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Additional submitted attachment is included below.

National Electrical Manufacturers Association

PHILIP A. SQUAIR
Vice President, Government Relations

October 7, 2019

Online via:
https://www.energy.ca.gov/appliances/2019-AAER-04/ Docket Number 19-AAER-04

Commissioner Andrew McAllister
Mr. Patrick Saxton
California Energy Commission
Docket Unit, MS-4
Docket No. 19-AAER-04
1516 Ninth Street
Sacramento, CA 95814-5512

NEMA Comments on CEC Notice of Proposed Action General Service Lamps (Expanded Scope) 19-AAER-04

Dear Commissioner McAllister and Mr. Saxton:

As the leading trade association representing the manufacturers of electrical and medical imaging equipment, the National Electrical Manufacturers Association (NEMA) provides the attached comments in response to the CEC Request for Comments on the Draft Staff Report Analysis of General Service Lamps (Expanded Scope). These comments are submitted on behalf of NEMA Member companies.

The National Electrical Manufacturers Association (NEMA) represents more than 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems across 56 product sections. Our combined industries account for 370,000 American jobs in more than 6,100 facilities covering every state. Our industry produces $124 billion electrical equipment and medical imaging shipments per year with $42 billion exported. Please find our detailed comments attached.

We welcome your careful consideration of this information and we look forward to the Commission regularly seeking constructive interaction with industry. If you have any questions on these comments, please contact Alex Boesenberg of NEMA at 703-841-3268 or alex.boesenberg@nema.org.

Sincerely,

Philip Squair
Vice President, Government Relations
National Electrical Manufacturers Association

NEMA COMMENTS

The National Electrical Manufacturers Association (NEMA) takes this opportunity to comment to the California Energy Commission (CEC) on the 45-day language that would revise the definition of General Service Lamps in Title 20 and other definitions as proposed in Docket Number 19-AAER-04.

Executive Summary

The California Energy Commission (CEC) proposes to add a variety of definitions in a new paragraph (2) to Title 20, §1602(k) including a new definition of "general service lamp" under the heading "General Service Lamps Sold On or After January 1, 2020." The Commission is also proposing to retain the existing definition in subsection (k) under a new heading "(1) General Service Lamps Sold Before January 1, 2020, and All Other Lamps."

As explained in the Initial Statement of Reasons that accompanied the proposed change in the definition, this change in definition of general service lamp and other lamps is necessary to (1) "align those definitions established in two DOE final rules published in the Federal Register on January 19, 2017" and (2) "eliminate confusion between lamp types sold before January 1, 2020, and those sold after the effective date of the federal definitions and standards."

> It is necessary for the Energy Commission to add new definitions related to general service lamps sold on or after January 1, 2020, to align with those definitions established in two DOE final rules published in the Federal Register on January 19, 2017. The definitions expand the number of light bulbs subject to the 45 lumen-per watt efficacy standard in federal law that applies nationwide to general service lamps sold on or after January 1, 2020 (42 U.S.C. § 6295(i)(6)(A)(v)). The new definitions are near verbatim copies of those definitions published in the Federal Register on January 19, 2017 and are added to eliminate confusion between lamp types sold before January 1, 2020, and those sold after the effective date of the federal definitions and standards.
>
> It is necessary to move some definitions into subsection (a) because those definitions apply to multiple categories of appliances.
>
> It is necessary to divide subsection (k) into subsections (k)(1) and (k)(2) to provide clarity for when specific definitions related to general service lamps, and other lamps, become effective. It is necessary to add and divide these definitions by effective date to ensure that the terms and effective dates used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations.

CEC Staff, *Initial Statement of Reasons* at 4, Docket No. 19-AAER-04 (Aug. 16, 2019).

NEMA submits that this explanation compels the withdrawal of the proposed change in definition as neither of the above cited rationales are true, in large part due to a September 5,

2019 Final Rule published by the U.S. Department of Energy (DOE) withdrawing the Final Rules published on January 19, 2017.[1]

The DOE decision to withdraw the 2017 definition of general service lamps was made after a notice and comment rulemaking that led the Secretary to conclude that the January 19, 2017 definition ignored the "clear" and "plain" reading of the definition of general service lamp in EPCA; had misconstrued the Secretary's authority to discontinue exemptions for certain incandescent lamps in a manner that was not consistent with the best reading of the statute; that shipments in virtually every category of incandescent lamp had declined significantly since 2011; and that DOE had exceeded the authority granted to the Secretary by Congress in the Energy Independence and Security Act of 2007 (EISA-2007) in promulgating the 2017 definition. 84 Fed.Reg. 46661 (Sept. 5, 2019).

For the reasons explained below, CEC must also withdraw its proposal on grounds of federal preemption. And in light of pending DOE regulatory proceedings, the CEC will likely have to consider whether its current rules for LED lamps are preempted as well. Finally, CEC analysis of the energy savings that it expects from its proposed course of action vastly inflates the energy savings as its estimates of lamp sockets and lamp shipments significantly exaggerate those sockets and shipments.

[1] In 2018, in another docket wherein the CEC proposed to expand the definition of general service lamp, NEMA noted that the DOE was reviewing its 2017 definition of general service lamp and recommended to the CEC that it would be prudent to wait and see if the Secretary's review resulted in any change before contemplating any revision of Title 20. NEMA Comments at 2 (Sept. 17, 2018), Docket No. 17-AAER-07. The Initial Statement of Reasons in this docket inexplicably leaves any reference to the fact that on February 11, 2019, DOE published a Notice of Proposed Rule that would withdraw the 2017 definitions with an effective date of January 1, 2020 that were not yet effective and retain the definition of general service lamp based on the congressional text in EPCA. 84 FR 3120 (Feb. 11, 2019). CEC staff participated in this rulemaking and had knowledge of the DOE proposed action.

1. Stated Purpose: Aligning the Federal and CEC Definition of General Service Lamp

The current DOE definition of General Service Lamp will continue to be the definition of General Service Lamp on January 1, 2020. That definition reads as follows:

> General service lamp includes general service incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, organic light-emitting diode lamps, and any other lamps that the Secretary determines are used to satisfy lighting applications traditionally served by general service incandescent lamps; however, this definition does not apply to any lighting application or bulb shape excluded from the "general service incandescent lamp" definition, or any general service fluorescent lamp or incandescent reflector lamp.

10 C.F.R. §430.2 (2018). This mirrors Congress' definition of general service lamp at 42 U.S.C. §6291(30) (BB). The lighting applications and bulb shapes excluded from the definition of "general service incandescent lamp" include:

> (1) An appliance lamp;
> (2) A black light lamp;
> (3) A bug lamp;
> (4) A colored lamp;
> (5) An infrared lamp;
> (6) A left-hand thread lamp;
> (7) A marine lamp;
> (8) A marine signal service lamp;
> (9) A mine service lamp;
> (10) A plant light lamp;
> (11) A reflector lamp;
> (12) A rough service lamp;
> (13) A shatter-resistant lamp (including a shatter-proof lamp and a shatter-protected lamp);
> (14) A sign service lamp;
> (15) A silver bowl lamp;
> (16) A showcase lamp;
> (17) A 3-way incandescent lamp;
> (18) A traffic signal lamp;
> (19) A vibration service lamp;
> (20) A G shape lamp (as defined in ANSI C78.20) (incorporated by reference; see §430.3) and ANSI C79.1-2002 (incorporated by reference; see §430.3) with a diameter of 5 inches or more;
> (21) A T shape lamp (as defined in ANSI C78.20) (incorporated by reference; see §430.3) and ANSI C79.1-2002 (incorporated by reference; see §430.3) and that uses not more than 40 watts or has a length of more than 10 inches; and
> (22) A B, BA, CA, F, G16-1/2, G-25, G30, S, or M-14 lamp (as defined in ANSI C79.1-2002) (incorporated by reference; see §430.3) and ANSI C78.20 (incorporated by reference; see §430.3) of 40 watts or less.

10 C.F.R. §430.2 (2018). This list mirrors the lamps whose applications and bulb shapes are not included in Congress' definition of general service incandescent lamp at 42 U.S.C. §6291(30)(D)(ii).

To achieve the CEC stated goal of aligning the Title 20 definition with the federal definition effective on January 1, 2020, the CEC can continue to rely on the existing definition of "Federally regulated general service lamp" found in Title 20, which matches the definition adopted by the Secretary of Energy and the U.S. Congress:

> "Federally regulated general service lamp" includes:
> (1) general service incandescent lamps;
> (2) compact fluorescent lamps;
> (3) general service light-emitting diode (LED or OLED) lamps; and
> (4) any other lamps that the Secretary determines are used to satisfy lighting applications traditionally served by general service incandescent lamps; but does not include any:
> (A) lighting application or bulb shape excluded from the definition of "federally regulated general service incandescent lamp;" or;
> (B) general service fluorescent lamp or incandescent reflector lamp.

The first CEC rationale for the proposed change supports no change in the definitions and therefore there is no need for two paragraphs in Title 20, §1602(k). The existing federal and CEC definitions are aligned.

