that directs light and are often used in recessed light fixtures (e.g., lights within the ceiling wall). Based on estimates from DOE's 2015 Lighting Market Characterization Report, the GSL definition adopted in the 2022 Definitions Final Rule comprise 5.8 billion lamps. The sales prohibition under the backstop requirement would affect any lamp type that is defined as a GSL.

C. Implementation and Enforcement

In the December 2021 NOPR, DOE stated that once triggered, the backstop requirement provides that DOE "shall prohibit" sales of any GSL below the 45 lm/W backstop standard "effective beginning January 1, 2020." 86 FR 70755, 70766. DOE noted in its prior explanation that if it is determined that the backstop is triggered, DOE would not have discretion regarding the effective date of the backstop standard. *Id.* DOE also recognized the unique circumstances created by the delay in correctly addressing the applicability of the backstop. *Id.* DOE stated that were it to issue a final determination that the backstop has been triggered, DOE proposes to use its enforcement discretion to provide the necessary flexibility to avoid undue market disruption. *Id.* DOE presented an example of a discretionary enforcement approach, in which DOE would consider a staggered implementation that weighs factors such as the point of manufacture, the point of sale, and the anticipated inventory of different lamp categories. *Id.* DOE stated that this flexible enforcement approach takes into account the disruptive supply chain effects of stranded inventory and the significant consumer and environmental benefits of full compliance, and would best balance Congress's intent to facilitate a smooth transition with Congress's intent that the different efficacy standards were to be in place as of January 1, 2020. *Id.* DOE requested input of this consideration and on additional considerations for enforcement. *Id.*

Several commenters addressed whether DOE has discretion in enforcing the 45 lm/W backstop standard. NEMA asserted that DOE acknowledged in the December 2021 NOPR that it has the discretion to set an effective date that recognizes the need for

an appropriate transition period to discontinue sales. (NEMA, No. 51 at pp. 3-4) GE Lighting stated that following a new energy efficiency standard, Congress has generally provided three years for manufacturers to prepare for a transition of products followed by an unlimited amount of time to sell through existing inventory. (GE Lighting, No. 59 at p. 2) NEMA also commented that the statutory scheme reflects Congressional intent that manufacturers and retailers have at least three years to plan for and adjust to any sales restrictions. (NEMA, No. 51 at p. 4) NEMA stated that Congress makes laws with due regard to market forces and therefore Congressional intent is that DOE act with global market forces and consumer demand in mind when exercising agency authority. (NEMA, No. 51 at p. 2) NEMA stated that while supply and demand for incandescent lamps is declining, demand persists and in a free market economy manufacturers and retailers respond by supplying products. (NEMA, No. 51 at p. 2) NEMA stated that a 60-day transition period is inconsistent with that Congressional intent and a transition period of 365 days, though two years sooner than Congress intended, would give manufacturers necessary time to adjust to the sales ban. NEMA also commented that while the Administrative Procedure Act requires a minimum of 30 days before a rule may become effective, it does not set a maximum period for an effective date. (NEMA, No. 51 at p. 4)

GE Lighting commented on its understanding that DOE recognizes the practicalities of the transition to new standards and that this challenge can be mitigated through DOE's enforcement discretion. GE Lighting further supported NEMA's proposal to phase in the regulation in three steps. (GE Lighting, No. 59 at p. 2) NEMA

and GE Lighting requested that DOE clearly state specific enforcement timelines to avoid negative outcomes for businesses and ensure availability of lighting for consumers. (NEMA, No. 51 at p. 4; GE Lighting, No. 59 at p. 2) NEMA stated that the proposed regulatory text in the December 2021 NOPR (see 86 FR 70755, 70770) would impose an immediate ban on sales of covered lamps and is inconsistent with DOE's statements in the December 2021 NOPR regarding enforcement discretion. (NEMA, No. 51 at p. 5)

NRF and RILA stated they want to ensure changes resulting from the 45 lm/W backstop implementation do not cause adverse environmental and economic impacts and are widely accepted by consumers. (NRF and RILA, No. 55 at p. 2)

CEC stated that, while it agrees with the DOE's stated concerns regarding the potential immediate imposition of a sales prohibition, DOE's proposal to exercise its enforcement discretion is inconsistent with EPCA and Congressional intent. (CEC, No. 53 at p. 3) CEC stated that Congress provided manufacturers with notice that if DOE did not meet its statutory obligations by January 1, 2017, there would be a mandatory sales prohibition on any GSL, as defined, that could not meet a minimum efficacy of 45 lm/W. CEC stated that DOE indicated the backstop would be automatically triggered as early as March 17, 2016. CEC asserted that on January 1, 2017, manufacturers knew that DOE had not met the statutory requirements. CEC argued that stakeholders knew or should have known, three years in advance, that EPCA's backstop sales prohibition would be in effect on January 1, 2020. CEC further argued that Congressional intent is for DOE to enforce the backstop for all noncompliant GSLs, as defined by EPCA, immediately,

without exercising its enforcement discretion. (CEC, No. 53 at pp. 3-4) Additionally, CEC asserted that because Congress provides state Attorneys General with the authority to enforce the "applicable standard established under section 6295(i)" against any GSIL that doesn't meet the standard, state Attorneys General could enforce the backstop to ensure consumer protection in their states regardless of DOE's enforcement discretion. (CEC, No. 53 at p. 4; *citing* 42 U.S.C. 6304)

In this document, DOE has determined that the backstop provision in 42 U.S.C. 6295(i)(6)(A)(v) has been triggered and the Secretary must prohibit the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W. DOE recognizes that implementation of the backstop, which is a sales prohibition, presents different challenges than most DOE standards, which are based on the date of manufacture. DOE recognizes that a transition period is often necessary for the market to adjust to the implementation of a standard.

Congress structured 42 U.S.C. 6295(i)(6)(A)(i)-(v) so as to provide manufacturers with a lead time (with a possible shorter lead time for California and Nevada) to adjust to different efficacy standards—either standards adopted by DOE through rulemaking or the imposition of the statutory backstop. In addition, Congress expressly required DOE to consider phased-in effective dates by considering "the impact . . . on manufacturers, retiring and repurposing existing equipment, stranded investments, labor contracts, workers, [ ] raw materials," and "the time needed to work with retailers and lighting designers to revise sales and marketing strategies." 42 U.S.C. 6295(i)(6)(A)(iv).

Therefore, Congress did not intend for there to be an instantaneous imposition of a new 45 lm/W efficacy standard for GSLs. Such a possible outcome exists now only because of DOE's delay in correctly addressing the applicability of the backstop. DOE must balance Congress's intent to facilitate a smooth transition to different efficacy standards through the provision of lead time with the clear intent of Congress that these different efficacy standards were to be in place as of January 1, 2020. 42 U.S.C. 6295(i)(6)(A)(jjj),(v). Hence, in order to provide for a smooth transition, DOE will account for the practicalities of this transition to Congress's backstop efficacy standard through use of its enforcement discretion.

~~DOE disagrees with commenters that it has discretion as to the enforcement date of the backstop requirement. Once~~As previously stated, once DOE determines that the backstop has been triggered, Congress provides a specific date on which the prohibition begins – January 1, 2020. (42 U.S.C. 6295(i)(6)(A)(v)). ~~As DOE previously explained, once it is determined that the backstop is triggered, DOE does not have discretion regarding the effective date of the backstop standard. 86 FR 70755, 70766. Any additional delay in the effective date of the 45 lm/W sales prohibition would be contrary to the intent of Congress.~~ However, as noted, DOE understands the practicalities associated with ~~the~~an immediate implementation of the 45 lm/W backstop standard for GSLs and therefore, will issue guidance regarding enforcement of the standard. DOE's enforcement guidance will be applicable to all states (except for California and Nevada, see section II.A.3).

The enforcement guidance will be informed, in part, by the comments received to the May 2021 RFI and December 2021 NOPR. In the December 2021 NOPR, DOE discussed the comments received on enforcement in the May 2021 RFI. DOE also received several comments on the December 2021 NOPR regarding enforcement including the date of enforcement, phased-in enforcement approach, and consumer education. These comments are discussed in the following sections.

