Statement of the National Electrical Manufacturers Association

Before the

Senate Committee on Energy and Natural Resources

September 12, 2007

Energy Efficient Lighting for A Brighter Tomorrow Act of 2007 (S. 2017)

Chairman Bingaman and Members of the Committee,

On behalf of the National Electrical Manufacturers Association, I am Kyle Pitsor, NEMA vice president of government relations. NEMA is the national trade association representing the electrical manufacturing industry. Founded in 1926 and headquartered in Rosslyn, Virginia, our 450 member companies manufacture products used in the generation, transmission, distribution, control, and end-use of electricity. These products are used in the utility, medical imaging, industrial, commercial, institutional, and residential markets.

NEMA members are at the very heart of our national effort to reduce energy use through the research, development, manufacturing, and deployment of energy-efficient products and technologies. Significant for today's hearing, NEMA is the association for the U.S. lighting industry representing light bulb (lamp) manufacturers. The NEMA Lamp Section consists of 15 companies that sell over 95 percent of light bulbs used in the U.S. NEMA members are engaged in all the various types of light bulb technologies – incandescent (including halogen), fluorescent, high intensity discharge, and solid state (e.g., LEDs or light emitting diodes) -- and serve all lighting application markets.

Mr. Chairman, earlier this year the NEMA Lamp Section announced a joint industry commitment to advance public policies that would transform the U.S. market to more

energy-efficient lighting within a decade. Lighting use in the U.S. consumes 20-22 percent of all electricity generated. Based on Department of Energy data, 765 billion kWh of energy is used annually in the U.S. by lighting systems, and about twice that much is lost as heat in the production and transmission of that electricity. Put another way, every time you save **1** watt with lighting, the utility will also save the equivalent amount of fuel it takes to produce **3** watts of power, Thirty percent of the energy consumed in an office building is from lighting use, and 5-10 percent of residential energy use is for lighting. There are about 4 billion medium screw-base general service light bulbs installed in the U.S. with 79% of these found in residences.

Given the significance of lighting in our economy, NEMA views any lighting market transformation as a matter of national importance that must come about through a federal solution by setting technology-neutral, performance-based standards that would eliminate today's inefficient general service light bulbs from the market. A Federal regime is crucial in this area, since a host of state legislatures stretching from Connecticut and Rhode Island to California and Nevada have been considering widely varied state regulations that are sometimes unworkable, raising the specter of a patchwork of unwieldy and conflicting mandates that would complicate manufacturing, distribution and retailing, and create customer confusion. We look to the Senate for action due the ambiguity in the preemption provision for light bulbs in the recently passed House energy bill.

We support S. 2017's focus on general service light bulbs. This is where the greatest energy savings can be attained on a national scale. The entire discussion of "phase out of least efficient general service light bulbs" has been at the industry's initiative. This is not a case of manufacturers dragging their heels, but of leading the way. New standards-setting legislation is needed in order to further educate consumers on the benefits of energy-efficient products. Importantly, the legislation will provide manufacturers certainty in order to schedule investments for transforming the market.

In the U.S., NEMA members sold about 1.7 billion medium screw-based light bulbs in 2006. Of that 1.7 billion, about 1.5 billion were incandescent bulbs and 200 million were compact fluorescent lights (CFLs). CFL screw-based types represented about 10% of the market in 2006, having grown about 50% per year since 2000. U.S. production is over 4 million light bulbs daily, with CFLs and additional bulbs imported. NEMA member manufacturers propose replacing today's least efficient light bulbs with a combination of products that will provide consumers multiple product choices. The replacement light sources will be a combination of compact fluorescent and new technologies, including high-efficiency halogen, high-efficiency incandescent, and high-brightness light emitting diodes (LEDs). This choice is important for several reasons. Compact fluorescent lamps, while relatively efficient, are relatively deficient in color rendering (especially red), tend to be larger than incandescent lamps (giving rise to "fit" issues in existing lighting fixtures), have low light output in exceptionally hot or cold conditions, and, in general, cannot be dimmed since they are not compatible with dimmers.

Meeting demand for replacement products and providing consumer education on the new lighting products will be a difficult, challenging, and sustained task. Accordingly, the legislation needs to provide for an orderly and phased national approach in order for the transformation to be successful. S. 2107 currently proposes to start the phase-in on January 1, 2012, and for it to be complete in 2 years (by January 1, 2014). NEMA proposes that the phase-in begin on January 1, 2012, and be completed in 3 years (by January 1, 2015).

Neither industry nor regulators will be able to reliably predict the dynamics of market acceptance of the different kinds of replacement lamps. Manufacturers must be able to "learn as we go" in order to be prepared to build the right manufacturing and commercial capacity to meet market demand prudently. A sound phase-in period would allow industry to evaluate market responses and act accordingly. A 3-year transition period would be eminently reasonable for the interpretation of such new (and likely strong) market forces which necessitate manufacturing responses of a magnitude not previously

seen in this industry. Timing and learning are crucial factors for an orderly and cost effective transition to a new array of products that are taken for granted in today's vast consumer market.