Stated Purpose 2: "Eliminate confusion between lamp types sold before January 1, 2020, and those sold after the effective date of the federal definitions and standards

The proposed change would result in more confusion for regulated parties and the public and would fail in eliminating that confusion. This is primarily, but not exclusively, a consequence of the fact that that the CEC proposed definition is not aligned with the federal definition. The Initial Statement of Reasons states: "Regulations properly and accurately reflect current federal law to avoid confusion and to provide regulated parties and consumers more clarity, accessibility, and regulatory certainty with respect to the federal regulatory language in the Appliance Efficiency Regulations." CEC Staff, Initial Statement of Reasons at 6 (Aug. 16, 2019). NEMA agrees with this line of thought, but it is not factually accurate as applied to the proposed 45-day language amending Title 20, §1602(k) and that fact warrants the withdrawal of the 45-day language.

The confusion is apparent in at least two principal contexts: (1) the proposed inclusion of the phrase "general lighting applications" as a replacement for the federal definition's phrase "lighting applications traditionally served by general service incandescent lamps;" and (2) the impact of federal preemption of state regulation of "covered products" under the Energy Policy and Conservation Act, 42 U.S.C. §6297(b) and (c).

(A) The phrase "general lighting applications" has no meaning for general service lamps

A key feature of the DOE 2017 effort to re-write the congressional definition of general service lamp was the substitution of the phrase "used in applications traditionally served by general service incandescent lamps" (see 42 U.S.C. §6297(30)(BB)(i)(IV), 10 CFR 430.2, and Title 20,

1602(k)) with the phrase "general lighting applications." This change alone is the source of much confusion and error in the DOE 2017 definition, and the CEC 45-day language proposes to mimic this confusion and error. It changes the meaning of the statute (and congressional intent as reflected in the words Congress chose to use). A CEC proposal to include this term would likewise generate considerable confusion.

To overcome statutory text that DOE now recognizes as the "clear" and "plain" meaning of the words Congress used in EPCA excluding certain specialty lamps from the definition and scope of general service incandescent lamp and general service lamp, 84 Fed.Reg. at 46666-67 (Sept. 5, 2019), the DOE January 2017 definitions Rule inappropriately borrowed terms from other parts of the statute that had different meanings and applied those terms to the general service lamp definition where Congress did not. DOE then exceeded its authority by re-writing the definition of general service lamp in a way that conflicts with the text and structure of the Act.

The statute provides no authority for the Secretary to add lamps to the definition of general service incandescent lamp. The statute does provide the Secretary with limited authority to add lamps to the definition of general service lamp, provided that those "other lamps" are "used in applications traditionally served by general service incandescent lamps." 42 U.S.C. §6291(30)(BB)(i)(IV). Given that the clear language of the definitions expressly excludes lamps with certain bulb shapes and lamps used in certain applications, and given further that Congress has expressly provided for other regulatory remedies for the lamps that are excluded from the definition that the Secretary must respect, the text and structure of the statute demonstrate that this authority to add other lamps is limited.[2]

In the January 2017 definitions rule, DOE undertook an effort to work around the textual limitations in the statute and re-write statutory text by adopting a new definition of general service lamp that was different than the definition that Congress enacted in 2007. The first step was to eliminate the statutory requirement that the other lamps be "used in applications traditionally served by general service incandescent lamps." The January 2017 final rule adopted a definition of general service lamp that expands the definitional scope far beyond what Congress specified and authorized.

> **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 of 277 volts for integrated lamps (as defined in this section), or is able to operate at any voltage for non-integrated lamps (as defined in this section); 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 include, but are not limited to, general service

[2] DOE also explained based on evidence in the rulemaking record that the lamps the January 2017 Final Rule tried to horseshoe into the definition of general service lamp were not used in applications traditionally served by general service incandescent lamps and they are used in different applications. 84 Fed.Reg. 46661, 46666, 46668 (Sept. 5, 2019).

incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, and general service organic light-emitting diode lamps. 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 (incorporated by reference; see § 430.3);
(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 (incorporated by reference; see § 430.3), 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 (as defined in this section) that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3) 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 (incorporated by reference; see § 430.3);
(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 (incorporated by reference; see § 430.3), nominal overall length less than 12 inches, and that are not compact fluorescent lamps (as defined in this section);
(26) Traffic signal lamps.

82 F.R. at 7321-22 (January 19, 2017) as amended by 82 F.R. at 7322 (January 19, 2017) (removing incandescent reflector lamps from the lamps expressly excluded by Congress).

The highlighted text from the January 2017 general service lamp definition Final Rule shows that the phrase “used in applications traditionally served by general service incandescent lamps” has been replaced by “used in general lighting applications,” a phrase that means something

radically different than the statutory phrase in Congress' definition of general service lamp. The DOE construction effectively wrote the congressional text out of the law and rewrote 42 U.S.C. §6291(30)(BB)(i)(IV) as follows to secure a different meaning:

> (IV) any other lamps the Secretary determines are used ~~to satisfy lighting applications traditionally served by general service incandescent lamps~~ in general lighting applications.

The statutory text would require the Department to identify the applications in which general service incandescent lamps are traditionally used and see if "other lamps" are also used in those applications as well. The text as re-written by DOE in the January 2017 Final Rule avoids the statutory inquiry and requires the Secretary to consider factors --- overall illumination --- other than that Congress told the Secretary to consider. This led DOE to expand the definition to include lamps with bulb shapes that Congress clearly said were "not included" in "general service lamps:" lamps with bulb shapes that were unlike the bulb shape of a general service incandescent lamp and would not be used in applications traditionally served by general service incandescent lamps; lamps with screw bases and pin-bases that are used in sockets where general service incandescent lamp applications are not used; it led to the expansion to non-household voltages beyond the 110-130 household voltage where general service incandescent lamp applications are not found; it led to the expansion of the lumen range to include higher lumen lamps that are not used in applications served by general service incandescent lamps.

Without question, the two lamps specifically identified by Congress in the definition of general service lamp in addition to the general service incandescent lamp --- compact fluorescent lamp and general service LED lamp --- are used in applications traditionally served by general service incandescent lamps. The statutory definition of medium base compact fluorescent lamp, for example, expressly states that it is "designed as a direct replacement for the general service incandescent lamp." 42 U.S.C. §6291(S)(i). These three lamps were the model for the general service lamps, and the lengthy list of lamps "not include[d] in the definition were specific examples of lamps that are clearly the opposite.

The phrase "general lighting applications" was enacted into law in a completely different section of EISA-2007 dealing with "metal halide lamp fixtures."[3] *See* Pub.L. 110-140, 121 STAT. 1492, 1592; 42 U.S.C. §6291(61) and (64). The term "general lighting application" was defined in EISA to mean "lighting that provides an interior or exterior area with overall illumination." 42 U.S.C. §6291(61). It is then incorporated in the definition of metal halide lamp fixture as follows: "The term 'metal halide lamp fixture' means a light fixture for general lighting application designed to be operated with a metal halide lamp and a ballast for a metal halide lamp." 42 U.S.C. §6291(64). A metal halide lamp fixture is not, and bears no resemblance to, a standard general service incandescent light bulb. Congress has defined it as "a high intensity discharge lamp in which the major portion of the light is produced by radiation of metal halides and their products of dissociation, possibly in combination with metallic vapors." 42 U.S.C. §6291(63). In

[3] These terms were used in an entirely different Section 324 ("Metal Halide Lamp Fixtures") of EISA-2007, not Section 321 which addresses general service incandescent and general service lamps ("Efficient Light Bulbs").

contrast, the general service incandescent lamp is an “incandescent lamp” in which “light is produced by a filament heated to incandescence by an electric current.” 42 U.S.C. §6291(30)(C).

In a 2014 rulemaking, DOE identified the specific uses of metal halide lamp fixtures in warehouses, street lighting, stadium lighting and search lights. 79 Fed.Reg. 7746, 7755, 7762 (February 10, 2014) (metal halide lamp fixtures “are commonly used in warehouse, street, and general commercial lighting. High-wattage (greater than 500 W) lamps are used in searchlights, stadiums, and other applications that require powerful white light.”). These are not applications traditionally served by general service incandescent lamps. And in this context the term general lighting application ---- “lighting that provides an interior or exterior area with overall illumination” --- makes perfect sense as high lumen lighting that covers a broad area like large indoor areas such as a warehouse, or large outdoor areas such as a parking lot, roadway or baseball stadium. The term’s application to light bulbs used in desk lamps, pendant lamps, garages, and small household rooms is entirely misplaced, but DOE in January 2017 substituted it for Congress’ statutory text without examining the applications traditionally served by general service incandescent lamps.

Despite the fact that Congress never mentioned “overall illumination” in the definition of general service lamp, the DOE reference to “overall illumination” through the re-write of the statutory definition became legally meaningful to DOE. DOE stated that it was regulating incandescent reflector lamps as general service lamps because they were “capable of providing overall illumination.” 82 F.R. at 7293 (January 19, 2017). DOE stated it was treating T-shape lamps as general service lamps because they were “capable of providing overall illumination,” 82 F.R. at 7294 (January 19, 2017), and said the same thing about globe and candle shape lamps, 82 F.R. at 7295 (January 19, 2017), and shatter-resistant lamps, 82 F.R. at 7294 (January 19, 2017).

DOE did not define what it meant by overall illumination, although in responding to comments DOE stated that it “considers the term ‘‘overall illumination’’ to be similar in meaning to the term ‘‘general lighting’’ as defined in the industry standard ANSI/IES RP–16–10 (hereafter ‘‘RP–16’’). RP–16 states that ‘‘general lighting’’ means lighting designed to provide a substantially uniform level of illuminance throughout an area, exclusive of any provision for special local requirements.” 82 F.R. at 7303 (January 19, 2017). In fact, the terms are not similar at all. The definition in ANSI/IES RP-16 says that general lighting means lighting designed to provide a substantially uniform level of illuminance throughout an area. It does not refer to “overall illumination.” Uniform illumination and overall illumination are not similar concepts.