1. Prompt Enforcement

DOE received comments recommending DOE begin enforcing the 45 lm/W backstop requirement as soon as possible. SC, NRDC, and EJ stated that in light of delays, DOE should act swiftly to finalize the proposed rule and begin enforcing EPCA's backstop. (SC, NRDC, and EJ, No. 58 at p. 1) CEC, SC, NRDC, and EJ, ASAP et al., and NASEO stated that DOE missed the December 31, 2021 deadline set by President Biden in Executive Order 13990 to complete the review of the backstop rule. (CEC, No. 53 at p. 3; SC, NRDC, and EJ, No. 58 at p. 2; ASAP *et al.*, No. 63 at pp. 1-3; NASEO, No. 45 at p. 1) SC, NRDC, and EJ stated that the White House's Office of Information and Regulatory Affairs ("OIRA") took approximately two and a half months to review the December 2021 NOPR pursuant to EO 12886, and that this pace fails to reflect that the December 2021 NOPR is simply corrections of unlawful legal interpretations from the prior administration. SC, NRDC, and EJ urged DOE to cease what they characterized as its ongoing, unlawful efforts to avoid implementing the transformative advance in lighting efficiency that Congress enacted in 2007. (SC, NRDC, and EJ, No. 58 at p. 2)

SC, NRDC, and EJ, CFA and NCLC, CEC, CA IOUs, ASAP et al., NASEO, the Attorneys General, and IPI et al. stated that DOE should implement prompt enforcement of the backstop standard. (CEC, No. 53 at p. 5; CA IOUs, No. 56 at pp. 2, 4; SC, NRDC, and EJ, No. 58 at p. 2; ASAP et al., No. 63 at p. 3; NASEO, No. 45 at p. 1; CFA and NCLC, No. 52 at p. 3; Attorneys General, No. 60 at pp. 2, 3, 4; IPI et al., No. 54 at p. 3) CEC stated that DOE should not exercise its proposed enforcement discretion, as it would allow manufacturers to shift the costs of inefficient and unlawful lighting onto the environment and consumers. (CEC, No. 53 at p. 3) CEC added that exercising enforcement discretion would undermine President Biden's commitment to addressing the climate crisis. (CEC, No. 53 at pp. 1-2) CEC asserted that the law regarding the statutorily required implementation of the backstop is clear, and stakeholders were on notice of the sales prohibition since January 1, 2017, and that DOE should carry out enforcement immediately. (CEC, No. 53 at p. 2) CEC further stated that DOE is required to implement the backstop immediately, and that no environmental or economic analysis is required to implement the backstop. (CEC, No. 53 at pp. 2-3)

CEC, CFA, and NCLC asserted that each month of additional delay in backstop implementation costs consumers nearly $300 million in lost bill savings and results in 800,000 tons of carbon emissions. (CEC, No. 53 at p. 2; CFA and NCLC, No. 52 at pp. 1-2) ASAP et al. stated that inefficient GSLs sold during a six-month period add nearly 5 million metric tons ("MMT") of carbon emissions to the atmosphere and cost consumers $1.8 billion in higher utility bills. ASAP et al. further stated that allowing lamp manufacturers to continue the manufacture and sale of inefficient lamps would benefit

manufacturers at the expense of consumers and the planet. (ASAP et al., No. 63 at p. 3) CEC argued that although manufacturers and distributors may experience losses from stranded inventory, if inefficient GSLs are permitted to remain in the market consumers will experience higher energy bills and the grid will have unnecessary load. CEC further stated that DOE's proposed enforcement discretion is inconsistent with Executive Order 13990 and places unreasonable weight on stranded costs without accounting for economic and environmental costs to consumers and the environment. (CEC, No. 53 at pp. 4)

The Attorneys General cited DOE's estimates of savings from the backstop and stated that prompt implementation of the backstop will facilitate manufacturers' deployment of more efficient technologies, increase consumer choice, significantly reduce energy costs, and ensure equitable distribution of lighting efficiency benefits. (Attorneys General, No. 60 at pp. 1, 2-3) The Attorneys General stated that, in a recent GSL market survey of New York state commissioned by the NYSERDA, retailers and distributors reported that they rely on manufacturers to provide products that comply with regulatory requirements, and manufacturers revealed that they anticipate efficiency standards to increase in stringency but will not initiate product changes without a high level of certainty that the requirements will go into effect. The Attorneys General also stated the survey showed that LED lamps across product types are now widely available in New York. (Attorneys General, No. 60 at pp. 2-3) IPI et al. asserted that the backstop's net benefits are likely considerably higher than DOE's estimates due to perceived discrepancies in social cost estimates and discount rates. (IPI et al., No. 54 at p. 36) IPI et al. stated that DOE should implement the backstop as soon as possible to ensure the

backstop's net benefits to the public are maximized and available earlier. (IPI et al., No. 54 at p. 36)

SC, NRDC, and EJ, CFA and NCLC, ASAP et al., NYSERDA, NASEO, and the Attorneys General stated that prompt implementation of the backstop standard will benefit low-income consumers. (SC, NRDC, and EJ, No. 58 at p. 2; NYSERDA, No. 48 at p. 2; Attorneys General, No. 60 at p. 3; CFA and NCLC, No. 52 at pp. 2, 3) ASAP et al. and NASEO stated that low- and moderate-income households spend a disproportionate share of their incomes on higher electric bills. (ASAP et al., No. 63 at pp. 1-2; NASEO, No. 45 at p. 1) ASAP et al. further stated that low-income households spend nearly ten times as much of their income on energy bills as other households, 10.4 percent compared to 1.2 percent. (ASAP et al., No. 63 at p. 2) The CFA and NCLC commented that most low-income households are typically renters who often have older preinstalled and less efficient incandescent lamps or CFLs. (CFA and NCLC, No. 52 at p. 2) SC, NRDC, and EJ, ASAP et al., NYSERDA, and the Attorneys General stated that low-income consumers often lack access to retailers that stock affordable, lasting, energy efficient lamps. (SC, NRDC, and EJ, No. 58 at p. 2; ASAP et al., No. 63 at p. 2) NYSERDA, CFA, and NCLC cited a 2018 study conducted by the University of Michigan which they stated found that retailers serving disadvantaged communities had higher availability of less efficient lamps or set prices higher than retailers in other communities. (CFA, NCLC, No. 52 at p. 2) NYSERDA further stated that while LED lamps made up 73 percent of all 2020 GSL sales in New York, over half the lamps in certain locations and through some sales channels were less efficient lamps. NYSERDA

stated that DOE should limit enforcement discretion as it will deny savings from consumers most in need. (NYSERDA, No. 48 at p. 2) The Attorneys General stated that mandating the backstop standard would ensure that low-income consumers, who have fewer options for energy efficient lamps, do not unnecessarily purchase lamps that ultimately cost more to own and operate. (Attorneys General, No. 60 at p. 3)

NYSERDA encouraged DOE to implement the backstop immediately after the proposed 60 days for as many lamp types as possible, especially for popular A-lamps. NYSERDA also stated that DOE should consider the associated risks and rewards and provide thorough justification for any enforcement discretion decisions. (NYSERDA, No. 48 at pp. 2-3)

The NPC Council stated that it supported the proposed 60-day effective date if the backstop is implemented to allow manufacturers and retailers to transition existing inventory. The NPC Council supported DOE's exercise of its enforcement discretion, especially for small towns and rural areas where inventory turnover is slower, and consumers have less access to large retailers. The NPC Council, also commented that the delays to date in implementing the backstop have likely resulted in higher costs for consumers in those rural areas due to lack of access to low-cost LED lamps. (NPC Council, No. 46 at p. 2)

NEMA stated that commentators have overstated the energy savings from the backstop. (NEMA, No. 51 at p. 5) ALA opposed the proposed 60-day effective date

arguing that it would not allow for a smooth transition and would cause economic damage to manufacturers and retailers. ALA recommended that DOE provide manufacturers and retailers a reasonable amount of time to fulfill existing supply contracts and sell through inventory without causing harmful financial losses. (ALA, No. 57 at p. 2) NEMA asserted that logistical, contractual, and other immutable challenges make 60 days insufficient for businesses to respond and for retailers to change their inventory to avoid empty shelves. (NEMA, No. 51 at p. 2) NEMA further stated that a 60-day effective date would potentially cause irrecoverable financial losses for U.S. businesses throughout the supply chain. (NEMA, No. 51 at p. 3) GE Lighting stated the backstop requirement eliminates all halogen and incandescent lamps manufactured at this time and that a 60-day effective date would adversely impact the availability of GSILs and substitute products, leading to significant market disruption and harm to manufacturers, component suppliers, and retailers. (GE Lighting, No. 59 at p. 2) Lutron stated that while LED lamps are expected to meet the 45 lm/W standard, compliance has additional burden and DOE should use its enforcement discretion to prevent unintended market disruption. (Lutron, No. 62 at p. 2)

NRF and RILA stated that the 60-day effective date is a significant challenge for the retail industry since retailers maintain a 6 to 12 months inventory of incandescent lamps for consumers who have not transitioned to LEDs. (NRF and RILA, No. 55 at p. 2) Specifically, NRF and RILA stated that lower-income households have not transitioned to LED lamps at the same rates as higher-income households due to higher initial purchase costs. (NRF and RILA, No. 55 at p. 2) VALU Home Centers stated that

while it supports the 45 lm/W backstop and mostly sells LED lamps, it would like to sell through the lamps that will not meet the backstop standard to avoid extra costs to vendors and retailers. (VALU Home Centers, No. 43 at p. 1)

DOE appreciates these comments relating to timing for enforcement of the 45 lm/W backstop standard. As previously noted in this rule, once DOE determines that the backstop has been triggered, Congress provides a specific date on which enforcement of the prohibition begins – January 1, 2020. (42 U.S.C. 6295(i)(6)(A)(v)). Since this date has already passed, DOE will use enforcement guidance to provide stakeholders with more certainty as to how they must comply with the new standard. This guidance will be released simultaneously with this rulemaking. DOE also notes that because this rule is a "major rule" under Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996, also known as the Congressional Review Act, the rule cannot be effective prior to 60 days after publication in the Federal Register as required by 5 U.S.C. 801. To ensure the effective date for the 2022 Definition Final Rule occurs before the effective date of this final rule so that the amended definitions of GSL, GSIL and the other supplemental definitions are final before the standards in this rule are effective, the 2022 Definition Final Rule has a 60-day effective date and this rule will be effective within 75 days of publication instead of the 60-day effective date as proposed. This will ensure that the full scope of GSLs subject to the backstop requirement is established before the sales prohibition for GSLs that do not meet the 45 lm/W backstop requirement goes into effect. Regarding comments related to the estimated energy savings, DOE address these comments in section II.D.1. of this document.

