



National Electrical Manufacturers Association

**KEVIN J. COSGRIFF**

President and Chief Executive Officer

March 6, 2019

The Honorable Bobby Rush  
Chairman, Energy Subcommittee  
Energy and Commerce Committee  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Fred Upton  
Ranking Member, Energy Subcommittee  
Energy and Commerce Committee  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairman Rush and Ranking Member Upton:

The purpose of this letter is to present the views of the National Electrical Manufacturers Association (NEMA) on our experiences with the Department of Energy's (DOE) efficiency standards program in general and recent developments on General Service Lamps. We trust this information will be useful to you in connection with the hearing "Wasted Energy: DOE's Inaction on Efficiency Standards and Its Impact on Consumers and the Climate" scheduled for February 12, 2019.

NEMA represents nearly 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems. Our combined industries account for 360,000 American jobs in more than 7,000 facilities covering every state. Our industry produces \$106 billion shipments of electrical equipment and medical imaging technologies per year with \$36 billion exports.

There are a number of electrical products within NEMA that are regulated by the DOE pursuant to the Energy Policy and Conservation Act (EPCA), including lighting components and products, electric motors, distribution transformers, uninterruptible power supplies, and external power supplies. Our Member companies have been at the forefront of investing in, designing, manufacturing, and promoting the sale of energy efficient products and equipment for decades. NEMA Members have contributed significantly to the statement made by DOE on its website that "by 2030, cumulative operating cost savings from all standards in effect since 1987 will reach nearly \$2 trillion."<sup>1</sup> Energy savings has become part of NEMA culture, and Congress should recognize the environmental as well as the economic successes of this statute.

We have supported the energy saving goals of the regulatory program under EPCA and we have petitioned for and/or supported a number of the energy conservation Standards that DOE has adopted over the decades. NEMA has been engaged in facilitating non-partisan agreement on legislative

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<sup>1</sup> <https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program>

amendments to EPCA in 1987, 1992, 2005 and 2007. NEMA disagreements with DOE have been few because DOE has not abided with the intent of Congress as reflected in the statutory text or has, in our estimation, exceeded its authority. We expect, as does Congress, that DOE will follow the laws that Congress enacts. That includes statutory requirements under EPCA about the process for enacting or amending energy conservation Standards and test procedures for covered products, the scope of what products Congress has directed DOE to regulate or not regulate, and the economic justification and technical feasibility of DOE Standards.

It is important to emphasize the tremendous progress this country has already achieved through, for example, more energy efficient lighting. In the Energy Independence and Security Act of 2007, Congress established a goal for energy savings by 2020 from DOE energy conservation standards for general service lamps. In the 2007 legislation, Congress stated that it expected DOE Standards for these lamps to “produce energy savings greater than or equal to the savings from a minimum efficacy standard of 45 lumens per watt.”<sup>2</sup> NEMA is pleased to report that American consumers, retailers, and manufacturers have already exceeded that goal without the hand of additional DOE regulation of these lamps. This is but one success story for Congress to recognize.

Congress defined general service lamps to include the common general service incandescent or halogen light bulb, compact fluorescent light bulb (CFL), and the general service LED light bulb (a lamp that had not been produced at the time Congress wrote the law) as well as other light bulbs that were used to satisfy lighting applications traditionally served by general service incandescent lamps.<sup>3</sup> General service lamps are the familiar household light bulbs that emit omnidirectional light, have a medium screw base, operate on household voltages, and serve a broad range of light output.<sup>4</sup> Congress expressly excluded from the definition a long list of specialty lamps with different characteristics, and it is because Congress was so precise in its definition of general service lamps that it was not possible for a broader definition adopted in January 2017 to survive legal scrutiny.<sup>5</sup>

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<sup>2</sup> See 42 U.S.C. §6295(i)(6)(A)(v). The statutory target was set at 45 lumens per watt because the efficacy of the compact fluorescent lamp was at or above that level in 2007, and efforts were underway to improve that efficacy.

<sup>3</sup> See 42 U.S.C. §6291(BB)(i).

<sup>4</sup> See congressional definition of general service incandescent lamp, 42 U.S.C. §6291(30)(D): a “*standard incandescent or halogen type lamp*” referring to the standard omnidirectional light bulb; “*has a medium screw base*” referring to the bulb’s use in the most common lamp socket; “*has a lumen range not less than 310 lumens and not more than 2600 lumens*” referring to the broad lumen range of the standard incandescent or halogen type lamp; “*capable of being operated at a voltage range at least partially within 110 and 130 volts*” referring to common household voltages in the US; “*intended for general service applications*” referring to the fact that it is not used in specialty applications like directional lamps or decorative lamps. See the parallel recognition of these characteristics in the congressional definition of medium screw base compact fluorescent lamps, 42 U.S.C. §6291(S): an integrally ballasted fluorescent lamp, with a medium screw base, a rated input voltage of 115-130 volts, and which is designed as a direct replacement for the general service incandescent lamp.