Reflector lamps do not provide a uniform amount of lighting throughout an area, but just the opposite. As the Rensselaer Lighting Research Center explained in a 2007 paper on residential directional lighting, “Whereas general (or ambient) lighting provides a uniform amount of lighting throughout an area, directional lighting provides illumination on a work surface (such as a desk or countertop), on an object (such as artwork), or in a particular direction. Directional lighting is typically used to provide a higher light level [i.e. non-uniform light] than that of the surrounding area and can be used alone or as a complement to ambient illumination.” *A Guide to*

Residential Directional Lighting at 3 (RPI Lighting Research Center 2007).[4] What this demonstrates is that --- for DOE --- "overall illumination" meant whatever DOE subjectively wanted it to mean, with no objective criteria to support the Secretary's determination. This deviates from the more objective approach demanded by Congress in the statute by making the lighting applications traditionally served by the general service incandescent lamp the benchmark referent for "other lamps" that the Secretary could identify as general service lamps. DOE exhibited no expertise about lighting in floating the IES RP-16 standard in its Final Rule as authority on this subject.

Many of the other incandescent lamps DOE inserted into the definition of general service lamp are defined in terms of their low wattage (40 watts or less), which means that they only emit light at low lumen levels. These include T-shape lamps, candle shape lamps, and globe lamps. See 42 U.S.C. §6291(30)(D)(ii)(XXI and XXII)(uses not more than 40 watts). These dim light bulbs only provide illumination to a very small area. DOE never explained why a statutory term that specific legislative application to metal halide lamp fixtures had --- high lumen lighting fixtures used in large areas like warehouses, parking lots, roadways and sporting event stadiums --- was appropriate to use for household lamps used to illuminate small areas.

The importance of this history behind the DOE 2017 error in statutory interpretation for the CEC is that the introduction of terms like "overall illumination" into the general service lamp definition creates a hornet's nest of confusion and ambiguity. This ill-serves the second stated purpose of the CEC to eliminate confusion.

(B) The impact of federal preemption

A cornerstone of EPCA is section 6297, expressly providing for federal preemption of state energy conservation regulations subject to congressionally-specified exceptions in the statute. Federal preemption applies both before[5] and after[6] a federal energy conservation standard is effective. In the absence of a statutory exception, federal preemption applies even if the Secretary of Energy determines not to prescribe a standard because a standard cannot be economically justified, is not technologically feasible, or will not result in significant energy savings.[7] Courts have recognized that section 6297(b) and (c) represent a "broad preemption provision."[8] "The reason for the broader preemption of energy conservation standards,"

[4] http://www.lrc.rpi.edu/programs/solidstate/assist/pdf/directional1.pdf

[5] See 42 U.S.C. §6297(b).

[6] See 42 U.S.C. §6297(c).

[7] *Natural Resources Defense Council v. Herrington*, 768 F.2d 1355, 1363 (D.C. Cir. 1985) ("A determination that no standard is warranted for a particular appliance, like the issuance of a mandatory standard, preempts any state-law efficiency requirements for the appliance, although the state may then apply to the Secretary for an exemption from the preemption provision.").

[8] *Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque*, 2008 U.S. Dist. LEXIS 106706 (D.N.M. 2008).

explained the U.S. Court of Appeals for the Ninth Circuit, "was to counteract the systems of separate state appliance standards that had emerged as a result of the DOE's 'general policy of granting petitions from States requesting waivers from preemption,' which caused appliance manufacturers to be confronted with 'a growing patchwork of differing State regulations which would increasingly complicate their design, production and marketing plans.'"[9]

Section 6297(b) and (c) provide that "unless" there is an express exception to federal preemption in the federal statute, beginning March 17, 1987, State energy conservation regulations concerning energy efficiency or energy use for a covered product under the Energy Policy and Conservation Act (EPCA) are "no[t] . . . effective." State regulations are void if there is not an exception to preemption specified in EPCA.[10]

Federal preemption applies to what EPCA calls a "covered product," a product to which Congress has legislated a federal energy conservation standard in EPCA or directed the Secretary of Energy to prescribe federal energy conservation standards by rulemaking. The scope of a covered product --- and hence the scope of federal preemption --- is determined by the definition of the product that Congress has assigned to it in the statute or the definition that the Secretary of Energy has assigned to it in a regulatory rulemaking.

In the case of lighting products, the covered products include:

- General service lamps such as the general service incandescent lamp, medium screw base compact fluorescent lamp, and the general service LED lamp.
- Intermediate base incandescent lamps and candelabra base incandescent lamp
- Incandescent reflector lamp
- Medium screw base rough service incandescent and vibration service incandescent lamps
- General service fluorescent lamp and high intensity discharge lamp
- Fluorescent lamp ballast
- Metal halide lamp fixture, illuminated exit sign, torchieres, traffic signal modules and pedestrian modules

The scope of federal preemption for these lighting products turns on the scope of the covered product as defined by Congress in EPCA, or by the Secretary of Energy. Table I below sets out

[9] *Air Conditioning & Refrigeration Inst. v. Energy Res. Conservation & Dev. Comm'n*, 410 F.3d 492, 500 (9th Cir. 2005).

[10] The term "effective" means, in this context, "being in effect." *See Teton Cnty. Republican Cent. Comm. v. Hansen*, 2016 U.S. Dist. LEXIS 53000 at * (D. Id. 2016) (quoting Merriam-Webster Dictionary). "The ordinary meaning of "effect" in this context is: "the quality or state of being operative." Webster's Third New Int'l Dictionary 724 (unabridged. 1993). In turn, "operative" in context means: "having the power of acting: exerting force or influence." Webster's Third New Int'l Dictionary 1581 (unabridged ed. 1993)." *In re Wedblad*, 2012 Bankr. LEXIS 303 at *11 (D. Or. 2012). In short, State regulations concerning energy efficiency or energy use for a covered product are not "operative" and have "no power of exerting force or influence" unless a congressionally specified exception exists or a State has obtained a waiver from preemption from DOE.

the federal definitions for these lighting covered products, which are found at 42 U.S.C. §6291 and 10 C.F.R. §430.2:

TABLE 1
FEDERALLY-COVERED LIGHTING PRODUCTS UNDER ENERGY POLICY AND CONSERVATION ACT
FOR WHICH STATE REGULATION IS GENERALLY VOID

Covered Product		
LAMPS	**Definition**	**An Example**
General service incandescent lamp	"a standard incandescent or halogen type lamp that-- (I) is intended for general service applications; (II) has a medium screw base; (III) has a lumen range of not less than 310 lumens and not more than 2,600 lumens; and (IV) is capable of being operated at a voltage range at least partially within 110 and 130 volts." **Specifically excluding over 20 types of other medium base incandescent lamps from definition**.[11]	
Intermediate base incandescent lamp	"a lamp that uses an intermediate screw base as described in ANSI C81.61-2006, Specifications for Electric Bases."	
Candelabra base incandescent lamp	"a lamp that uses candelabra screw base as described in ANSI C81.61-2006, Specifications for Electric Bases."	
Medium base rough service incandescent lamp	"a lamp that -- (1) Has a minimum of 5 supports with filament configurations that are C-7A, C-11, C-17, and C-22 as listed in Figure 6-12 of the IESNA Lighting Handbook (incorporated by reference; see § 430.3), or similar configurations where lead wires are not counted as supports; and (2) Is designated and marketed specifically for "rough service' applications, with (i) The designation appearing on the lamp packaging; and (ii) Marketing materials that identify the lamp	 **NOTE: Wattage now capped at 40 watts; may only be sold in packages of one.**

[11] Definition does not include --- "(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."

	as being for rough service."	
Medium base vibration service incandescent lamp	"a lamp that -- (1) Has filament configurations that are C-5, C-7A, or C-9, as listed in Figure 6-12 of the IESNA Lighting Handbook (incorporated by reference; see § 430.3) or similar configurations; (2) Has a maximum wattage of ~~60~~ watts; (3) Is sold at retail in packages of ~~2~~ lamps or less; and (4) Is designated and marketed specifically for vibration service or vibration-resistant applications, with -- (i) The designation appearing on the lamp packaging; and (ii) Marketing materials that identify the lamp as being vibration service only."	 **Note: Wattage now capped at 40 watts; may only be sold in packages of one.**
Incandescent reflector lamp	"Any lamp (commonly referred to as a reflector lamp) which is not colored or designed for rough or vibration service applications, that contains an inner reflective coating on the outer bulb to direct the light, an R, PAR, ER, BR, BPAR, or similar bulb shapes with E26 medium screw bases, a rated voltage or voltage range that lies at least partially within 115 and 130 volts, a diameter which exceeds 2.25 inches, and has a rated wattage that is 40 watts or higher."	
Medium base compact fluorescent lamp	"an integrally ballasted fluorescent lamp with a medium screw base and a rated input voltage of 115 to 130 volts and which is designed as a direct replacement for a general service incandescent lamp." **Specifically excluding specialty lamps from definition**.[12]	
General service fluorescent lamp	"any *fluorescent lamp* which can be used to satisfy the majority of fluorescent lighting applications, but does not include any lamp designed and marketed for the following non-general application:[13]" *Fluorescent lamp*: "a low pressure mercury electric-discharge source in which a fluorescing	

[12] Definition does not include --- "(I) any lamp that is-- (aa) specifically designed to be used for special purpose applications; and (bb) unlikely to be used in general purpose applications, such as the applications described in subparagraph (D); or (II) any lamp not described in subparagraph (D) that is excluded by the Secretary, by rule, because the lamp is-- (aa) designed for special applications; and (bb) unlikely to be used in general purpose applications."

