NRDC Comments on ENERGY STAR's Version 1.0, Draft 3 Light Bulb Specification

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January 18, 2013

On behalf of the Natural Resources Defense Council (NRDC) and it's more than 1.3 million members and electronic activists, we respectfully submit our comments on ENERGY STAR's Version 1.0, Draft 3 Product Specification for energy efficient light bulbs.[1] NRDC broadly supports EPA's latest draft which provides tightened technical requirements for several parameters from the current CFL and LED specifications and provides additional clarity on several aspects of the specification such as sample size and the number of samples that must pass each test.

Below we provide specific comments for EPA's consideration on the following topics:

- Dimming – reiterate our support for inclusion of dimming requirements and recommendations for additional guidance regarding the selection of dimmers that testing is performed on and how to label non-dimmable products.

- Run-up time – need to reinsert previously existing "midpoint" testing requirement for minimum light output at a point earlier than 60 seconds.

- Lumen maintenance – support for changes in current draft regarding 1,000 hour test point for CFLs and inclusion of number of samples that must pass in addition to meeting the required average.

- Data reporting – need to include form for manufacturers/test labs to complete to ensure all relevant information is provided, in particular data on dimmers used during testing.

[1] Our comments supplement NRDC's previously submitted comments dated December 9, 2011and August 24, 2012.

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- Rapid cycle switching – support for doubling the number of cycles required to pass compared to current ENERGY STAR CFL specification.

Dimming – NRDC has consistently advocated for inclusion of some basic dimming requirements in Version 1 of the light bulb specification and we commend EPA for developing and including such requirements in this document. Given the limited time available, we support EPA's decision to initially focus on the most critical aspects of dimming in this specification: a) dimming range – ensure a lamp marketed as dimmable actually dims, b) noise, and c) flicker. Areas of the dimming section where additional improvement is needed include:

- Selection of dimmers to be used in the test – Throughout the specification development process NRDC has urged EPA to require the dimming testing to include commonly installed dimmers and to prevent the manufacture from selecting a rare, niche dimmer or to only select newer models meant to dim energy efficient lamps (which would unfairly require consumers to replace their dimmer when buying a new bulb). While EPA provides some guidance to manufacturers on what dimmers to select for testing, we believe additional guidance and requirements are needed as follows:

    1. *3 different manufacturers* – we support this requirement and recommend inclusion of additional language preventing the use of three identical dimmers that are marketed/rebranded as different products. The models selected, regardless of brand, must be unique products.

    2. *At least one must be specified for use with energy efficient lighting* – EPA should define energy efficient lighting as those that are at least 45 lumens per watt. Without such a requirement a manufacturer could argue that a dimmer meant to work with today's new incandescents that use 25% less power than traditional incandescents meets this requirement. These improved incandescents from our perspective do not qualify as energy efficient lighting.

    3. *At least one dimmer must be of the following types*: *single phase shift… reverse phase* – As we read this requirement a manufacturer could pick nine of the dimmers to be tested from just one of these dimmer types. We think it would be more appropriate for EPA to further group these dimmers and require 3 from this group, and 3 from that group. To inform this decision, EPA should attempt to quickly gather semi quantitative market share data on these various dimmer types. Without such information, the manufacturer may be able to test a dimmer type with extremely low installation rates which could result in poor dimming and a bad experience by the majority of customers selecting this bulb. If technically justified, we would not oppose EPA reducing the number of

dimmers that must be tested as part of its qualification process as a means to reduce testing costs.

- Non dimmable bulbs – We support EPA's labeling requirement that non dimmable bulbs state that they are non dimmable on the front panel of the package. To ensure consumers see this, we think EPA should also require minimum font/size requirements.

- Inclusion of "pop on" requirement - The other parameter that we continue to think EPA can include at this time is a requirement for "pop on", which will ensure the dimmable lamp can be turned back on from the dimmed position. Development of the testing requirement can be done very quickly and would basically say, "turn off the lamp from the dimmed position (e.g. 20% of full measured light output), wait x seconds and push the dimmer switch (without resetting the dimmer location) and record whether or not the lamp restarts. If EPA is unable to add this requirement in this version of the specification we recommend it be included in Version 2 of the specification.

- Number of lamps to be used during the test – One key piece still under development is the test method to be used to assess dimming performance. We encourage EPA to convene a call of interested stake holders to assess the results of round robin testing being done with 1 or 4 bulbs on the circuit. Prior to seeing the data, it is our hypothesis that A-lamps are commonly used in fixtures with 1 or 2 lamps on a circuit such as a table lamp, whereas reflector/down lights are more commonly used on a circuit with multiple sockets, typically around 4. If multiple sockets are to be used in the circuit used for testing, we request that only the lamps under test be used in the circuit and NOT for example allow a 100W incandescent or other lamp meant to artificially boost the overall wattage of the lamps in the circuit and enhance dimming performance.

- Reporting – Manufacturers and testing laboratories should be required to report the actual dimmers supplied and used for testing and provide the results of testing for each dimmer tested (as opposed to simply saying all 10 passed, or the average minimum light output for all 10 dimmers was X). This data will help inform EPA when it develops its next update of the specification.

Lumen Maintenance Requirements – NRDC supports EPA's revised position on lumen maintenance whereby:

- CFLs continue to have a minimum lifetime requirement of 10,000 hours

- Reinsertion of lumen maintenance testing and reporting at 1,000 hours. As these lamps are meant to provide long life, lamps that fail or suffer from accelerated lumen depreciation after only one year should not be able to earn the ESTAR

label. In addition, this testing point allows faster detection of problems during verification testing and the ability to disqualify lamps sooner that waiting for 40% of rated life testing results.

- Support for new requirements that: all samples shall survive at 1000 hours, that at least 9 out of 10 of the surviving samples shall meet the minimum lumen maintenance requirement for the designated life claim and that no more than 3 samples may have lumen maintenance <75% at 40% of rated life.

CFL Run-Up Time – NRDC strongly supports ENERGY STAR's efforts to speed up CFL run-up time. In order to better address consumer frustration of very low light levels after the light is first turned on, we recommend EPA reinsert the requirement for a mid point run up time requirement set at 30 seconds. This will help ensure lamps don't stay unacceptably dark for almost a minute for uncovered lamps and 2 minutes for covered lamps, thereby frustrating the consumer. EPA should consult with leading lamp manufacturers such as TCP, which produces more than 2/3 of all CFLs sold in the US and which offers bulbs with very steep run up curves whereby a high % of full light output is reached with the first 15 to 30 seconds.

Rapid Cycle Stress Test – NRDC reiterates its supports for ENERGY STAR's proposal to increase the number of switching cycles a lamp must survive to qualify for ENERGY STAR. The new specification requires the lamp survive one cycle for each hour of rated life (up to 15,000), whereas the older spec only requires survival of one cycle for every 2 hours of rated life. This requirement should help remove lamps with inferior electronics from qualifying for the specification.

Inclusion of MR-16 lamps – NRDC was one of the initial proponents of adding the increasingly popular MR-16 lamp category to the ENERGY STAR program. These lamps are extremely popular in new and remodeled commercial buildings and residential homes, both in common areas and living space and we reiterate our support for EPA to cover them within the scope of the specification.