<sup>5</sup> Importantly, Congress identified a long list of specialty lamps in the statutory text that did not have these characteristics and said they were “not included” in the definition of general service lamps. For example, “reflector” bulbs are not included in the congressional definition because they are “directional” lamps, and do not emit omnidirectional light. Several specialty lamps are defined in terms of their very low wattage and they emit only a very low light output and do not serve the broad range of light output (310-2600 lumens) characteristic of a general service lamp. A number of excluded lamps are decorative lamps with special, non-standard bulb shapes used for the aesthetic or special functional purposes rather than “general service.” The congressional definition of

But we would like to move beyond legalisms to show how successful the DOE program in the lighting area has been. The graphs that are attached to this letter describe what has been occurring in the marketplace for general service lamps over time. It is consistent with what the American consumers see on store shelves around the country in hardware stores, grocery stores, and other retail sites where household light bulbs are sold.

When Congress enacted the Energy Independence and Security Act, shipments of compact fluorescent lamps (CFLs) soared to over 300 million units per year for the first time<sup>6</sup> and stayed above that level in all but one year through 2015. At the same time, shipments of general service incandescent lamps declined because of the growing penetration of longer life CFLs in general service lamp sockets. General service LED lights, with an efficacy of 80 lumens per watt or greater and an even longer lamp life, were first introduced into the market in 2012. Subsequently, prices for these products fell significantly and shipments began to soar in 2015. As of the third quarter of 2018, the most recent quarter for which data is available, general service LED lamp shipments account for 65% of shipments in the general service lamp category,<sup>7</sup> and they are rapidly replacing both incandescent and compact fluorescent lamps in sockets.

The charts relating to general service lamp “stock” are a reasonable description of what has happened in the general service light bulb marketplace since 2007 based on shipments of general service lamps over time, and common assumptions about lamp life and replacement.<sup>8</sup> With 75% or more of the “stock” of general service lamp sockets occupied by light bulbs with an efficacy well above the required 45 lumens per watt level,<sup>9</sup> American consumers, retailers, and manufacturers who make, sell and buy these light bulbs have already exceeded the congressional energy savings goal for this category of regulated product. Moreover, consumer adoption of LED bulbs that NEMA describes above is going to continue.

Another lighting success story from the Energy Independence and Security Act are the provisions relating to consumer education and lamp labeling.<sup>10</sup> One reason American consumers are choosing

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compact fluorescent lamp likewise expressly excluded from the statutory definition fluorescent lamps designed for special purposes or special applications. Similarly, the definition of general service lamp expressly excluded these same specialty lamps from that definition. 42 U.S.C. §6291(BB)(ii). It is this consistent and unambiguous congressional treatment of what was and was not a general service lamp that made DOE’s January 2017 legally untenable.

<sup>6</sup> Source: US Government Import for Domestic Consumption Data (2001-2017).

<sup>7</sup> <https://www.nema.org/Intelligence/Indices/Pages/LED-A-line-and-Halogen-Lamp-Shipments-Increase-in-Third-Quarter-2018.aspx>

<sup>8</sup> In 2015, a report prepared for and published by DOE estimated that 46% of general service lamp sockets were then occupied by CFLs. See *Adoption of Light-emitting Diodes in Common Lighting Applications* (Navigant, July 2015).

<sup>9</sup> The efficacy of the general service CFL is above 45 lumens per watt and the efficacy of a general service LED is typically in the 80-90 lumen per watt range. Efficacy is a measure of light output (lumens) per unit of energy (watt).

<sup>10</sup> P.L. 110-140, sec. 321(b), 121 Stat. 1584 (Dec. 19, 2007).

more energy efficient lighting on their own is because of the new labels that display the energy savings from LED lamps and the longer lamp life that requires less frequent replacement. And we cannot ignore the role that retailers who have assigned informed personnel to explain this information to lighting consumers while they are shopping. These efforts, when combined with a competitive manufacturing market that has improved lighting quality and reduced product cost,<sup>11</sup> the role of utilities in encouraging consumers to use energy saving light bulbs, that has rendered the general service LED lamp a clear competitive alternative to general service CFL and halogen incandescent lamps.

Beyond lighting, DOE standards for other electrical products are already at high levels of efficiency and further regulation is going to be very difficult to justify economically without significant economic pain to our Members' customers, and to our Members. Nevertheless, NEMA and its Members have been identifying selective opportunities, for example, to improve energy savings from the use of advanced technology electric motors --- such as with pumps and swimming pool pumps, and furnace fans --- where those energy savings can be economically justified.