[13] "Definition does not include --- "1) Fluorescent lamps designed to promote plant growth; (2) Fluorescent lamps specifically designed for cold temperature applications; (3) Colored fluorescent lamps; (4) Impact-resistant fluorescent lamps; (5) Reflectorized or aperture lamps; (6) Fluorescent lamps designed for use in reprographic equipment; (7) Lamps primarily designed to produce radiation in the ultra-violet region of the spectrum; and (8) Lamps with a Color Rendering Index of 87 or greater."

	coating transforms some of the ultraviolet energy generated by the mercury discharge into light, *including only the following*: (1) Any straight-shaped lamp (commonly referred to as 4-foot medium bipin lamps) with medium bipin bases of nominal overall length of 48 inches and rated wattage of 25 or more; (2) Any U-shaped lamp (commonly referred to as 2-foot U-shaped lamps) with medium bipin bases of nominal overall length between 22 and 25 inches and rated wattage of 25 or more; (3) Any rapid start lamp (commonly referred to as 8-foot high output lamps) with recessed double contact bases of nominal overall length of 96 inches; (4) Any instant start lamp (commonly referred to as 8-foot slimline lamps) with single pin bases of nominal overall length of 96 inches and rated wattage of 49 or more; (5) Any straight-shaped lamp (commonly referred to as 4-foot miniature bipin standard output lamps) with miniature bipin bases of nominal overall length between 45 and 48 inches and rated wattage of 25 or more; and (6) Any straight-shaped lamp (commonly referred to 4-foot miniature bipin high output lamps) with miniature bipin bases of nominal overall length between 45 and 48 inches and rated wattage of 44 or more."	
General service Light-emitting diode lamp	To be defined by the Secretary of Energy. 84 F.R. 46669 (Sept. 5, 2019)	
High intensity discharge lamp	"(A) an electric-discharge lamp in which-- (i) the light-producing arc is stabilized by the arc tube wall temperature; and (ii) the arc tube wall loading is in excess of 3 Watts/cm. (B) Inclusions. The term "high intensity discharge lamp" includes mercury vapor, metal halide, and high-pressure sodium lamps described in subparagraph (A)."	
General service lamp	"includes-- (I) general service incandescent lamps; (II) compact fluorescent lamps; (III) general service light-emitting diode (LED or OLED) lamps; and (IV) any other lamps that the Secretary determines are used to satisfy lighting applications traditionally served by general service	See examples of general service incandescent lamp, compact fluorescent lamp, and general service LED lamp

	incandescent lamps." **Specifically excluding over 20 types of other lamps from definition.**[14]	above.
BALLASTS		
Fluorescent lamp ballast	"a device which is used to start and operate fluorescent lamps by providing a starting voltage and current and limiting the current during normal operation."	
LIGHTING FIXTURES		
Metal halide lamp fixtures	"a light fixture for general lighting application designed to be operated with a metal halide lamp and a ballast for a metal halide lamp."	
Illuminated exit signs	"a sign that-- (A) is designed to be permanently fixed in place to identify an exit; and (B) consists of an electrically powered integral light source that-- (i) illuminates the legend 'EXIT' and any directional indicators; and (ii) provides contrast between the legend, any directional indicators, and the background."	
Torchieres	"a portable electric lamp with a reflector bowl that directs light upward to give indirect illumination"	
Traffic signals and pedestrian modules	"a standard 8-inch (200mm) or 12-inch (300mm) traffic signal indication that-- (A) consists of a light source, a lens, and all other parts necessary for operation; and (B) communicates movement messages to drivers through red, amber, and green colors." "a light signal used to convey movement information to pedestrians."	

With one exception (high intensity discharge lamps), these covered products have been long subject to federal energy conservation standards,[15] beginning with standards for incandescent reflector lamps and general service fluorescent lamps in the Energy Policy Act of 1992 and amended by the Secretary of Energy several times, standards for fluorescent lamp ballasts

[14] Definition does not include ---"(I) any lighting application or bulb shape described in [the list of lamps excluded from the definition of general service incandescent lamp); or (II) any general service fluorescent lamp or incandescent reflector lamp."

[15] The one exception is the high intensity discharge lamp. DOE conducted a rulemaking to establish energy conservation standards for this lamp but concluded the agency could not economically justify any standard. 80 FR 76355 (Dec. 5, 2015).

established by the Secretary of Energy in 2000 and amended by Congress and the Secretary of Energy several times, standards for medium base compact fluorescent lamps, illuminated exit signs, torchieres, traffic signal and pedestrian modules in the Energy Policy Act of 1992, and general service incandescent lamps, intermediate base incandescent lamps, and candelabra base incandescent lamps in the Energy Independence and Security Act of 2007 (EISA-2007). More recently, the Secretary of Energy adopted energy conservation standards for rough service incandescent lamps and vibration service incandescent lamps as directed by Congress in EISA-2007, 42 U.S.C. §6295(*l*)(4), and these became covered products.

We understand the CEC is familiar with the current federal standards for the different types of lamps that are covered products under EPCA set forth in Table II below.

TABLE 2

Light Source (Lamp)	Applicable Federal Energy Conservation Standard	CA State Regulation Preempted?
General service lamp	See below TBD 84 F.R. 46661, 46672 (Sept 5, 2019)	Currently, yes See discussion below
General service incandescent lamp	10 CFR 430.32(x)(1) (adopting EISA-2007 efficacy standards)	Currently, yes See discussion below
Medium base compact fluorescent lamp	10 CFR 430.32(u) (adopting EPAct 2005 standards)	Currently, yes See discussion below
General service LED lamp	TBD 84 F.R. 46661, 46672 (Sept 5, 2019)	Currently, yes See discussion below
Incandescent reflector lamp	10 CFR 430.32(n)(6) Efficacy standards	Yes
Intermediate base incandescent lamp	10 CFR 430.32(x)(3) (adopting EISA 2007 standards: 40W max)	Yes
Candelabra base incandescent lamp	10 CFR 430.32(x)(2) (adopting EISA-2007 standards: 60W max)	Yes
Medium base rough service incandescent lamp	10 CFR 430.32(bb)(1) 40W max Single-package marketing limit	Yes
Medium base vibration service incandescent lamp	10 CFR 430.32(bb)(2) 40W max Single-package marketing limit	Yes
General service fluorescent lamp	10 CFR 430.32(n)(4) Efficacy standards	Yes
High intensity discharge lamp (incl. mercury vapor, metal halide, and high-pressure	None 80 FR 76355 (12/5/2015) (negative determination)	Yes

sodium lamps		

Included in the now-withdrawn definition of general service lamp and the CEC proposed definition of that lamp in the 45-day language are the following eight covered products for which the CEC proposed 45 lumen per watt energy conservation standard at Title 20, §1605.3(k)(1)(B) for general service lamps have been and remain void: (1) general service incandescent lamps, (2) incandescent reflector lamps, (3) intermediate base incandescent lamps, (4) candelabra base incandescent lamps, (5) rough service incandescent lamps, (6) vibration service incandescent lamps, (7) medium base compact fluorescent lamps, and (8) general service light-emitting diode (LED) lamps. Each of these types of lamps has been and remains a covered product subject to federal preemption of state energy conservation standards regardless of whether they are part of the CEC definition of "general service lamp" or not.

Setting aside for the moment the question of whether California enjoys an exception to federal preemption for general service lamps as defined in federal law (including general service incandescent lamps), the lamp types identified as (2)-(8) in previous paragraph are, as a matter of federal law, covered products independent of the definition of general service lamp and California enjoys no exception to preemption for those lamps. California can neither apply nor enforce an energy conservation standard with respect to those covered products, much less establish a standard that varies from the federal standards identified above for those covered products. The current references in California to federal standards for federally-regulated appliances at Section 1605(k), which are merely informative, should remain unchanged. Changing the current references sews confusion, contrary to the CEC stated purpose in the Initial Statement of Reasons.

