



## NRDC Comments on the EU Eco-Design Requirements for General Service Lighting

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I am writing on behalf of the Natural Resources Defense Council (NRDC), a leading US based environmental advocacy group with more than 1.2 million members and online activists, **to express our strong support for Options 1 and 2 that were proposed for the eco-design requirements for general lighting.** NRDC was the lead energy efficiency advocate that participated in the US negotiations with industry and members of Congress that led to the passage of national legislation in December 2007 that will phase out today's inefficient incandescent screw-based light bulbs. Below we provide some high level feedback on the proposals being considered in the EU as well as some lessons learned from the US negotiations that could be useful as the EU finalizes its requirements.

The main elements related to setting minimum efficiency standards for everyday light bulbs include:

- scope – what exactly is covered and what is exempted, or provided “special” treatment,
- structure of the standard,
- stringency of the standard,
- effective dates, and
- ensuring compliance with the standard.

Scope – As we understand the proposals that were developed by the EU's consultants, the standard addresses lamps with a wide range of lamp bases, also referred to as caps. This approach makes sense to us and does not replicate the lighting industry's preferred approach in the US of limiting the proposal to a list of narrowly defined lamp shapes. This would have created the possibility for loopholes that allow inefficient lamps to enter the market and escape regulation simply by making a lamp a little wider or narrower in different places. We previously suffered this experience in the US, whereby a new class of reflector lamps with a slight geometry change was introduced into the market and we lost considerable energy savings.

To prevent a creative company from creating a two piece inefficient light bulb in the future as a means to escape regulation, we encourage the EU to ban adapters, as was done in the US. This prohibition would prevent someone from introducing an inefficient bulb with a new base that could easily be inserted into an inexpensive adapter that would snap or twist into the existing socket. We provide below the language used in the US as a model for your consideration:

*No manufacturer, distributor, retailer, or private labeler may distribute in commerce an adapter that is designed to allow an inefficient incandescent lamp that does not have a medium screw base to be installed into a fixture or lampholder with a medium screw base socket.*

Some lamp manufacturers in the US and elsewhere are heavily promoting lamps marketed as “enhanced spectrum,” “modified spectrum,” or “full spectrum”. These lamps simply have a bluish coating applied to the glass that slightly alters the spectral distribution of the light that is emitted. Although the cost of this coating is nominal, these bulbs are sold at much higher prices than conventional lamps.

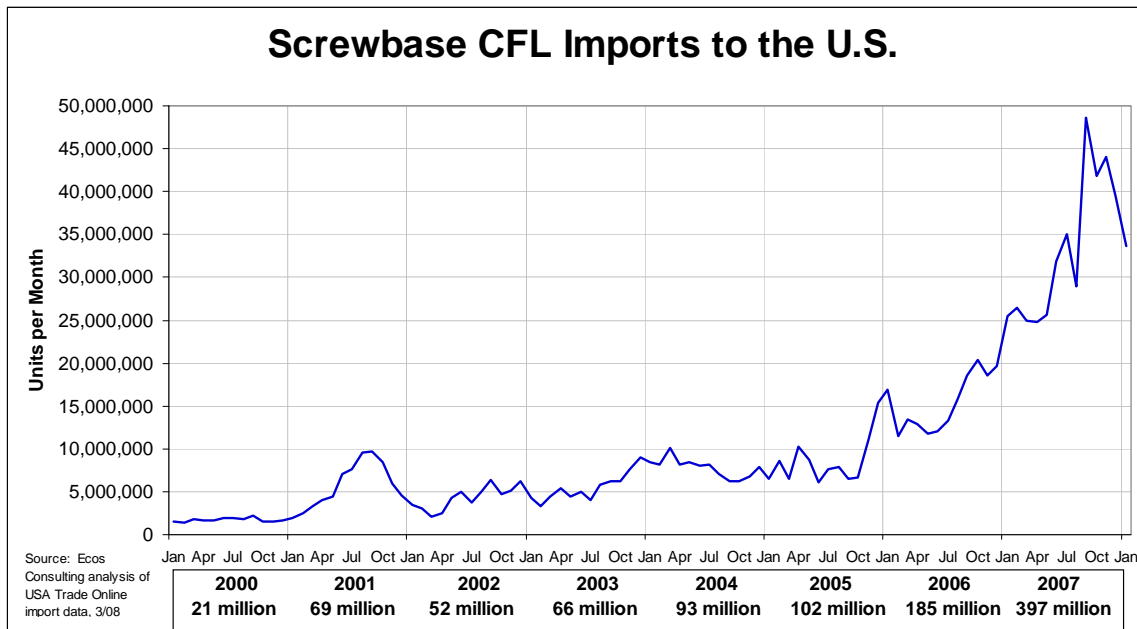
While we were able to prevent these lamps from being exempted from the federal regulations as some of the big three lamp manufacturers had initially proposed, the first phase of the US standards provide a much weaker efficiency requirement for this sub-category of bulbs. As a result of this allowance, the modified spectrum lamps under Phase 1 of the standard will be no more efficient than today’s conventional incandescent lamps.