We trust this information is useful to you as you review the DOE appliance efficiency Standards program. Should you have questions or need more information, please have your staff contact Philip Squair, VP Government Relations, at [philip.squair@nema.org](mailto:philip.squair@nema.org).

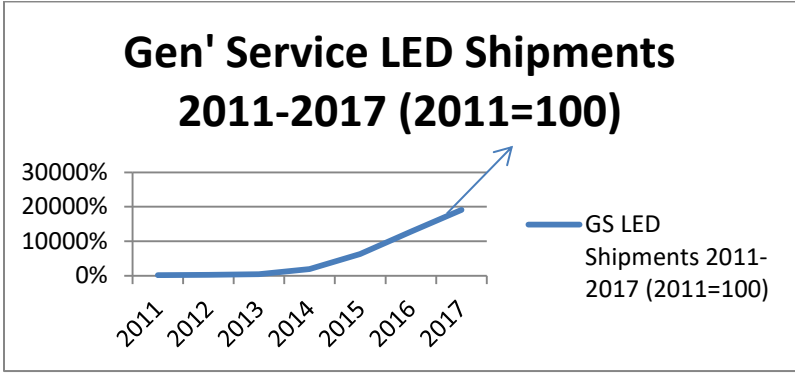
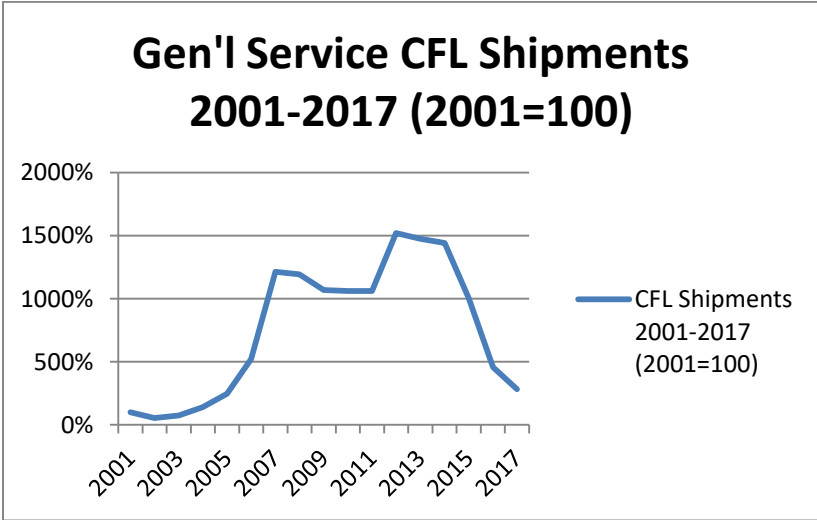
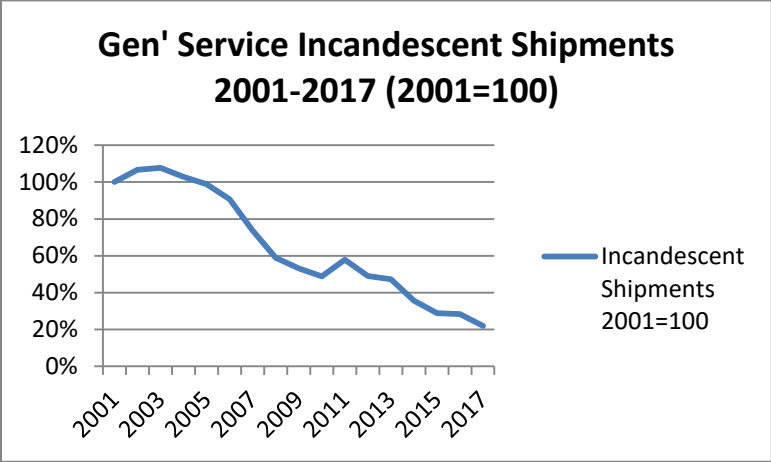
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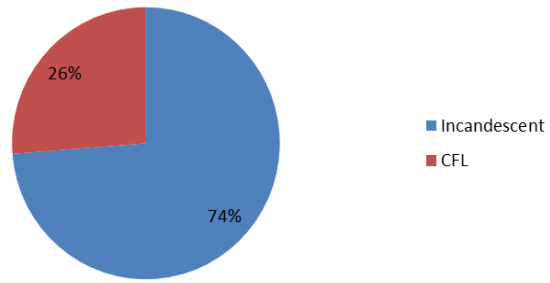
Kevin J. Cosgriff  
President and CEO

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<sup>11</sup> Also contributing to bringing down some of the costs of manufacturing LED lighting has been the public investments through the Next Generation Lighting Initiative enacted as part of the Energy Policy Act of 2005, 109 P.L. 58 sec. 912, 119 Stat. 858 (Aug. 8, 2005).



**Relative Percent GSL Stock 2008**



**Relative Percent GSL Stock 2018**