With respect to standards for general service lamps and the general service incandescent lamp, the Department of Energy recent Final Rule, 84 F.R. 46661, 46669 (Sept. 5, 2019) states that California currently enjoys no exception to preemption for California at this time. This calls into question the validity of Title 20, §1605.3(k)(2). In that regard, NEMA asks the CEC to consider the discussion below.[16]

[16] The U.S. District Court's decision in *National Electrical Manufacturers Assn. v California Energy Commission*, 2017 U.S. Dist LEXIS 211213 (E.D. Ca. 2017) denying NEMA's motion for judgment on the pleadings at a preliminary stage of the case is neither dispositive precedent nor inconsistent with this discussion. The court entered no final judgment for either party, and the motion was denied because, observing that DOE had not yet made final determinations for GSIL standards among other things, and NEMA, in the District Court's view, could not establish at that point in time that the Secretary has adopted a final rule "'in accordance with clauses (i) through (iv),' and therefore the court cannot foreclose the possibility that exceptions to preemption under § 6295(i)(6)(A)(vi) apply to CEC's regulations." *Id*. at *25-26. While NEMA disagrees with the court's treatment of this issue, in the posture that the court's opinion left the parties it is clear that the court was requiring evidence of DOE final actions on certain aspects of the requirements of "clauses (i) through (iv) and NEMA would have to wait for the regulatory record to be finalized for the court to "foreclose the possibility that the exceptions to preemption apply." NEMA agreed to discontinue the proceeding without prejudice. That regulatory record is now more transparent now that DOE is completing a final rule. 84 Fed.Reg. 46661 (Sept. 5, 2019) and 84 Fed.Reg. 46830 (Sept. 5, 2019). Importantly, the District Court concluded that "NEMA is correct that clause (iii) requires a final rule by January 1, 2017 only if the Secretary determines that GSIL standards should be amended." *Id.* at *16. DOE has issued a

1. Clause (i) of 42 U.S.C. §6295(*i*)(6)(A) requires ---

"Not later than January 1, 2014, the Secretary shall initiate a rulemaking procedure to determine whether—"

"*DOE initiated the first GSL standards rulemaking process by publishing in the Federal Register a notice of public meeting and availability of the framework document. 78 FR 73737 (Dec. 9, 2013); see also 79 FR 73503 (Dec. 11, 2014) (notice of public meeting and availability of preliminary technical support document). DOE later issued a NOPR to propose amended energy conservation standards for GSLs. 81 FR 14528, 14629-14630 (Mar. 17, 2016) (the March 2016 NOPR)." 84 Fed.Reg. 46661 (Sept. 5, 2019).* <u>This aspect of clause (i) is satisfied.</u>

(I) standards in effect for general service lamps should be amended to establish more stringent standards than the standards specified in paragraph (1)(A); and

***The Secretary is determining whether standards in effect for general service lamps to establish more stringent standards than the standards specified in paragraph (1)(A). The standards specified in paragraph (1)(A) is an explicit reference to Congress' standards for general service incandescent lamps in EISA-2007. The Secretary has published a preliminary determination proposing that standards for general service incandescent lamps cannot be more stringent than the standards adopted by Congress in 2007.* 84 Fed.Reg. 46830 (Sept. 5, 2019). <u>This aspect of clause (i) is satisfied.</u>**

(II) the exemptions for certain incandescent lamps should be maintained or discontinued based, in part, on exempted lamp sales collected by the Secretary from manufacturers.

***The Secretary has continuously considered throughout the rulemaking whether the exemptions for certain incandescent lamps should be maintained or discontinued. Initially, the Secretary determined that exemptions for certain incandescent lamps should be discontinued, 82 Fed.Reg. 7276 (Jan. 19, 2017) and 82 Fed.Reg. 7322 (Jan. 19, 2017). See 84 Fed.Reg. at 46662 (Sept. 5, 2019)("Like 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 certain "exemptions." (42 U.S.C. 6295(i)(6)(A)(i)(II))."). The September 5, 2019 Final Rule, 84 Fed.Reg. at 46661 (Sept. 5, 2019) reconsidered whether the discontinuance of some of the exemptions was consistent with congressional intent in light of facts the Secretary had not considered previously and decided to maintain their exemptions. The exemptions for vibration service and rough service incandescent lamps have been discontinued.* <u>This aspect of clause (i) is satisfied.</u>**

2. Clause (ii) of 42 U.S.C. §6295(*i*)(6)(A) requires ---

The rulemaking--

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proposed determination that GSIL standards cannot be amended, 84 Fed.Reg. 46830 (Sept. 5, 2019) and it only remains for DOE to determine whether that will be the final rule.

(I) shall not be limited to incandescent lamp technologies; and

The rulemaking has never been limited to incandescent lamp technologies. DOE proposed standards for compact fluorescent and general service light emitting diode lamps in its March 16, 2016 Notice of Proposed Rulemaking. 81 FR 14528, 14629-14630 (Mar. 17, 2016). **This aspect of clause (ii) is satisfied.**

(II) shall include consideration of a minimum standard of 45 lumens per watt for general service lamps.

The rulemaking has included consideration of a minimum standard of 45 lumens per watt for general service lamps. DOE proposed a 45 lumen per watt standard for general service lamps in its March 16, 2016 Notice of Proposed Rulemaking. 81 FR 14528, 14630 (March 17, 2016). More recently, the Secretary has stated that its determination of whether to establish standards for general service incandescent lamps that are more stringent than those adopted by Congress in paragraph (1)(A) of EISA-2007 will also include a decision whether to adopt a 45 lumen per watt standard for general service lamps. 84 Fed.Reg. 46830, 46857 (Sept. 5, 2019). **This aspect of clause (ii) is satisfied.**

3. Clause (iii) of 42 U.S.C. §6295(*i*)(6)(A) requires ---

If the Secretary determines that the standards in effect for general service incandescent lamps should be amended, the Secretary shall publish a final rule not later than January 1, 2017, with an effective date that is not earlier than 3 years after the date on which the final rule is published.

As the District Court stated in National Electrical Manufacturers Assn. v California Energy Commission, 2017 U.S. Dist. LEXIS 211213 (E.D. Ca. 2017), "NEMA is correct that clause (iii) requires a final rule by January 1, 2017 only if the Secretary determines that GSIL standards should be amended." Id. at *16. The District Court added, "Properly read, the plain language of the statute requires the Secretary to find first "that the standard in effect for [GSILs] should be amended" before imposing an obligation on the Secretary to "publish a final rule no later than January 1, 2017." 42 U.S.C. § 6295(i)(6)(A)(iii). The use of the word "[i]f" does not impose a duty on the Secretary to make a determination at all." Id. The District Court's interpretation of the "plain language" is shared by the DOE as well. 84 Fed.Reg. at 46663-64 (Sept. 5, 2019). If the Secretary does conclude that standards for general service incandescent lamps should be amended to be more stringent than Congress provided in paragraph (1)(A), then the Secretary had an obligation to publish that determination by January 1, 2017; however, **if the Secretary determines in the pending rulemaking, see 84 Fed.Reg. 46830 (Sept. 5, 2019), that the standard for general service incandescent lamps cannot be made more stringent then there was no deadline to publish and clause (iii) is satisfied.**

4. Clause (iv) of 42 U.S.C. §6295(*i*)(6)(A) requires ---

The Secretary shall consider phased-in effective dates under this subparagraph after considering--

(I) the impact of any amendment on manufacturers, retiring and repurposing existing equipment, stranded investments, labor contracts, workers, and raw materials; and

(II) the time needed to work with retailers and lighting designers to revise sales and marketing strategies.

Clause (iv) only makes sense if the Secretary determines to amend or adopt new standards for general service lamps in this rulemaking. The Secretary's determination under (i) is expected to include this consideration if new or amended standards are adopted, but there is no obligation on the part of the Secretary to include phased-in standards just as there is no obligation in the statute to amend standards for general service lamps.

The significance of the foregoing is clear under the plain meaning of these clauses. If the Secretary affirms its preliminary determination proposed in the Notice of Proposed Rulemaking on September 5, 2019 (84 Fed.Reg. 46830) that standards for general service incandescent lamps cannot be amended, then clauses (iii) and (iv) are satisfied, and the Secretary has completed a rulemaking in accordance with clauses (i) – (iv). If the Secretary determines that those standards can be amended, then there was a duty to publish those standards by January 1, 2017 and the backstop provision, 42 U.S.C. §6295(i)(6)(A)(v), is triggered. The Secretary's recent statements in the Final Rule on definitions, 84 Fed.Reg. 46661, 46664 (Sept. 5, 2019) regarding preemption and the backstop are correct, both factually and legally: "Since DOE has not yet made the predicate determination on whether to amend standards for GSILs, the obligation to issue a final rule by a date certain does not yet exist and, as a result, the condition precedent to the potential imposition of the backstop requirement does not yet exist and no backstop requirement has yet been imposed." It is the Secretary's responsibility under EPCA to (1) make the predicate determinations and (2) to make a prohibitory order to "prohibit the sale of any general service lamp that does not meet a minimum efficacy standard of 45 lumens per watt" under clause (v) if the conditions precedent for the "backstop" occur. The backstop under clause (v) is not self-executing but requires action by the Secretary of Energy exclusively.

The significance of the foregoing for any California exception to preemption is

1) If the backstop is not triggered because the Secretary has completed a rulemaking in accordance with clauses (i) – (iv), then California cannot rely upon the exceptions to preemption for in subclauses II and III of 42 U.S.C. §6295(*i*)(6)(A)(vi). In that case, California cannot adopt the 45 lumen per watt "backstop requirement" or "any California regulations relating to these covered products adopted pursuant to State statute in effect as December 19, 2007."

2) Subclause (I) of 42 U.S.C. §6295(*i*)(6)(A)(vi) permits California to adopt the Final Rule on standards adopted by the Secretary of Energy in the pending DOE rulemaking. California's Title 20 standard at 1605.3(k) of 45 lumens per watt for

general service lamps therefore depends, in that case, on the Secretary of Energy adopting a 45 lumen per watt standard. As noted above, the Secretary is considering that option now, but the statute does not impose an obligation on the Secretary to make that choice.

The Secretary's recent statement that the exception in subclause I does not apply until the Secretary finalizes its standards determinations is factually and legally correct. 84 Fed.Reg at 46669 (Sept. 5, 2019). The Secretary's recent statement that the exception in subclause II does not apply yet because DOE has not yet made the determination on whether to amend standards for GSILs, and thus no obligation currently exists for DOE to issue a final rule setting standards for these lamps in accordance with the 42 U.S.C. 6295(i)(6)(A)(i)-(iv) is factually and legally correct. The Secretary's recent statement that the exception in subclause III does not apply for the same reason is factually and legally correct.