2. Phased-In Enforcement

NEMA and GE Lighting stated that the effective date of the backstop should be 12 months after the publication of the final rule. (NEMA, No. 51 at p. 4; GE Lighting, No. 59 at pp. 2-3) NEMA stated manufacturers need at least 12 months following the publication of the final rule to cease the production of incandescent/halogen lamps and adjust supply chains. (NEMA, No. 51 at p. 3) NEMA further stated that these timeline estimates are based on normal market conditions, independent of current supply and logistics challenges, and are optimistically short. (NEMA, No. 51 at p. 3) GE Lighting supported NEMA's proposal and added that the supply chain for incandescent lamps is both long and complicated, involving transportation to points of manufacture outside of the U.S., shipping all finished products to exporting foreign ports, and importation into the U.S. (GE Lighting, No. 59 at pp. 2-3)

NRF and RILA stated that some retailers will need at least a 12-month sell-through period beyond a manufacture-by date to fully deplete existing inventories, reduce unnecessary waste, and give consumers time to adjust to the new product mix. (NRF and RILA, No. 55 at p. 2) ALA further stated that separate sales ban dates for retailers and manufacturers are necessary to allow retailers to clear their inventory and avoid negative effects on the small businesses that make up the residential lighting industry. (ALA, No. 57 at p. 2) NEMA and GE Lighting stated that after the 12-month manufacture-by (import) date, two separate phases of sell-through for high-volume and lower-volume lamps should be included as part of DOE's enforcement discretion. NEMA stated that

retailers would need a minimum of 12 months to sell through high-volume A-line GSIL and R30/BR30 IRL inventory, with additional time potentially necessary to sell through all other slow-moving GSLs and those newly added to the expanded definition of GSL. (NEMA, No. 51 at pp. 3-5) GE Lighting stated support for a 12-month sell-through of halogen A-line lamps and added that additional time, up to a second year, will be needed to clear inventory of slower moving products added per the expanded definition of GSL. (GE Lighting, No. 59 at p. 3)

NEMA stated that the COVID-19 pandemic has greatly complicated supply chain forces and has produced transportation and timing challenges outside the control of manufacturers or retailers. (NEMA, No. 51 at p. 2) NEMA stated that supply chain delays have persisted from 2020 through 2022 and include COVID protocols and lack of employees, logistics and shipping delays doubling lead times from 5-6 weeks to up to 10-12 weeks for imported products which are also greatly increasing shipping costs, and electronic chip shortages that are affecting LED lamp production. NEMA further stated that the pandemic's impacts have caused delays for everything from component sourcing to delivery of goods from the factory to the store shelf, and are persisting into 2022 with no immediate end in sight. (NEMA, No. 51 at p. 3) NEMA recommended that any definition of manufacturing considered in DOE's enforcement policy should allow for departure from foreign ports in recognition of the unprecedented and unpredictable supply chain activities. (NEMA, No. 51 at p. 4) GE Lighting stated that previously weeks-long processes now take months and that the three most pressing issues for increasing production and inventory of new LED lamps are electronic chip component

shortages, shipping and port delays for imported products, and COVID-related production delays. (GE Lighting, No. 59 at p. 3) NEMA asserted that DOE has an obligation to protect U.S. businesses, manufacturers, and retailers from unnecessary negative financial impacts and encouraged DOE to review all past NEMA comments on the backstop rule and its implementation. (NEMA, No. 51 at pp. 2, 5)

DOE is aware of the near-term supply chain issues resulting from the on-going COVID-19 pandemic. In June 2021, the Short-Term Supply Chain Disruptions Task Force ("Task Force") was created and is led by the U.S. Department of Transportation, the U.S. Department of Commerce, and the U.S. Department of Agriculture, and the Task Force focuses on the mismatch of supply and demand in semiconductors, among other issues.[12] The Task Force has moved ports toward 24/7 operations and reduced long-dwelling containers sitting on the docks.[13] Moreover, on February 23, 2022, the U.S. Department of Transportation announced $450 million of funding available for ports across the country to make infrastructure upgrades.[14] While these and other efforts have been undertaken to address supply-chain issues, DOE acknowledges that issues remain on-going.

Further, DOE recognizes the sell-through issue that arises because the backstop requirement is a sales prohibition, and that manufacturers and retailers may have been

[12] *www.whitehouse.gov/briefing-room/statements-releases/2021/06/08/fact-sheet-biden-harris-administration-announces-supply-chain-disruptions-task-force-to-address-short-term-supply-chain-discontinuities/*.
[13] *www.transportation.gov/briefing-room/dot-lays-out-actions-strengthen-supply-chains-and-revitalize-economy*.
[14] *www.transportation.gov/briefing-room/dot-lays-out-actions-strengthen-supply-chains-and-revitalize-economy*.

disadvantaged by DOE's position changes regarding whether the backstop requirement has been triggered. In using its enforcement discretion, DOE will consider the near-term market and supply chain environment to provide the necessary flexibility to avoid undue market disruption.

The CA IOUs commented that although DOE's use of enforcement discretion will decrease energy savings, they support DOE's application of short-term enforcement discretion that is based on transparent market data, to protect consumers from market disruptions outside of California following implementation of the backstop. The CA IOUs stated that enforcement discretion can prevent temporary shortages of low-volume GSLs that are currently less common in LED versions but should not be applied to GSILs, IRLs, or other popular, widely available GSLs. The CA IOUs recommended that industry demonstrate which GSL types necessitate enforcement discretion by making available their supply of LED GSL inventory and showing that the supply chain is insufficient to meet demand. The CA IOUs stated that any DOE enforcement discretion applied should end no later than 12 months following the effective date of the GSL backstop. (CA IOUs, No. 56 at p. 3)

DOE acknowledges the importance of avoiding market disruptions for manufacturers, retailers, and consumers, which DOE will consider in using its enforcement discretion. DOE also agrees that use of its enforcement discretion should be transparent, which is why DOE will issue an enforcement policy prescribing how its enforcement discretion will be applied.

Minimise USA stated that while the backstop requirement may cost manufacturers billions of dollars in potential profits, any transition period for compliance should only be afforded to U.S. companies that manufacture products completely in the United States, and only a one-year transition period be given for the sale of existing inventory that has been manufactured on or before the date of the final rule. Minimise USA stated that DOE should not consider China's request for a transition period of at least three years. Minimise USA stated that the debate regarding the 45 lm/W requirement has been ongoing for five years, which was sufficient time for manufacturers to be positioned for implementation of the standard. (Minimise USA, No. 38 at p.1) As stated, Congress has provided the specific date on which the backstop sales prohibition begins, and DOE seeks to give meaning to that mandate even though the date has passed. In exercising its enforcement discretion to avoid market disruption, the enforcement policy is being made public to foster transparency and equal application to all manufacturers.

Lutron stated that having to re-test LED lamps to meet the DOE requirement of testing in a National Voluntary Laboratory Accreditation Program ("NVLAP") accredited lab will be burdensome, particularly for small and medium sized lamp companies that have only made LED lamps. Lutron also stated that GSLs such as LED lamps with 50,000-hour lifetimes may require a full year of testing to certify compliance and the option of de-rating lamp lifetimes would confuse consumers. Lutron stated that given retesting time, DOE should consider an 18-24 month phase-in period, thereby preventing

the risk of lower adoption of LEDs resulting from marketplace confusion. (Lutron, No. 62 at p. 2) Once the backstop is triggered, Congress directs DOE to prohibit the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W. (42 U.S.C. 6295(i)(6)(A)(v)). Regarding testing by an accredited laboratory, DOE requires testing of GSLs be conducted by test laboratories accredited by an Accreditation Body that is a signatory member to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). A manufacturer's or importer's in-house laboratory, if accredited, may conduct the applicable testing. 10 CFR 430.25. NVLAP is a signatory of ILAC MRA. Manufacturers must make representations with respect to the energy use or efficiency of integrated LED lamps per DOE's test procedure in appendix BB to subpart B of 10 CFR part 430 (appendix BB). Thus, manufacturers selling integrated LED lamps should already be testing their products at an accredited laboratory as specified in 10 CFR 430.25. Regarding the LED lamp lifetime, the statutory requirement implemented in this rule does not establish a standard on lifetime.