While we support the beginning of the phase-in on January 1, 2012, the bill also targets the 40 watt category to be effective January 1, 2014. The 2014 target date presents a serious problem for the manufacturers. For the reasons below, NEMA recommends that a one-year interval between the 60 and 40 watt effective dates be adopted, with the 40 watt category effective date set at January 1, 2015.

This timetable is absolutely crucial for U.S. manufacturing conversion. Industry projects that the halogen technology suitable for replacing the 100 watt, 75 watt, and 60 watt general service lamps will not likely be applicable for the 40 watt replacement. For good color rendering and dimmable replacement light bulbs, an entirely new technology will have to be introduced. Moreover, pegging the phase-out to 2015 only impacts 12 percent of general service light bulbs sold today.

For each of the product categories, before the new halogen and high efficiency incandescent bulbs can be sold, the manufacturers must design, build, and install new production equipment for each product line, retire or re-purpose existing equipment, determine the cost impact of stranded investments, ensure suppliers of new raw materials and components are evaluated, invest in new packaging designs, safety test and qualify the new products for market, and address production capacity needs. In addition, extensive work force adjustments must be undertaken for the new facilities.

Phasing is also needed for retailers and consumers. Manufacturers will need to undertake massive education programs to ensure that retailers and consumers understand how the new lower wattage products should be promoted and used. Furthermore, phasing helps consumers transition from today's world where a 25 cent light bulb is taken for granted to a new world where a light bulb is an investment .

Let me now turn to the bill's efficiency standards. With light bulbs, the best way to save energy is to reduce connected load; that is "watts." This bill does that by setting a maximum wattage that any bulb can consume for a given lumen range (amount of light from the bulb). We estimate that U.S. consumers will save over 50% of the energy now used annually if the bill's standards become law. This strategy is superior to a minimum lumens-per-watt (LPW) approach which was made part of the House-passed bill (H.R. 3221). An LPW approach may have the perverse effect of driving consumers to buying higher wattage light bulbs which would result in more – not less -- electrical consumption. This is the wrong direction.

The Senate's proposed wattage cap with a lumen range approach is also technology neutral and allows manufacturers the ability to offer a range of products to consumers using different technologies. The lumen ranges proposed in the bill are consistent with consumer experience with today's general service categories of 100, 75, 60 and 40 watt light bulbs thereby providing consumers with the same quantity of light while using significantly less energy.

As in most other appliance standards legislation, S. 2017 sets the initial standards levels, and then directs the Department of Energy (DOE) to conduct follow-on rulemakings to determine if the standards should be amended in the future. In this bill, two follow-on rulemakings are included. One is scheduled to be effective on January 2, 2020, and a second to be effective on January 1, 2025. The bill includes a "back-stop standard" that would automatically become the 2020 standard if DOE missed its statutory rulemaking deadline. The bill's language would establish the 2020 standard at 45 LPW.

NEMA strongly opposes setting a minimum 45 LPW performance standard now, to be effective in 2020. A 45 LPW standard would essentially permit only compact fluorescent lights (CFLs), based on today's manufacturers' projection of technical feasibility and market acceptance, including cost. Manufacturers have the expertise necessary to best make those assessments. Further, these CFLs have the previously

mentioned performance limitations and are overwhelmingly sourced from China. The proposed 45 LPW standard would also have the effect of outlawing the new high-efficiency halogen and new high-efficiency incandescent products that the industry will be introducing only 5-8 years earlier. This brings into question whether industry would be willing to undertake new product investment at all if this becomes law, and if so, at what price to the consumer. NEMA does not support mandating in 2007 what the new product efficiency standard should be in 2020, given that this is 13 years into the future. We are committed to work with the Congress and stakeholders to ensure that DOE stays on schedule.

We note that while the bill is properly focused on transforming the general service light bulb market, it also does set up a process to track exempted or specialty light bulbs, and for additional standards to be imposed if abnormal market growth develops. This is important to ensure that non-general service application bulbs do not become a means to circumvent the transformation to energy-efficient products for general lighting applications. We also note that the bill provides the opportunity to petition DOE to undertake a rulemaking on products not initially covered by the standards if such products become used in general service applications.

NEMA supports the bill's provision for new consumer labeling of these new light bulbs to better assist consumers in making the right choices for their lighting needs, and the bill's provision to allow States, as well as the Federal Government, to enforce these national light bulb standards.

Title II of the bill incorporates a consensus standard developed by NEMA and the American Council for an Energy-Efficient Economy (ACEEE). This consensus standard would set for the first time new federal standards on certain metal halide lighting fixtures. A similar provision was incorporated in H.R. 3221 which passed the House of Representatives on August 4, 2007. NEMA supports this provision.

Mr. Chairman, in closing, let me thank you for introducing this significant bill. One estimate that I have seen suggests this bill, by itself, is the single largest source of energy savings from any appliance efficiency standard to date. Moreover, the energy savings are nearly as large as the combined energy savings from ALL federal appliance standards adopted from 1987 through 2000 (88 billion kWh/year).

NEMA looks forward to working with you and the Committee to address the issues we raised in our testimony, and to support legislation to provide for national energy efficiency standards for medium screw-base general service lamps. I would be pleased to address any questions. Thank you.