Given the plain language of the statutory exceptions to preemption and the fact that the exceptions to preemption will be effective or ineffective depending on the outcome of the Secretary's pending standards rulemaking, further regulatory action by the CEC on this subject does nothing to eliminate confusion but only sews it. For that reason, NEMA has consistently recommended that the CEC await the final action by the Secretary of Energy, and we continue to recommend that course.

The CEC Supplemental Staff Analysis for General Service Lamps Expanded Scope is Flawed and Overstates the Amount of Energy Savings the Proposed Standards Would Achieve

Without prejudice to NEMA Comments that California has no authority to regulate most of the lamps that it proposes to regulate, NEMA wishes to point out shortcomings in the data and analysis in the "Supplemental Staff Analysis" that purports to calculate the benefits of state regulation. The Staff Analysis significantly overstates the benefits because the Analysis significantly overstates the estimated number of "low efficacy" lamps shipped and in sockets in California.

The CEC Supplemental Staff Analysis for General Service Lamps Expanded Scope ("Supplemental Staff Analysis") takes the CEC "Draft Staff Report" dated August 2018 and portrays the results in the August 2018 Staff Report as its "Low LED Scenario" for purposes of the Supplemental Staff Analysis. The Supplemental Staff Analysis then produces an alternative scenario that it labels the "High LED Scenario" that posits a higher percentage of market penetration for LED reflectors and decorative lamps than the "Low LED Scenario."

How the CEC Staff arrived at the High LED Scenario rests on a shaky foundation. Staff explains that it created the High LED Scenario for reflector lamps "by assuming that LED lamps were 50% of the California existing socket of lamps in 2017." *Staff then "used the low LED scenario estimates of shipments share for incandescent lamps in 2017 as proxy for the percent of incandescent lamps in the 2017 existing stock of lamps* (e.g. 80 percent for large diameter reflector lamps in the 2017 existing stock of lamps) and calculated an estimate of the total

number of existing lamps in 2017 by dividing the low LED scenario estimate of the existing stock of low-efficacy lamps *by the proxy* (e.g. for large diameter reflector lamps 88.8 million/ 0.8 = 111 million lamps). Staff then reduced this estimate by half in order to represent a 50 percent share of LED lamps in the 2017 stock (e.g. for large diameter reflector lamps 111 million x 0.5 = 55.5 million)."

This methodology makes no sense and it generates a wrong result.

Large Diameter Reflector Lamps

There are approximately 590 – 620 million sockets containing large diameter reflector lamps in the United States as a whole. Using a more traditional methodology that examines reflector lamp shipments, estimates of service life (2.7 years) and related factors for each type of reflector lamp generates this range consistently over the course of the past decade. Using the midpoint of the range (605 million) large diameter reflector lamp sockets, the California 12% population share of those sockets represents an estimated 73 million large diameter reflector lamp sockets in California.

The Supplemental Staff Analysis estimate that there are 111 million reflector lamp sockets in California overstates the estimated number of reflector lamp sockets by 38 million sockets (by 53%). This is far too large of a difference to be treated as immaterial and ignored. The methodology used to arrive at this figure is flawed. The use of IRLs estimated percentage of reflector lamps (80%) for this purpose is error, because the shorter-service life incandescent lamp's share of all reflector shipments overstates the incandescent lamp's share of sockets and the longer-service life CFL and LED lamp shipments understate their share of sockets. The methodology in the Supplemental Staff Analysis fails to recognize the influence lamp service life has on socket penetration.

The proper methodology for estimating socket penetration sums specified lamp shipments over a period of time represented by average service life for that lamp. The average service life for the incandescent reflector lamp used is typically estimated to be 2.7 years. In the case of the incandescent reflector lamp, the estimated installed base of those lamps would be represented by the prior 2.7 years of shipments of IRLs. So, for year-end 2017, one would sum incandescent reflector lamp shipments for 2016, 2015 and 0.7* 2014 shipments and arrive at a reasonable estimate of installed incandescent reflector lamps. Other factors such as early failure or lamp retirement/replacement might be accounted for as well, but the basic calculation outlined above would provide a good benchmark. To get total lamp reflector stock, you would do the same exercise for CFL reflector and LED reflector but use different average service life for each lamp type (5-6 years in the case of CFL and 9 years in the case of LED would be appropriate. Then you would sum the estimated stock of incandescent, CFL, and LED reflector lamp sockets to arrive at an estimate of the total reflector lamp sockets.

The second flaw in the Supplemental Staff Analysis is its reliance on the August 2018 Staff Report. The August 2018 Staff Report is derived entirely from a flawed January 2017 report of Lawrence Berkeley National Laboratories (2017 LBNL Report) that made similar erroneous estimates of national shipments and the installed base (stock) without the benefit of recent data.

The flaw is evident in the LBNL estimate in Table 1 of its Report that there were 960 million large diameter reflector lamp sockets in the U.S. in 2015, approximately 355 million sockets greater than shipment and reflector lamp service life data can possibly support (see above). The LBNL estimate of reflector lamp sockets was derived from inaccurate shipment data in a U.S. Department of Energy report that overstated incandescent reflector lamp (IRL) shipments by two to three times.[17] If the number of IRL shipments and the stock of reflector lamps was as high as LBNL estimated, NEMA members would have sold a lot more reflector lamps than they actually did. They did not sell anywhere near the DOE estimate.[18]

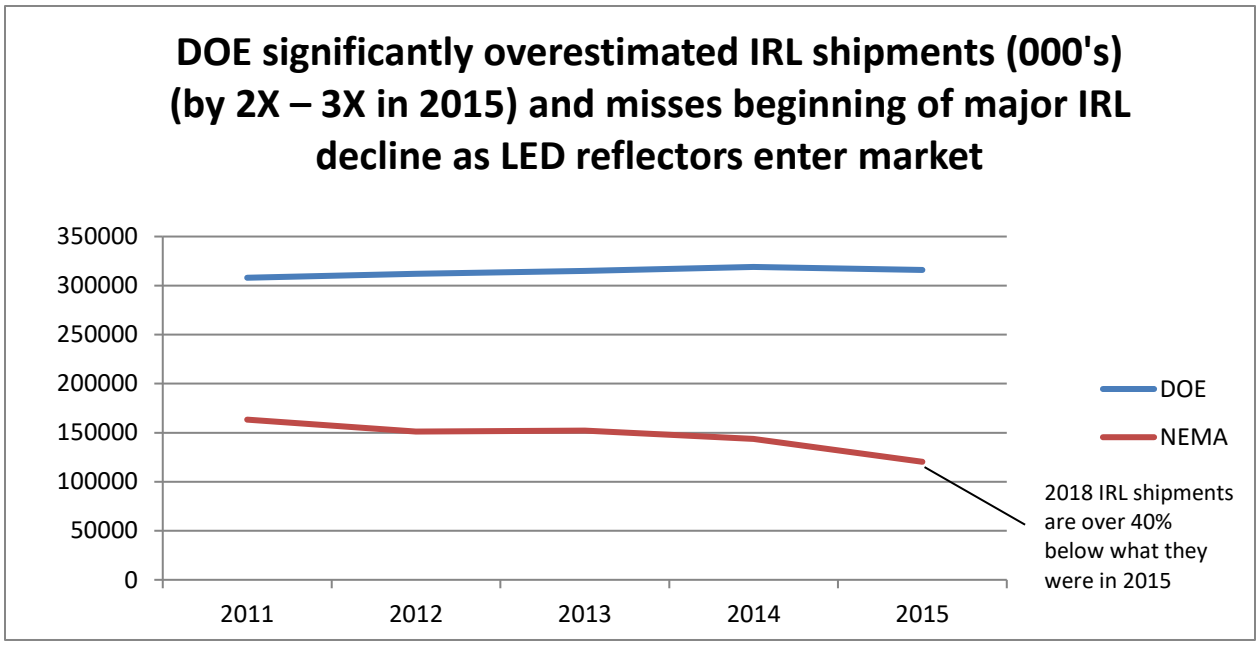

Figure 1: NEMA Assessment of Overestimation of DOE IRL Shipments

The Low LED Scenario repeated in the Supplemental Staff Analysis derived from the LBNL Report as reflected in the CASE study is so inherently misleading and not credible that it should be ignored entirely. That the High LED Scenario is based on adjustments to the Low LED Scenario is grounds for disregarding that Scenario as well. The better course of action would have been to begin an entirely new analysis using traditional means for estimating lamp stock. There are far fewer large diameter incandescent reflector lamps sold and installed than the CEC staff has estimated based on unreliable estimates of others.

[17] See U.S. DOE, Notice of Proposed Data Availability, 81 Fed.Reg. 71794, 71800 (Oct. 18, 2016) ("DOE estimated that the sales of medium base reflector lamps that are incandescent are approximately 300 million units per year."). See also, U.S. DOE, Notice of Data Availability, 82 Fed.Reg. 38613, 38615 (Aug. 16, 2017) (estimating IRL shipments in 2015 as 315 million units). This estimate was factually erroneous in a very material way. DOE has now recognized that its estimates of non-GSL lamps were too high. 84 Fed.Reg. 46661, 46667 (Sept. 5, 2019).