3. Consumer Education

NEMA commented that the December 2021 NOPR did not address education and communication to manage potential negative consumer reactions. NEMA provided examples of such communication, including manufacturers and retailers creating point of purchase material and signage, identifying and coding cross-referencing options, developing and posting web page content, and planning and implementing employee training to reliably assist consumers. NEMA stated that considerable time was put into such efforts leading into the 2012-2014 incandescent phaseout to ensure that consumers

were not surprised when certain lamp types were not on shelves. NEMA encouraged DOE to acknowledge the lead times necessary to ensure a smooth transition by allowing time for education and communication. (NEMA, No. 51 at p. 4)

EEI stated that increasing consumer education as part of implementation of the backstop requirement would ensure a smooth and flexible market transition for consumers, including electric companies operating significant demand side management programs. (EEI, No. 61 at p. 2) GE Lighting stated that time is needed for retailers to educate those consumers that buy halogen and incandescent lamps on the issues and benefits of converting to LED technology, as well as to change and plan new LED store sets during the retailer reset period in the spring or fall. (GE Lighting, No. 59 at p. 3)

DOE agrees that consumer education can facilitate market transition and consumer acceptance of new technologies and notes the availability of existing consumer education resources. LED technology is not a new technology and, as indicated by commenters, occupies a substantial share of the lighting market. A number of big box retailers have moved to selling only LED lighting.[15] Retail locations also have provided displays to educate consumers on lamp selection, including on the selection of LED lamps to meet consumer needs. Moreover, DOE and ENERGY STAR have developed and made available educational materials to assist consumers in replacing incandescent lamps with LED lamps. *See e.g.*, "LED Bulbs Made Easy" (available at *www.energystar.gov/sites/default/files/asset/document/purchasing_checklist_revised.pdf*;

[15] EPA, "The Light Bulb Revolution," October 2017 available at *https://www.energystar.gov/sites/default/files/asset/document/LBR_2017-LED-Takeover.pdf*.

DOE's Energy Saver (available at *www.energy.gov/energysaver/led-lighting*). In addition, the Federal Trade Commission maintains a website that contains significant consumer- and manufacturer-focused content on lighting products available to all consumers and manufacturers at *www.ftc.gov/tips-advice/business-center/guidance/ftc-lighting-facts-label-questions-answers-manufacturers*.

DOE appreciates the comments received regarding the enforcement of the implementation of the backstop. DOE understands the challenges associated with inventory transition as well as the importance of ensuring lamps are available to consumers. As explained in the NOPR, DOE will issue an enforcement policy separately from this rulemaking, which will be informed by all of these comments. The policy will reflect DOE's balancing of the consumer benefits associated with energy bill savings, along with the need for a practical transition time for lamps to be sold through the distribution chain. In order to avoid negative outcomes for businesses and ensure availability of lighting for consumers, the enforcement policy will provide a clear timeline for implementation of the backstop at the point of manufacturer and at the point of sale for all general service lamps subject to the backstop.

Although DOE is not using this rulemaking to set an enforcement policy, DOE appreciates the input it received to help inform its policy, which DOE anticipates will evolve with experience. DOE's final enforcement policy to support the implementation of the Congressional backstop will be posted at *www.energy.gov/enforcement/*.

D. Impacts

DOE received several comments on the potential impacts of implementing the 45 lm/W backstop requirement including market trends and energy savings; benefits and costs to the consumer; features of LED lamps; and potential health and safety impacts of LED lighting. These comments are discussed in the following sections.

1. Market Trends and Energy Savings

NEMA commented that other commenters have overstated the energy savings potential resulting from the backstop requirement as the lighting market has already undergone a dramatic shift to LED lamps since the time this rulemaking began in 2014. NEMA stated that a small part of the market continues to choose halogen lamps due to personal preferences for dimming, color appearance, or simply first cost and that very few halogen lamps will be sold in half a decade due to market forces alone. NEMA further stated that additional savings potential from a DOE regulation is low compared to data reflecting savings already achieved from the market transition to LED lamps. (NEMA, No. 51 at p. 5) The Free Market Organizations asserted DOE failed to consider non-regulatory approaches and market forces have already resulted in the average lamp being 70 lm/W. They added that DOE has forecasted LED lamps will be 84 percent of the market by 2035 and industry data indicates that GSILs are no more than 18 percent of current sales. The Free Market Organizations further stated that overall energy savings resulting from the backstop standard will be minimal due to growth of LEDs and therefore, will not meet EPCA's requirement that an amended standard result in significant energy savings. (Free Market Organizations, No. 65 at pp. 5-6)

The CA IOUs commented that although market data show decreased savings potential from a national GSL standard, due to the market transition to LED lamps since 2017, the data also show that the size of the U.S. lighting market and the high energy efficiency of LED technology provide significant remaining savings potential. (CA IOUs, No. 56 at p. 2) The CA IOUs stated that they are not aware of technical barriers preventing market entry for LED alternatives of any GSL type. The CA IOUs asserted that LED lights of all types are available to U.S. consumers and the lighting industry has ample capacity to meet demand following the effective date of the GSL backstop, as LED products now dominate the most popular GSL shapes. (CA IOUs, No. 56 at p. 3)

The CA IOUs also commented that incandescent/halogen lamps continue to account for a significant market share for A-type lamps despite their higher life-cycle costs and the wide availability of LED alternatives. The CA IOUs stated that in 2020, incandescent/halogen lamps held a 33 percent share of the national A-type lamp market, which the lighting industry projected to decrease to 23 percent by the third quarter of 2021. The CA IOUs further stated that decorative and specialty incandescent/halogen GSLs also have a higher market share. (CA IOUs, No. 56 at p. 2) NEEA commented that in 2020, 82 percent of GSLs in stores met the 45 lm/W standard, and estimated that in the Northwest, LED and CFL products made up approximately 74 percent of all GSL sales. NEEA stated that this indicates that implementing the backstop will not adversely affect the market. (NEEA, No. 64 at p. 2) The Attorneys General commented that while the LED share of the overall lighting market in New York is over 70 percent, over half of

the GSLs for sale in some locales are incandescent/halogen lamps. (Attorneys General, No. 60 at p. 1) CFA and NCLC stated that LED market share is about 60 percent and that the remaining 40 percent of sales are incandescent products that increase consumer costs. (CFA and NCLC, No. 52 at p. 2)

DOE is appreciative of information regarding market trends and energy savings. This is not a discretionary standards rulemaking subject to evaluation of the factors at 42 U.S.C. 6295(o). As noted in section II.A.3, this final rule determines that the backstop standard has been triggered because DOE failed to complete the first cycle of rulemaking as prescribed by EPCA in 42 U.S.C. 6295(i)(6)(A). However, consistent with Executive Order 12866, DOE notes that it has provided a cost-benefit analysis of implementing the 45 lm/W backstop for GSLs, which is discussed in greater detail for the public in section IV.A.

2. Benefits and Costs

The SC, NRDC, and EJ, ASAP et al., EEI, and NASEO supported implementation of the 45 lm/W backstop, citing reductions in air pollutants, carbon dioxide ("CO_2") emissions, and electricity consumption. (SC, NRDC, and EJ, No. 58 at p. 2; ASAP et al., No. 63 at p. 1; EEI, No. 61 at p. 3) SC, NRDC, and EJ commented that applying the 45 lm/W backstop requirement to GSLs as proposed by DOE will result in more than $3 billion in net consumer benefits over 30 years. (SC, NRDC, and EJ, No. 58 at pp. 2-3) ASAP et al. and NASEO stated that per analysis performed for DOE, consumers will save an estimated $2.7 billion on an annualized basis and 222 MMT of

cumulative avoided carbon dioxide-equivalent over the next 30 years from implementing the backstop standard. (ASAP et al., No. 63 at p. 2; NASEO, No. 45 at p. 1) Minimise USA commented that, according to ASAP, a phaseout of incandescent light lamps would reduce energy use for lighting and eliminate 9.5 MMT of CO_2 emissions per year. (Minimise USA, No. 38 at p.1) CEC stated that the LED alternative of a typical A-type 60 W incandescent lamp results in 80 percent energy savings. (CEC, No. 53 at p. 2) ASAP et al. commented that an average household with about 20 sockets will save more than $100 per year and an average household with more than 50 sockets will save more than $200 per year. (ASAP et al., No. 63 at p. 2) CFA and NCLC stated that switching one lamp from incandescent to LED saves $40-$90 over ten years which, using the midpoint of $65 and estimating 45 sockets in a household, translates to $3,000 net savings per household over ten years. (CFA and NCLC, No. 52 at p. 2) CEC stated that for a typical A-type 60 W incandescent lamp, any higher initial cost of the LED version is recovered in less than a year. (CEC, No. 53 at p. 2)

CFA and NCLC commented that LEDs are no longer a new, expensive lighting technology, and manufacturers can now produce LED lamps in almost every type of lamp that consumers purchase for their homes. CFA and NCLC further stated that consumers who have switched to LED lamps have saved on energy costs and gained the convenience of not having to replace them as often due to their long life. (CFA and NCLC, No. 52 at p. 3) NEEA commented that based on its lighting market study, which includes point of sale data and in-person shelf surveys, LED products have grown since 2012 and their price has trended downwards. (NEEA, No. 64 at pp. 1-2) CFA and NCLC stated that a

2019 CFA survey found two-thirds of respondents support federal efficiency standards for lamps, compared to fewer than one-third who oppose standards. CFA and NCLC further stated that consumers that have had experience with LEDs are more likely to support efficiency standards compared to those who have no experience. CFA and NCLC stated that implementing the backstop standard will result in broader economic benefits, as cost savings in the commercial and industrial sectors are passed on to consumers through lower costs for goods and services, allowing money to be spent in other areas of the economy with greater multiplier effects. (CFA and NCLC, No. 52 at p. 2)