*We believe the EU draft proposals correctly include modified spectrum and lightly colored lamps as being covered by these regulations and subject to the same efficiency requirements as bulbs with a different spectral profile.* We have extensive data on the efficiencies, cost, market share and performance of these bulbs and are available to discuss this with interested EU stakeholders at any time.

*Stringency* - We have reviewed the three options contained in Annex 2 and encourage the EU decision makers to narrow their choice to either Options 1 or 2. *We urge against adoption of Option 3 as it yields roughly 40% lower energy and carbon savings than the other two options, and allows the ongoing sale of modestly efficient halogen lamps of all varieties and light output levels.* (See timing section below for comments on the stringency of the industry proposal.)

Options 1 and 2 also send a very positive signal to the manufacturers of very efficient products such as CFLs, LEDs and other potential new technologies that there will be a positive marketplace for these products and that they won’t have to compete with the less efficient products that may also have a lower first cost. Selecting Option 3 may well have the opposite effect and discourage or delay manufacturer’s investments in efficient lamp R&D and production facilities.

**Timing** – We believe the five year transition period you propose to provide to the lighting industry is more than sufficient to achieve the necessary production changes that are needed. In most cases the complying bulbs are already being produced and the remaining challenge is adding additional manufacturing capacity. While many have forecasted a lack of compliant bulbs, in particular for CFLs, we want to assure you that high quality CFL production has increased dramatically over the past 3 years and the industry has learned how to scale up with short advance notice. For example, US sales of ENERGY STAR qualified CFLs have increased from < 100 million lamps per year to roughly 400 million CFLs/yr in just the past three years, with much of this production coming from new production lines (see Figure below).



The industry proposal is inadequate because:

- it does not address well over half the market until 6 years from today, and takes a full 9 years until it is completely in effect, and
- it does not go far enough, as it allows continued sales of Level C medium light output halogens, which are improved from today’s offering, but are still not very energy efficient, after the standard is fully in effect in 2017.

**Structure** – The EU proposals establish a series of continuous lines or curves that specify maximum allowable lamp power (watts) for any given light output level (lumens). NRDC supports standards that follow this approach, or that establish continuous lines or curves specifying minimum allowable luminous efficacy (lumens/watt) for any given light output level (lumens). Both approaches recognize the inherent physics of lighting – the light sources tend to become more efficient as they get brighter. It is far preferable to the “lumen bin” approach that was developed by the lighting industry and included in the US federal standard. The US approach is a potentially gameable system and will likely result in manufacturers complying with the new requirements in part by offering dimmer,

less efficient bulbs. We strongly urge you not to waver from your currently proposed structure; continuous lines or curves are preferable to fixed wattage caps across broad lumen bins.

Ensuring Compliance – As many of us have experienced, not all CFLs are created equal. There are some that perform very well and meet all the efficiency and performance requirements and others that don't provide the amount of light promised or fail prematurely. We can expect similar challenges in the near future with the emergence of new technologies, in particular LEDs during their infancy.

In the US we have instituted a comprehensive off-the-shelf QA testing program called PEARL (Program for the Evaluation and Analysis of Residential Lighting) to verify whether ENERGY STAR qualified CFLs are meeting the specification requirements. Those lamps that fail the testing are delisted from the ENERGY STAR list and lose their eligibility for rebates that are offered by utilities. The key to this program is that the samples that are tested are purchased off the shelf at retail, and not those provided by the manufacturer. Our experience has shown dramatically higher compliance rates with ENERGY STAR since the PEARL testing program was initiated. We can provide you with summary data from this testing program if that would be useful.

We encourage EU policymakers to include some form of compliance testing (also called check testing) as part of the implementation of its lighting requirements. This will require a stream of dedicated funding to procure and test the lamps, as well as clearly defined protocols on what is being tested, data distribution, and what actions will be taken for lamps that do not meet the EU requirements.