[18] This repeats an important point made in NEMA 2018 Comments to the CEC in Docket 17-AAER-007 (September 17, 2018) at 10: "If manufacturers are not and have not been selling and shipping these lamps anywhere near the rate and in the quantities the CEC Staff estimates, the "stock" of these lamps cannot be anywhere near the level the CEC estimates."

In addition to the fact that sheer number of incandescent reflector lamps shipped in the U.S. in 2015 was exaggerated by a factor of nearly 3X, an updated index of incandescent reflector lamp shipments from 2011 through 2018 looks like this, displaying dramatically declining shipments of these lamps nationwide after 2015.

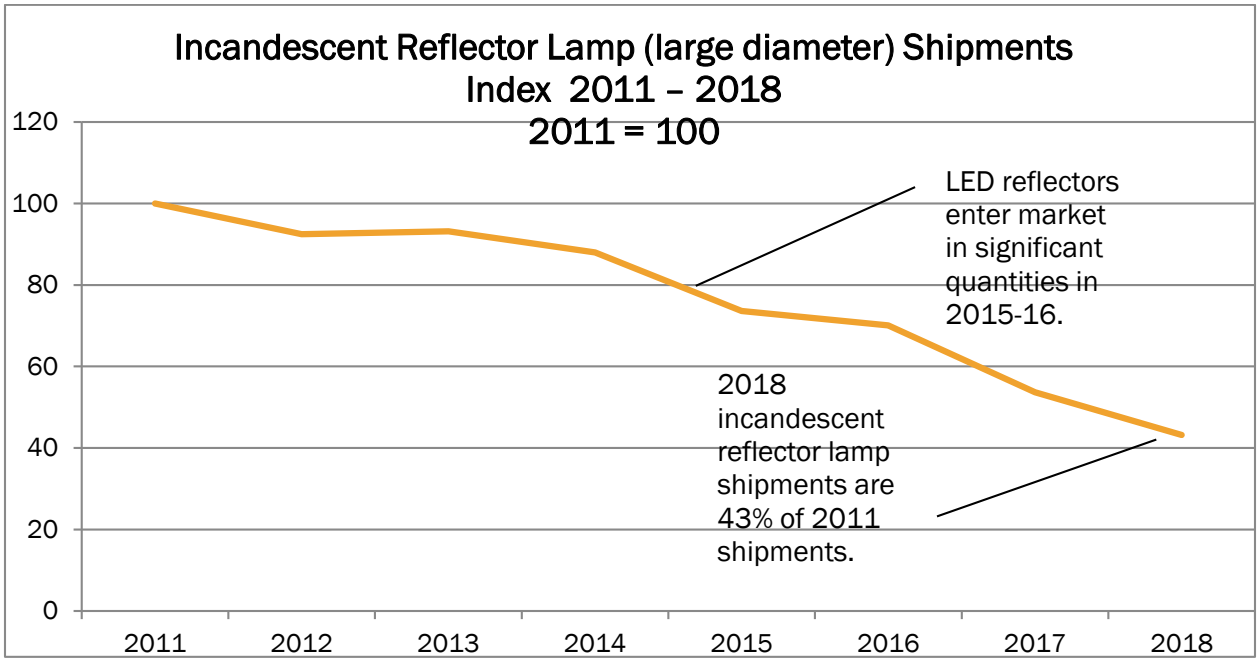

Figure 2: IRL Shipments 2011-2018. Source: NEMA Lamp Index

The Supplemental Staff Analysis "assumption" that LED reflector lamp shipments were approximately 50% of the category in 2017 is close (50.6%); however, CFL reflector lamp stock still accounted for 1.4% of the category in 2017 meaning that incandescent reflector lamps were 48% of the category in 2017. ***The primary problem with the "High LED Scenario" is its reliance on the large overstatement of the number of total reflector lamp sockets found in the "Low LED Scenario."*** The effect of this overstatement is reflected in the fact that large diameter incandescent reflector lamps in sockets in California in 2017 are closer to 40 million (72.6 million * 56%), not 55.5 million as the Supplemental Staff Analysis' Table 5 represents.[19] That share of incandescent reflector lamps in reflector lamp sockets is declining as we write. In 2018, incandescent reflector lamp shipments fell 20% over 2017, and the rate of decline has escalated to 35% in the first six months of 2019 over the first six months of 2018. ***LED reflector lamp shipments are now two-thirds of the large diameter reflector lamp category***

[19] In comments submitted to the CEC on September 17, 2018 (17-AAER-07), NEMA stated at page 11, "Using the methodology deployed in the CASE Initiative document and applying NEMA shipment data (including estimates of non-NEMA member data), the national stock of IRL in 2017 is closer to 306 million units, and multiplying that figure by 12.18% would compute the California stock of IRL at approximately 37,000,000 units not 88,000,000 units as shown in the CASE Initiative document." We have increased the number of sockets nationwide since our 2018 comments, because recently available LED reflector lamp import data reveals a much larger share of foreign imports of LED reflector lamps than previously estimated. These imports subsequently become domestic shipments to retailers and distributors and then retail sales. This results in a slight increase of California's share of reflector lamp sockets in these Comments over the number represented in our 2018 Comments.

nationwide. These trends are expected to continue without any regulatory mandates, although at some point LED reflector lamp shipments will also decline as these longer-life lamps dominate the reflector lamp socket category and replacement sales slow.

The estimates of California Shipments of Replacement Lamps in Table 6 appear to be tied to the incorrect estimate that there are 111 million reflector lamp sockets in California, and this has generated a much higher estimate of the number of incandescent reflector lamp shipments than can possibly be the case. *At best*, an estimated 10.5 million incandescent reflector lamps were shipped and sold in California in 2017, 8.6 million in 2018, and a projected 5.7 million in 2019 by applying a 12% population share to California's share of national shipments. This is considerably below the incandescent reflector lamp shipment estimates in Table 6 of 32.4 million, 32.4 million, and projected 21.5 million in 2019 in the Supplemental Staff Analysis. The overstatement of incandescent reflector lamp shipments and stock has the effect of seriously distorting and overstating the lamp electricity savings calculations and economic impact in the Supplemental Staff Analysis. The electricity savings from eliminating incandescent reflector lamps in California is a small fraction of what the Supplemental Staff report calculates.

Additionally, the foregoing analysis assumes that California is no better nor any worse than other states in encouraging their citizens to use energy saving light bulbs. Given the resources that California devotes to energy conservation, NEMA has a difficult time accepting that assumption and NEMA suspects that California shipments of incandescent reflector lamps in 2019 will be below the projected 5.7 million units mentioned above, casting further doubt on the electricity savings in the Supplemental Staff Report that might be achieved by regulating reflector lamps in California.

Decorative Lamps

There is a similar error in calculating the estimated impact of regulating decorative lamps. According to Table 3, there were 30.9 million incandescent decorative and globe lamps ("decorative lamps") shipped in California in 2017. If California's share of the national market is approximately 12%, that would indicate that there were approximately 257 million incandescent decorative lamps shipped in the United States in 2017. Again, NEMA members would be selling a lot more of these lamps if that was true and they are not. The real number was closer to two-thirds that amount for 2017.[20] As with incandescent reflector lamps, shipments of decorative lamps have continued to decline in 2018 (-19%) and through the first half of 2019 as well. In contrast, shipments of LED decorative lamps have increased, and in 2018 shipments of LED decorative lamps represented about 38.5% of the decorative lamp category.

[20] The NEMA decorative lamp category includes lamps with special shapes including globe (G), candle (B, BA, CA, F), S-shape and T-shape lamps below 10" in length, and includes these lamps with candelabra, intermediate and medium screw base.