NASEO commented that the backstop requirement is important to the states, which rely on cost-effective federal appliance and equipment energy efficiency standards to help them meet their energy affordability, air quality, climate, electric reliability, and energy resilience goals. (NASEO, No. 45 at p. 1)

Project 21 stated that adopting the 45 lm/W backstop standard for GSLs will benefit LED manufacturers at the expense of companies that provide Edison lamps and consumers that will no longer have the choice of cost and features provided by Edison lamps. Project 21 stated that in the December 2019 Final Determination, DOE had determined not to implement the 45 lm/W backstop because it would harm consumers and would increase the cost of Edison lamps by 300 percent, resulting in a lamp costing approximately $8.10. Project 21 stated this DOE's prior determination recognized the trend towards LEDs and continued research in new technologies while making existing

options affordable. Further, Project 21 commented that the cost of LEDs and incandescent lamps is not comparable and low-income consumers will be forced to pay more. (Project 21, No. 44 at pp. 1-2) Project 21 stated that EPCA allows DOE to revise standards for lamps and other appliances but does not intend for the executive branch to wield arbitrary power over the kinds of appliances consumers can use. (Project 21, No. 44 at p. 1) Hough opposed the backstop requirement, commenting that 36 percent of the American lamp market, *i.e.*, incandescent lamps used in approximately 2 billion sockets, would become illegal. Hough stated that the requirement needlessly micromanages the economy and sides with green special interests that deny choice and affordable options. Hough stated the backstop requirement will make Edison lamps including candelabra base, globe shape, and colored lamps prohibitively expensive to produce (*i.e.*, as much as 300 percent over current costs). (Hough, No. 39 at p. 1) One anonymous commenter stated that claims that switching to LED lighting will save consumers up to $300 per year do not seem possible as their lighting costs were $96 per year prior to moving to LED lamps. This commenter expressed hope that DOE uses realistic estimates. (Anonymous, No. 50 at p. 1)

The Free Market Organizations stated their support for DOE's determination not to set more stringent standards in the December 2019 Final Determination as such standards would have eliminated incandescent lamps by making them prohibitively expensive, costing consumers more than could be earned back in energy savings. They stated DOE has the authority to reassess the existing standard for GSILs, not by imposing a 45 lm/W standard but by considering an amended standard. They added that the review

process for an amended standard under EPCA cannot prioritize efficiency above all else and must also ensure products remain available and product features, performance and reliability are preserved for consumers. (Free Market Organizations, No. 65 at p. 2)

As noted in section II.A.3 of this document, this is a non-discretionary rulemaking, not a routine standards rulemaking that considers all the factors under 42 U.S.C. 6295(o). Instead, Congress mandated the 45 lm/W backstop requirement if the Secretary fails to complete a rulemaking in accordance with clauses (i) through (iv) of 42 U.S.C. 6295(i)(6)(A) or if the final rule does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lm/W. As explained, DOE has determined that it failed to satisfy these statutory criteria. As such, the backstop requirement has been triggered.

While analysis is not statutorily required to implement the backstop requirement once triggered, consistent with E.O. 12866 DOE did ~~estimate~~conduct a cost-benefit analysis of implementing the 45 lm/W backstop for GSLs. DOE estimated the annualized national economic costs and benefits associated with the implementation of the 45 lm/W backstop relative to a no-new standard case ~~for illustrative purposes.~~. DOE first considered the product price and energy use of commercially available lamp options in the GSL definition, including those that would be prohibited under implementation of the 45 lm/W backstop and more efficacious GSLs that would continue to be available. DOE then developed a shipments model to project GSL shipments for a thirty-year period between 2022-2051 in the no-new-standard case and for the 45 lm/W backstop

case. Shipments were estimated using a consumer-choice model sensitive to first cost, energy savings, lamp lifetime, and the presence of mercury. The shipments analysis also considered the impact of price learning on product price. Based on the shipments projections, DOE calculated the national consumer economic impacts of the 45 lm/W backstop by comparing the total installed product costs and operating costs in the 45 lm/W backstop case to the no-new-standards case.

DOE also analyzed the reduction in several greenhouse gases that would result from the expanded GSL definition and the 45 lm/W backstop using emissions intensity factors intended to represent the marginal impacts of the change in electricity consumption associated with amended or new standards.[16] As part of the development of this final rule, for the purpose of complying with the requirements of Executive Order 12866, DOE considered the estimated monetary benefits from the reduced emissions of CO_2, nitrous oxide ("N_2O"), and methane ("CH_4").

On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon"

[16] The methodology is described in "Utility Sector Impacts of Reduced Electricity Demand" (Coughlin, 2014; Coughlin 2019).

the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

For the purpose of complying with the requirements of Executive Order 12866, DOE estimates the monetized benefits of the reductions in emissions of CO_2, CH_4, and N_2O by using a measure of the social cost ("SC") of each pollutant (*i.e.*, SC-GHGs). These estimates represent the monetary value of the net harm to society associated with a marginal increase in emissions of these pollutants in a given year, or the benefit of avoiding that increase. These estimates are intended to include (but are not limited to) climate-change-related changes in net agricultural productivity, human health, property damages from increased flood risk, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. DOE exercises its own judgment in presenting monetized climate benefits as recommended by applicable Executive Orders and guidance, and DOE would reach the same conclusion presented in this notice in the absence of the social cost of greenhouse gases, including the February 2021 Interim Estimates presented by the Interagency Working Group on the Social Cost of Greenhouse Gases.

DOE estimated the global social benefits of CO_2, CH_4, and N_2O reductions (i.e., SC-GHGs) using the estimates presented in the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order

13990 published in February 2021 by the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) (IWG, 2021).[17] The SC-GHGs is the monetary value of the net harm to society associated with a marginal increase in emissions in a given year, or the benefit of avoiding that increase. In principle, SC-GHGs includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk and natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHGs therefore, reflects the societal value of reducing emissions of the gas in question by one metric ton. The SC-GHGs is the theoretically appropriate value to use in conducting benefit-cost analyses of policies that affect CO_2, N_2O and CH_4 emissions. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD), the DOE agrees that the interim SC-GHG estimates represent the most appropriate estimate of the SC-GHG until revised estimates have been developed reflecting the latest, peer-reviewed science.

The SC-GHGs estimates are presented in DOE's technical support document ("TSD")[18] and were developed over many years, using transparent process, peer-reviewed methodologies, the best science available at the time of that process, and with input from the public. Specifically, in 2009, an interagency working group (IWG) that included the DOE and other executive branch agencies and offices was established to

[17] *See* Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990*, Washington, D.C., February 2021. Available at: *www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf* (last accessed March 17, 2021).
[18] *www.regulations.gov/*.

ensure that agencies were using the best available science and to promote consistency in the social cost of carbon (SC-CO_2) values used across agencies. The IWG published SC-CO_2 estimates in 2010 that were developed from an ensemble of three widely cited integrated assessment models (IAMs) that estimate global climate damages using highly aggregated representations of climate processes and the global economy combined into a single modeling framework. The three IAMs were run using a common set of input assumptions in each model for future population, economic, and CO_2 emissions growth, as well as equilibrium climate sensitivity (ECS) – a measure of the globally averaged temperature response to increased atmospheric CO_2 concentrations. These estimates were updated in 2013 based on new versions of each IAM. In August 2016 the IWG published estimates of the social cost of methane (SC-CH_4) and nitrous oxide (SC-N_2O) using methodologies that are consistent with the methodology underlying the SC-CO_2 estimates. The modeling approach that extends the IWG SC-CO_2 methodology to non-CO_2 GHGs has undergone multiple stages of peer review. The SC-CH_4 and SC-N_2O estimates were developed by Marten et al. (2015) and underwent a standard double-blind peer review process prior to journal publication. In 2015, as part of the response to public comments received to a 2013 solicitation for comments on the SC-CO_2 estimates, the IWG announced a National Academies of Sciences, Engineering, and Medicine review of the SC-CO_2 estimates to offer advice on how to approach future updates to ensure that the estimates continue to reflect the best available science and methodologies. In January 2017, the National Academies released their final report, Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide, and recommended specific criteria for future updates to the SC-CO_2 estimates, a modeling framework to satisfy the

specified criteria, and both near-term updates and longer-term research needs pertaining to various components of the estimation process (National Academies, 2017). Shortly thereafter, in March 2017, President Trump issued Executive Order 13783, which disbanded the IWG, withdrew the previous TSDs, and directed agencies to ensure SC-CO_2 estimates used in regulatory analyses are consistent with the guidance contained in OMB's Circular A-4, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates" (EO 13783, Section 5(c)).

On January 20, 2021, President Biden issued Executive Order 13990, which re-established the IWG and directed it to ensure that the U.S. Government's estimates of the social cost of carbon and other greenhouse gases reflect the best available science and the recommendations of the National Academies (2017). The IWG was tasked with first reviewing the SC-GHG estimates currently used in Federal analyses and publishing interim estimates within 30 days of the EO that reflect the full impact of GHG emissions, including by taking global damages into account. The interim SC-GHG estimates published in February 2021, specifically the SC-CH_4 estimates, are used here to estimate the climate benefits for this rulemaking. The EO instructs the IWG to undertake a fuller update of the SC-GHG estimates by January 2022 that takes into consideration the advice of the National Academies (2017) and other recent scientific literature.

The February 2021 SC-GHG TSD provides a complete discussion of the IWG's initial review conducted under EO 13990. In particular, the IWG found that the SC-GHG estimates used under EO 13783 fail to reflect the full impact of GHG emissions in

multiple ways. First, the IWG found that a global perspective is essential for SC-GHG estimates because it fully captures climate impacts that affect the United States and which have been omitted from prior U.S.-specific estimates due to methodological constraints. Examples of omitted effects include direct effects on U.S. citizens, assets, and investments located abroad, supply chains, and tourism, and spillover pathways such as economic and political destabilization and global migration. In addition, assessing the benefits of U.S. GHG mitigation activities requires consideration of how those actions may affect mitigation activities by other countries, as those international mitigation actions will provide a benefit to U.S. citizens and residents by mitigating climate impacts that affect U.S. citizens and residents. If the United States does not consider impacts on other countries, it is difficult to convince other countries to consider the impacts of their emissions on the United States. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD, DOE agrees with this assessment and, therefore, in this final rule DOE centers attention on a global measure of SC-GHG. This approach is the same as that taken in DOE regulatory analyses from 2012 through 2016. Prior to that, in 2008 DOE presented Social Cost of Carbon (SCC) estimates based on values the Intergovernmental Panel on Climate Change (IPCC) identified in literature at that time. As noted in the February 2021 SC-GHG TSD, the IWG will continue to review developments in the literature, including more robust methodologies for estimating a U.S.-specific SC-GHG value, and explore ways to better inform the public of the full range of carbon impacts. As a member of the IWG, DOE will continue to follow developments in the literature pertaining to this issue.

While the IWG works to assess how best to incorporate the latest, peer reviewed science to develop an updated set of SC-GHG estimates, it set the interim estimates to be the most recent estimates developed by the IWG prior to the group being disbanded in 2017. The estimates rely on the same models and harmonized inputs and are calculated using a range of discount rates. As explained in the February 2021 SC-GHG TSD, the IWG has recommended that agencies revert to the same set of four values drawn from the SC-GHG distributions based on three discount rates as were used in regulatory analyses between 2010 and 2016 and subject to public comment. For each discount rate, the IWG combined the distributions across models and socioeconomic emissions scenarios (applying equal weight to each) and then selected a set of four values recommended for use in benefit-cost analyses: an average value resulting from the model runs for each of three discount rates (2.5 percent, 3 percent, and 5 percent), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. The fourth value was included to provide information on potentially higher-than-expected economic impacts from climate change. As explained in the February 2021 SC-GHG TSD, and DOE agrees, this update reflects the immediate need to have an operational SC-GHG for use in regulatory benefit-cost analyses and other applications that was developed using a transparent process, peer-reviewed methodologies, and the science available at the time of that process. Those estimates were subject to public comment in the context of dozens of proposed rulemakings as well as in a dedicated public comment period in 2013.

The SC-CO_2 values used for this final rule were generated using the values presented in the 2021 update from the IWG's February 2021 TSD. The SC-CO_2 estimates from the latest interagency update are presented in DOE's TSD. For purposes

of capturing the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate to include all four sets of SC-CO_2 values, as recommended by the IWG.[19] DOE multiplied the CO_2 emissions reduction estimated for each year by the SC-CO_2 value for that year in each of the four cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the four cases using the specific discount rate that had been used to obtain the SC-CO_2 values in each case.

The SC-CH_4 and SC- N_2O values used for this final rule were generated using the values presented in the 2021 update from the IWG.[20] The SC-CH_4 and SC- N_2O estimates from the latest interagency update are presented in DOE's TSD. To capture the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate to include all four sets of SC-CH_4 and SC- N_2O values, as recommended by the IWG. DOE multiplied the CH_4 and N_2O emissions reduction estimated for each year by the SC-CH_4 and SC-N_2O estimates for that year in each of the cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the cases using the specific discount rate that had been used to obtain the SC-CH_4 and SC-N_2O estimates in each case.

[19] For example, the February 2021 TSD discusses how the understanding of discounting approaches suggests that discount rates appropriate for intergenerational analysis in the context of climate change may be lower than 3 percent.

[20] See Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990*, Washington, D.C., February 2021. Available at: *www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf* (last accessed March 17, 2021).

The estimated monetary health benefits from the reduced emissions of sulfur dioxides ("SO_2") and nitrogen oxides ("NO_X") emissions was estimated based on the latest benefit per ton estimates for the relevant sector from the EPA's Benefits Mapping and Analysis Program.[21]

DOE converted the time-series of costs and benefits into annualized values based on the present value in 2022, as shown in Table IV.1, and cumulative economic costs and benefits in Table IV.2. DOE calculated the present value using discount rates of 3 and 7 percent for consumer costs and health benefits from the reduction of SO_2 and NO_X emissions and case-specific discount rates for the value of the other greenhouse gas ("GHG") (CO_2, N_2O, and CH_4) reduction benefits. For presentational purposes, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown in Table IV.1 and Table IV.2, but the Department does not have a single central SC-GHG point estimate, and it emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates.

EEI commented that DOE should utilize metrics in its cost and benefit calculations for the backstop regulations that reflect the ongoing efforts by the electric sector on reducing emissions and deploying clean energy. EEI suggested specifically that the site to power plant conversion factor utilized in the previous modeling was outdated. (EEI, No. 61 at p. 3)

[21] Estimating the Benefit per Ton of Reducing Directly-Emitted PM2.5, PM2.5 Precursors and Ozone Precursors from 21 Sectors. *www.epa.gov/system/files/documents/2021-10/source-apportionment-tsd-oct-2021_0.pdf.*

DOE notes that in both the LBNL report cited in the December 2021 NOPR and in DOE's analysis for the final rule, the latest projections for the electric power sector from Energy Information Administration's Annual Energy Outlook 2021 were used, which reflect the ongoing and expected changes in U.S. electricity generation. In addition to addressing EEI's comment regarding the analytical baseline, this approach is conceptually consistent with DOE's approach in the March 2016 NOPR, but with updated site to power plant conversion factors.

IPI et al. submitted comments on the application of the social cost of greenhouse gases in analysis associated with the December 2021 NOPR. (IPI et al., No. 54 at pp. 1-37). They stated that DOE should expand upon its rationale for adopting a global damages valuation and for the range of discount rates it applies to climate effects. Their key comments were as follows: (1) DOE should affirm that, in its expert judgment, the working group's social cost estimates are appropriate but conservative lower bounds that omit significant categories of climate damages; (2) DOE should provide additional justification for its reliance on global climate damage valuations, while considering additional analysis of domestic effects; (3) DOE should provide additional explanation for its discount rate choices and conduct sensitivity analysis using lower rates; (4) DOE should defend against common criticisms of the working group's methodology; (5) DOE should reconsider its timeframe for costs and benefits and disclose the social cost of greenhouse gas estimates it applies to year 2051; (6) The December 2021 NOPR's high

net benefits suggest that DOE should favor early implementation of the backstop standard.

Comments (1) through (4) previously mentioned relate to the social cost of greenhouse gas emission estimates recommended by the IWG in its February 2021 TSD.

DOE used the estimates for the SC-GHG from the most recent update of the IWG in its February 2021 TSD. DOE has determined that the estimates from the February 2021 TSD (as described more below), are based upon sound analysis and provide well founded estimates for DOE's analysis of the impacts of the reductions of emissions anticipated from the final rule.

The SC-GHG estimates in the February 2021 TSD are interim values developed under E.O. 13990, for use until revised estimates of the impacts of climate change can be developed through a more comprehensive review based on the most recent science and economics. 86 FR 7037, 7040 (Jan. 25, 2021). The SC-GHG estimates used in this analysis were developed over many years, using a transparent process, peer-reviewed methodologies, the best science available at the time of that process, and with input from the public. Specifically, an IWG that included DOE, the EPA and other executive branch agencies and offices used three integrated assessment models (IAMs) to develop the SC-CO_2 estimates and recommended four global values for use in regulatory analyses. Those estimates were subject to public comment in the context of dozens of proposed rulemakings as well as in a dedicated public comment period in 2013. While DOE recognizes the potential for consumer and environmental benefits from the prohibition on

the sale of GSLs with an efficacy of less than 45 lm/W, these monetized values for the estimated emissions reductions are presented for informational purposes. DOE reiterates that because the backstop requirement in 42 U.S.C. 6295(i)(6)(A)(v) has been triggered, the statute requires DOE to prohibit sales of GSLs that do not meet the minimum efficacy of 45 lm/W. This backstop requirement is statutorily prescribed by Congress and no further analysis is required for its implementation.

Regarding comment (5) mentioned previously, DOE clarifies that it estimates costs and benefits over the lifetime of GSLs shipped between 2022 and 2051. The final year of the analysis period is 2084. The SC-GHG values applied between 2051-2070 are the same as those used by the EPA in a recent regulation strengthening greenhouse gas emission standards for automobiles.[22] DOE derived values after 2070 based on the trend in 2060-2070 in each of the four cases. DOE's technical report provides the time-series of annual SC-GHG values.