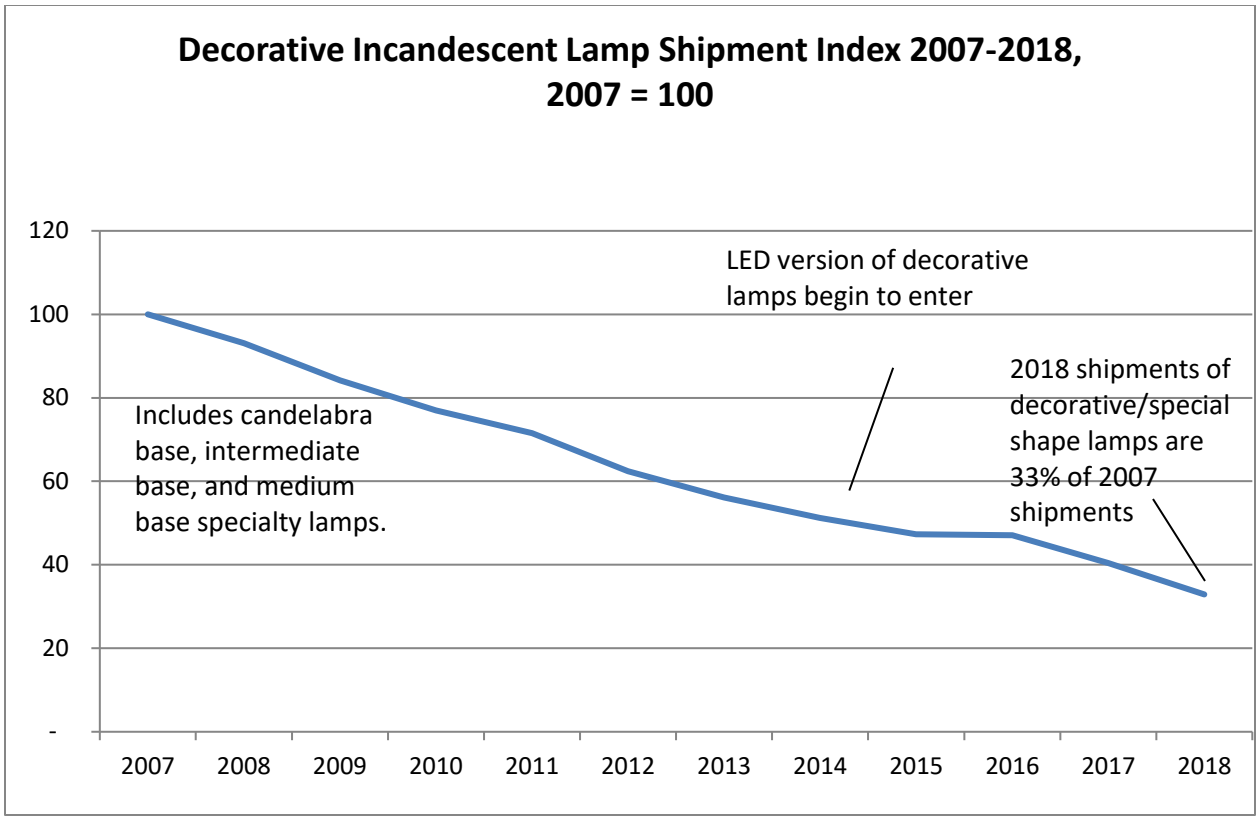

Figure 3: Decorative Incandescent Lamp Shipments 2007-2018. Source: NEMA Lamp Index

Using a 5.5-year service life estimate for decorative incandescent lamps (DOE, 2015), the total number of decorative lamp sockets is estimated at 1.3 billion sockets nationwide in 2017 and 2019.[21] 84% of those sockets are estimated to be occupied by incandescent and halogen lamps and 16% are estimated to be occupied by LED decorative lamps. NEMA data for LED decorative lamp shipments begins in 2015 and it is assumed for 2019 estimates that nearly all of the shipments from 2015-2018 are in sockets by the end of 2019. The LED decorative lamp shipment index looks like this, showing a surge in 2018 after growth from 2015-2017.

[21] While a strict "hours of use" calculation would result in a median service life calculation of 3.16 years for incandescent decorative lamps with a 3000 average life, DOE recognized that a significant number of these lamps are on dimming circuits and the use of lighting controls has the effect of extending the service life of decorative lamps beyond a normal hours of use calculation.

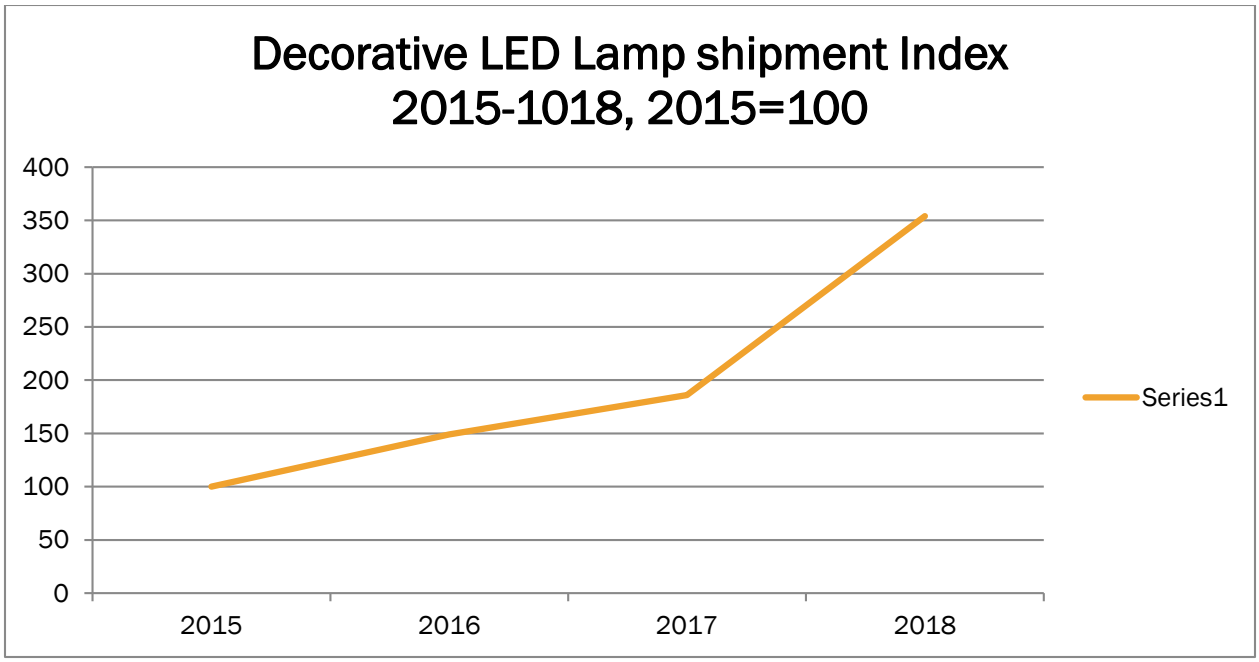

Figure 4: Decorative LED Lamp Shipments 2015-2018. Source: NEMA Lamp Index

The 2017 LBNL estimate for decorative lamp sockets was 1.73 billion sockets in 2015 (Table 1, decorative and globe), and therefore there is a discrepancy (~430 million sockets) between the LBNL decorative stock estimate and what reliable shipment data and service life estimates will support for such a calculation. Also, it is not clear that the LBNL estimate includes S-shape and T-shape (10" or less in length) lamps as the NEMA shipment date includes for this category. It is possible the decorative lamp socket discrepancy may be slightly greater than reflected in the calculation above. While this discrepancy (33%) is smaller than the reflector lamp socket discrepancy (53%), it is not insignificant. Since both the Low LED Scenario and High LED Scenario in the Supplemental Staff Report rely on the erroneous LBNL socket estimate for decorative lamps, the conclusion is inevitable that the electricity savings calculation is overstated for decorative lamps as well.

EISA-exempt lamps

The phrase "EISA-exempt" is a misnomer, at least with respect to rough service incandescent and vibration service incandescent lamps, which were regulated by U.S. DOE in 2018 and they are no longer "exempt" from regulation under EPCA.

The following table presents publicly available data on shipments of these 5-incandescent lamp types that are specially, and separately regulated by DOE pursuant to 42 U.S.C. §6295(*l*)(4). As the table above demonstrates, shipments of four of the five types have declined since 2011, and only shipments of vibration service lamps increased (although declining 33% since its peak in 2015). DOE regulated rough service incandescent lamps and vibration service incandescent lamps as directed by Congress beginning in 2018. Since regulation of vibration and rough service incandescent lamps began, shipments of these two lamps have fallen as one would

expect from the nature of the regulation that dims their light output and limits the number of lamps per package to one.

Lamp Type	2011	2012	2013	2014	2015	2016	2017	2018
Rough service	6,829	6,045	6,237	7,267	10,914	9,764	5,860	3,881*
Index	100	88.5	91.3	106	159.8	143	85.8	56.8
Vibration service	914	1,077	1,407	5,220	7,071	6,869	6,018	4,723*
Index	100	117	154	571	773	751	658	516
3-way	31,619	28,854	34,773	35,340	32,665	31,768	28,468	22,098
Index	100	91.2	109	111	103	100.4	90	69.8
Shatter-resistant	1,210	1,455	1,093	1,042	689	548	474	400
Index	100	120.2	90.3	86.1	56.9	45.2	39.2	33
High lumen	9,878	12,373	9,296	5,232	4,049	3,679	2,794	2,465
Index	100	125.2	94.1	52.9	41	37.2	28.3	24.9

Table 3: Shipments of 5-Incandescent Lamp Types, per 42 U.S.C. §6295(*l*)(4). Source: DOE

LBNL (2017) used a 1.5-year service life for these lamps and we presume the CEC Draft Staff Report and Supplemental Staff Report is using that service life as well.

The table reveals that a total of 43.6 million units of these 5-lamp types was shipped nationally in 2017 and that figure fell to 33.5 million in 2018. California's population share would be 5.2 million units and 4.02 million units in 2017 and 2018 respectively.

For the three lamp types that are not regulated by DOE (3-way, shatter-resistant, and high lumen), the total national shipments in 2017 and 2018 are 31.3 million units and 24.9 million units respectively. California's population share of those shipments would be 3.75 million units and 3 million units in 2017 and 2018 respectively. Applying a 1.5-year service life to these shipments results in an estimate of the 2019 California stock of these incandescent lamps of 6.6 million sockets for all five lamp types and 4.9 million sockets for the three lamp types that DOE does not regulate. These estimates stand in stark contrast to the Supplemental Staff Report 2019 estimate of 35 million sockets (Table 2) in California under the Low LED Scenario, and 7.9 million sockets (Table 5) in California under the High LED Scenario.

Again, the Supplemental Staff Report exaggerates considerably (two-three times) the number of sockets for these lamps and this distorts the energy saving claims contained in the Supplemental Staff Report so that it is no longer credible. Certainly, for the three incandescent lamp types that are not regulated yet by the U.S. DOE, the energy savings from eliminating 3 million incandescent lamps (and shrinking) from store shelves in California is not going to generate substantial benefits in the aggregate for California consumers who choose to buy them.