Regarding comment (6) favoring early implementation, as discussed in section II.C of this document, Congress prescribed a specific date for the backstop sales prohibition once triggered. Recognizing the practicalities associated with the immediate implementation of the 45 lm/W backstop standard for GSLs, DOE will issue guidance regarding enforcement of the standard.

[22] See EPA, Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards: Regulatory Impact Analysis, Washington, D.C., December 2021. Available at: *https://www.epa.gov/system/files/documents/2021-12/420r21028.pdf* (last accessed January 13, 2022).

3. Features of LED Lamps

DOE received several comments regarding features of LED lamps. One anonymous commenter asked if DOE accounted for the lower power factors of LED lighting, which is at 70 percent for Energy Star lamps compared to incandescent lighting which have a 100 percent power factor). (Anonymous, No. 41 at p. 1) A separate anonymous commenter asked if DOE is considering the loss of energy savings due to the "rebound effect" of less dimming of LED lighting compared to incandescent due to some LED lamps not being dimmable, others not dimming as far as incandescent lamps, or some consumers replacing dimmers with toggle switches to lower the cost of switching from incandescent lamps to non-dimmable LED lamps. (Anonymous, No. 42 at p. 1) A third anonymous commenter stated that if 10 percent of lighting in a home is on a dimmer DOE should account for the cost of replacing incandescent dimmers with LED-compatible dimmers, and further stated that such dimmers cost anywhere from $20-50 and the cost of the electrician labor is at least $100 per visit. (Anonymous, No. 40 at p. 1) Project 21 stated LED lamps cannot dim the same way Edison lamps do and result in loss of aesthetics as they cannot function in older fixtures such as antique chandeliers. (Project 21, No. 44 at pp. 1-2) The Free Market Organizations stated that LED lamps are more efficient and longer-lasting but cost more than incandescent bulbs and have inferior dimming. (Free Market Organizations, No. 65 at p. 4)

As DOE has previously noted, this is not a discretionary standards rulemaking subject to evaluation of the factors at 42 U.S.C. 6295(o). However, consistent with E.O. 12866, DOE notes that it has provided a cost-benefit analysis of implementing the 45

lm/W backstop for GSLs, which is discussed in greater detail for the public in section IV.A. Power factor is the ratio of the real power (wattage used by the lamp) to the apparent power (voltage multiplied by current drawn by the lamp circuit and what the electrical grid must withstand). A low power factor indicates that the lamp circuit is drawing more current than is being utilized. DOE's review of the market indicates that there are a substantial number of LED lamps with a power factor of 0.9 or greater. It also indicates that dimmable versions of LED lamps are readily available as well as a wide range of LED lamps with decorative shapes such as bullet, candle, flare and globe. Additionally, in response to the August 2021 Definition NOPR, NEMA commented that the rapid shift of decorative lamps (*i.e.*, T-Shape, B, BA, F, G16-1/2, G25, G30, S and M-14 shapes) to LED technology has been occurring for over 9 years and is nearing completion by market forces alone. NEMA also estimated the total market volume of decorative lamps at 950 million; and 520 million out of 665 million on mostly switch-controlled sockets have already been converted to LED technology, with 285 million incandescent decorative lamps on dimmers that would need to switch to LED technology. (NEMA, EERE-2021-BT-STD-001, No. 20[23] at pp. 3-4) NEMA's estimations indicate that a substantive conversion to LED dimmer technology has been taking place for decorative lamps and therefore, is economically feasible for consumers. Additionally, dimming of solid-state lighting is the subject of continual research and development such as dim-to-warm LED products which can mimic the dimming of incandescent lamps.[24] DOE notes that while the costs of replacing dimmers is not quantified here, the cost is not

[23] Available at *www.regulations.gov/docket/EERE-2021-BT-STD-0012*.
[24] U.S. Department of Energy, *Dim-to-Warm LED Lighting: Stress Testing Results for Select Products*, January 2020, available at *https://www.energy.gov/sites/default/files/2020/04/f73/ssl-d2w-led-stress-testing-2020.pdf*.

significant with respect to the operating costs savings of LED lamps relative to incandescent lamps. Regarding the rebound effect, DOE clarifies that it assumed no rebound in its estimate of the annualized national economic costs and benefits as a result of the implementation of the backstop (see section IV.A), consistent with the analysis in the March 2016 NOPR and in the December 2019 Final Determination.

4. Potential Health and Safety Concerns

Sherman commented that they are unable to see clearly or spend more than a few minutes under LED or fluorescent lighting without severe problems such as headaches. (Sherman, No. 35 at p. 1) Maier asserted that the backstop requirement violates the Americans with Disabilities Act ("ADA") and requested that incandescent lamps continue to be available. Maier referenced a comment on the DOE website, in which the commenter stated they have a disability and cannot tolerate LED lamps and states that such an individual is protected under the ADA to use incandescent lamps. Maier further stated that Title 2 of ADA requires that individuals be consulted before implementation of such standards and that Title 1 of ADA requires reasonable accommodation for those with disabilities. (Maier, No. 47 at p. 1)

As discussed, DOE is codifying the backstop requirement as mandated by EPCA. DOE notes that the backstop requirement does not mandate the use of a particular technology and instead prohibits the sale of lamps below a specified efficiency (*i.e.*, 45 lm/W). (42 U.S.C. 6295(i)(6)(A)(v)) ~~Additionally,~~Though the public comments do not include quantitative evidence of specific lighting technology characteristics relevant to

health, DOE has considered these public comments. DOE researched studies and other publications to ascertain any known impacts of LED lamps on human health and has not found any evidence concluding that LED lighting used for general lighting applications directly results in adverse health effects.[25] Additionally, DOE notes that the ADA does not apply to DOE for purposes of this rule, as the ADA only applies to private employers and not Federal agencies. Individuals wishing to file complaints under the ADA can visit www.ada.gov.

Glass and Walton commented regarding their concerns with the detrimental effects of LED technology in transportation applications (*e.g.*, motor vehicle lamps, street lamps, construction equipment). (Glass, No. 36 at p. 1; Walton, No. 37 at pp. 1-2)

GSLs and GSILs are covered under Part B of EPCA, which authorizes the regulation of certain consumer products. For the purpose of Part B, the definition of "consumer product" excludes products used in automobiles. (*See* 42 U.S.C. 6291(1)) Further, covered GSILs do not include those consumer products designed solely for use in recreational vehicles and other mobile equipment. (*See* 42 U.S.C. 6292(a)) Additionally, the GSL definition adopted in the 2022 Definitions Final Rule excludes lamps with lumens greater than 3,300 lumens (see section II.B of this document). Streetlamps and lighting for construction applications are generally 5,000 lumens or

[25] European Commission, "Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) Report," June 2018. Available at *https://ec.europa.eu/health/system/files/2019-02/scheer_o_011_0.pdf*; Cleveland Clinic, "Are LED Lights Damaging Your Retina?" August 9, 2019. Available at *https://health.clevelandclinic.org/are-led-lights-damaging-your-retina/*; Light Europe, "Frequently Asked Questions on alleged LED health related issues," December 2016. Available at *https://www.lightingeurope.org/images/publications/general/FAQ_on_alleged_LED_related_health_issues_-_December_2016.pdf.*

greater. Further, the definition of GSL excludes street signal lamps. As such, the lamps relevant to the concerns raised by Glass and Walton are generally not covered as GSLs and are not subject to the backstop requirement.

Sherman commented that incandescent lamps provide additional warming which can offset heating costs and can be used to keep water pipes from freezing where otherwise a space heater is used, which can be a fire hazard. (Sherman, No. 35 at p. 1) Glass stated that LED lamps are uncomfortable and also disruptive to animal and plant life. (Glass, No. 36 at p. 1)

Regarding the ability of incandescent lamps to provide heat in certain circumstances (*e.g.,* to keep pipes from freezing), DOE notes that the statutory backstop requirement applies to GSLs, which as defined exempts infrared lamps which have the primary purpose of providing heat (see section II.B of this document).

DOE researched this issue and did not identify any studies indicating that LED lamps have an adverse impact on animal and plant life.

A private citizen commented that incandescent/halogen lamps are being banned while less-efficient gas lights are still allowed to be sold in the U.S. They stated that a gas light uses 2500 British thermal units ("Btu") or 732 W to produce the same amount of light as a 60 W incandescent or a 42-43 W halogen lamp and has a continuously burning pilot light that uses energy. (Anonymous, No. 49 at p. 1)

The 45 lm/W backstop requirement is applicable to all GSLs, and is not specific to any one lighting technology such as incandescent or halogen lighting. Therefore, the sale of any lamp that meets the definition of a GSL and has an efficacy less than 45 lm/W will be prohibited.

III. Conclusion

DOE has determined that the statutory 45 lm/W backstop requirement that applies to GSLs in 42 U.S.C. 6295(i)(6)(A)(v) has been triggered. This final rule codifies the backstop requirement at 10 CFR 430.32.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866

This final rule is an economically significant regulatory action under E.O. 12866, "Regulatory Planning and Review." 58 FR 51735 (October 4, 1993). Accordingly, this action was subject to review by OIRA in the Office of Management and Budget ("OMB"). Pursuant to section 6(a)(3)(C) of the Order, DOE has provided to OIRA an assessment, including the underlying analysis, of benefits and costs anticipated from the regulatory action, together with, to the extent feasible, a quantification of those costs. This assessment can be found in DOE's technical report that accompanies this rulemaking and the methodology is summarized in section II.D.2 of this document.

Table IV.1 Summary of Annualized Costs and Benefits, 2022-2051

	Million 2020$/year		
	Primary Estimate	**Low-Net-Benefits Estimate**	**High-Net-Benefits Estimate**
3% discount rate			
Consumer Operating Cost Savings	2,955.1	2,788.0	3,128.8
Climate Benefits*	591.0	571.1	606.0
Health Benefits**	1,100.5	1,063.8	1,128.2
Total Benefits†	4,646.6	4,422.9	4,863.0
Consumer Incremental Product Costs‡	148.9	150.9	145.0
Net Benefits	4,497.7	4,272.0	4,718.1
7% discount rate			
Consumer Operating Cost Savings	2,864.5	2,725.3	3,010.0
Climate Benefits*	591.0	571.1	606.0
Health Benefits**	960.8	932.4	982.3
Total Benefits†	4,416.4	4,228.8	4,598.4
Consumer Incremental Product Costs‡	177.6	180.3	173.0
Net Benefits	4,238.8	4,048.5	4,425.3

Note: This table presents the costs and benefits associated with all GSLs shipped in 2022−2051. These results include benefits to consumers which accrue after 2051 from the products shipped in 2022−2051. This analysis presents costs and benefits assuming compliance beginning in 2022. As DOE has explained, DOE will release enforcement guidance simultaneously with this rulemaking. If significant compliance behavior changes result from enforcement discretion, both benefits and costs could be reduced for the relevant years, although DOE expects the net benefits will not be significantly changed.

* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO2), methane (SC-CH4), and nitrous oxide (SC-N2O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate). Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See the accompanying technical report for details.

** Health benefits are calculated using benefit-per-ton values for NO_X and SO_2. DOE is currently only monetizing (for SO_2 and NO_X) $PM_{2.5}$ precursor health benefits and (for NO_X) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct $PM_{2.5}$ emissions. The health benefits are presented at real discount rates of 3 and 7 percent.

† Total and net benefits include consumer, climate and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the Federal government's appeal of that injunction or a further court order. The preliminary injunction enjoined the Federal government from relying on the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working

Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits in accordance with applicable Executive orders. ‡ Costs include incremental equipment costs as well as installation costs.

Table IV.2 Summary of Cumulative Monetized Economic Benefits and Costs for All GSLs, 2022-2051

	Billion 2020$
3% discount rate	
Consumer Operating Cost Savings	59.7
Climate Benefits*	11.9
Health Benefits**	22.2
Total Benefits†	93.8
Consumer Incremental Product Costs‡	3.0
Net Benefits	90.8
7% discount rate	
Consumer Operating Cost Savings	38.0
Climate Benefits*	11.9
Health Benefits**	12.8
Total Benefits†	62.7
Consumer Incremental Product Costs‡	2.4
Net Benefits	60.4

Note: This table presents the costs and benefits associated with all GSLs shipped in 2022−2051 using a present year of 2022. These results include benefits to consumers which accrue after 2051 from the products shipped in 2022−2051.
* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO_2), methane (SC-CH_4), and nitrous oxide (SC-N_2O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate). Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate.
** Health benefits are calculated using benefit-per-ton values for NO_X and SO_2. DOE is currently only monetizing (for SO_2 and NO_X) $PM_{2.5}$ precursor health benefits and (for NO_X) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct $PM_{2.5}$ emissions. The health benefits are presented at real discount rates of 3 and 7 percent.
† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the Federal government's appeal of that injunction or a further court order. The preliminary injunction enjoined the Federal government from relying on the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its

approach prior to the injunction and present monetized benefits in accordance with applicable Executive orders. ‡ Costs include incremental equipment costs as well as installation costs.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq*.) requires preparation of an initial regulatory flexibility analysis ("IRFA") and a final regulatory flexibility analysis ("FRFA") for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by E.O. 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (Aug. 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website (*energy.gov/gc/office-general-counsel*).

DOE reviewed this final rule under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19, 2003. DOE is revising the Code of Federal Regulations to incorporate and implement the backstop requirement for general service lamps that Congress prescribed in EPCA. Because DOE is not imposing additional costs beyond those required by statute, DOE concludes and certifies that this final rule has no significant economic impact on a substantial number of small entities and the preparation of a FRFA is not warranted.

C. Review Under the Paperwork Reduction Act

This final rule imposes no new information or record keeping requirements. Accordingly, Office of Management and Budget clearance is not required under the Paperwork Reduction Act. 44 U.S.C. 3501 *et seq*.

D. Review Under the National Environmental Policy Act of 1969

DOE has analyzed this regulation in accordance with the National Environmental Policy Act (NEPA) and DOE's NEPA implementing regulations (10 CFR part 1021). DOE's regulations include a categorical exclusion for rulemakings interpreting or amending an existing rule or regulation that does not change the environmental effect of the rule or regulation being amended. 10 CFR part 1021, subpart D, appendix A5. DOE has completed the necessary review under NEPA and has determined that this rulemaking qualifies for categorical exclusion A5 because it is amending a rule that does not change the environmental effect of the rule and otherwise meets the requirements for application of a categorical exclusion. *See* 10 CFR 1021.410. Therefore, DOE has made a CX determination for this rulemaking, and DOE does not need to prepare an Environmental Assessment or Environmental Impact Statement for this final rule. DOE's CX determination for this final rule is available at *energy.gov/nepa/categorical-exclusioncx-determinations-cx*.

E. Review Under Executive Order 13132

E.O. 13132, "Federalism," 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive order requires

agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this final rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this proposed rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. 42 U.S.C. 6297. Therefore, no further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, "Civil Justice Reform," imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that executive

agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final rule meets the relevant standards of E.O. 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 ("UMRA") requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Pub. L. 104-4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of $100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a "significant intergovernmental mandate," and requires an agency plan for giving notice and

opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE's policy statement is also available at *energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.*

This final rule codifies the sales prohibition of GSLs with an efficacy of less than 45 lm/W prescribed in 42 U.S.C. 6295(i)(6)(A)(v). As this final rule would incorporate requirements specifically set forth in law, an assessment under UMRA is not required and has not been conducted.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105-277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to E.O. 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," 53 FR 8859 (March 18, 1988), DOE has determined that this rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516, note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M-19-15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at *www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf*. DOE has reviewed this final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

E.O. 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any significant energy action. A "significant energy action" is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any

adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has concluded that this regulatory action is not a significant energy action because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this final rule.

L. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to its effective date. The report will state that it has been determined that the rule is a "major rule" as defined by 5 U.S.C. 804(2).

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Reporting and recordkeeping requirements, Small businesses.

Signing Authority

This document of the Department of Energy was signed on April 26, 2022, by Kelly J. Speakes-Backman, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on April 26, 2022.

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Kelly J. Speakes-Backman
Principal Deputy Assistant Secretary for
Energy Efficiency and Renewable Energy

For the reasons set forth in the preamble, DOE amends part 430 of chapter II of title 10 of the Code of Federal Regulations, as set forth below:

PART 430 - ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291-6309; 28 U.S.C. 2461 note.

2. Amend §430.32 by:

a. Revising the introductory text to paragraphs (n)(5), (n)(6), (u)(1), (x)(1), (bb)(1) and (2);

b. Adding paragraph (dd); and

c. Revising paragraphs (x)(2) and (3).

The revisions and additions read as follows:

§430.32 Energy and water conservation standards and their compliance dates.

* * * * *

(n) * * *

(5) Subject to the sales prohibition in paragraph (dd) of this section, and except as provided in paragraph (n)(6) of this section, each of the following incandescent reflector lamps manufactured after November 1, 1995, shall meet or exceed the lamp efficacy standards shown in the table:

* * * * *

(6) Subject to the sales prohibition in paragraph (dd) of this section, each of the following incandescent reflector lamps manufactured after July 14, 2012, shall meet or exceed the lamp efficacy standards shown in the table:

* * * * *

(u) * * *

(1) Medium Base Compact Fluorescent Lamps. Subject to the sales prohibition in paragraph (dd) of this section, a bare or covered (no reflector) medium base compact fluorescent lamp manufactured on or after January 1, 2006, must meet the following requirements:

* * * * *

(x) * * *

(1) Subject to the sales prohibition in paragraph (dd) of this section, the energy conservation standards in this paragraph apply to general service incandescent lamps:

* * * * *

(2) Subject to the sales prohibition in paragraph (dd) of this section, each candelabra base incandescent lamp shall not exceed 60 rated watts.

(3) Subject to the sales prohibition in paragraph (dd) of this section, each intermediate base incandescent lamp shall not exceed 40 rated watts.

* * * * *

(bb) * * *

(1) Subject to the sales prohibition in paragraph (dd) of this section, rough service lamps manufactured on or after January 25, 2018 must:

* * * * *

(2) Subject to the sales prohibition in paragraph (dd) of this section, vibration service lamps manufactured on or after January 25, 2018 must:

* * * * *

(dd) *General service lamp*. Beginning [**INSERT DATE ~~60~~75 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***] the sale of any general service lamp that does not meet a minimum efficacy standard of 45 lumens per watt is prohibited.