# Feedback on Proposed Reporting Requirements

March 2015

This memo summarizes the feedback received regarding the draft Lighting Global reporting requirements as proposed to stakeholders in December 2014. Over the month-long comment period, nine stakeholders provided feedback, representing six different manufacturers, one distributor, one test laboratory, and one development agency.

Respondents generally agreed with the proposed requirements to report brightness, runtime, the effect of mobile phone charging, the battery chemistry and the product's warranty on the product packaging (Figure 1). Though respondents generally supported the policy, many suggested changes to the initial proposal, including additional reporting requirements, removal of requirements, and changes to the design requirements. These suggestions are presented below, organized by category.

A synthesis of comments on each question or sub-topic is presented, along with responses from the Lighting Global team. While some text was altered from the original submissions, alterations were not intended to change the meaning of the comment, but only to condense responses and protect the anonymity of the respondent. Similar comments from multiple stakeholders were combined.
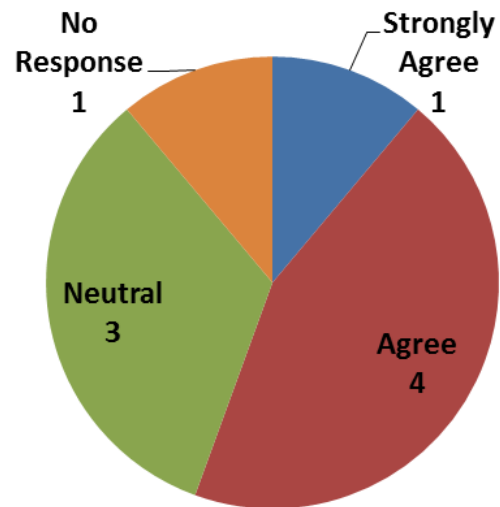
Figure 1. Do you agree with the proposed requirements to report brightness, runtime, the effect of mobile phone charging, the battery chemistry, and the product's warranty on product packaging?

ADDITIONAL METRICS SUGGESTED

The following comments were provided when respondents were asked if any additional metrics should also be required to be reported on the box:

- Is the battery replaceable? Many consumers ask this question, while many manufacturers are hiding this important detail.
- CRI (Color Rendering Index). This parameter is very important for the real-world quality of light in day-to-day life and is a basic metric for lighting. Try viewing objects using a light with CRI 60 and a light with CRI 90 to see the importance of this metric.
- Light color
- Room vs. task light
- Does the light dim as the battery discharges?

- Battery cycle life and lifetime (e.g. 2000 cycles = 5 years). Cycle life and lifetime are more relevant to customers than the battery chemistry.
- Battery charging time. A parameter for the battery charging time should also be mentioned for different types of charging such as solar charging, grid charging and mechanical charging. For example, the product gets fully charged after 5 hours using the grid adapter.
- The consumer should be made aware that solar radiation varies, and that therefore the run-time can be lower on non-sunny days. This caveat could be phrased in an accessible way (like "non-sunny days"), and not as "conditions can vary," which would be too vague.
- Information on recycling and disposal of the products
- Nothing should be added, instead there should be less required for consumer-facing materials than what are proposed

> **Lighting Global Response:**
> In the interest of expediting the release of this policy, we have decided not to add additional metrics at this time. We appreciate the suggestions listed above and are interested in discussing them at a later date.
>
> Many of the metrics suggested are currently provided on a product's Lighting Global Specifications Sheet, making them accessible to many actors in the supply chain. These metrics include: whether or not the battery is replaceable, the CRI, and the color temperature (CCT; an indication of light color). In our testing programs, we do not currently test the battery charging time, the cycle life of a battery, or to see if the light dims as the battery discharges. Including these metrics on the Specs Sheets or as Reporting Requirements would necessitate substantial alterations to the test methods.
>
> We believe it would be best to discuss some of the other suggestions, such as the warning about "non-sunny days" and recycling information, at an open forum, such as the upcoming off-grid lighting conference in October. This same forum could be used to discuss the addition of the other suggested metrics.

METRICS THAT SHOULD NOT BE REQUIRED

Three respondents suggested that the "effect of mobile phone charging" should not be included, two stated that the "battery chemistry" should not be required, and one stated that the "full warranty terms" should not be required. No one suggested that brightness or runtime should not be required. More detailed comments on each of these categories are provided below.
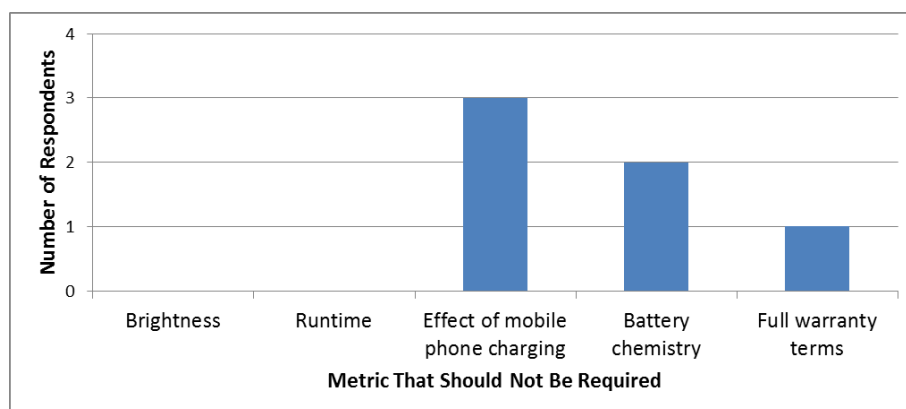

Figure 2. Are there any proposed metrics you think should not be required?

BRIGHTNESS AND RUNTIME
Four respondents provided direct comments regarding the brightness and runtime reporting requirements. Two affirmed that they agreed with the proposed requirement. One said: "Great progress – finally!," and noted that CRI should also be included as it is an important metric for lighting.

The fourth respondent noted that they think the policy is reasonable, though they interpreted the policy to mean that they could either report brightness in lumens or in comparative equivalents. The respondent felt that a comparison to candles or kerosene lamps is much more relevant and easy for consumers to comprehend than a rating in lumens.

Comparative Levels of Brightness
Four respondents provided direct feedback on the proposed comparative levels of brightness. Three agreed with the proposed comparisons, while one clarified that it is helpful to standardize these metrics as long as there is no requirement to use them. The fourth respondent noted that "people are more interested in how close a solar solution brings them to the aspirational home lighting that they saw in cities," presumably noting that the suggested comparisons were to candles and kerosene rather than grid lighting.

Lighting Global Response:
We are encouraged that all respondents supported the requirement to report brightness and runtime on the product packaging. To be clear, all products would need to report brightness in lumens, but may choose to also report in comparative levels of brightness. We will re-word the policy to clarify this point.

To address the comment that consumers are more interested in aspirational lighting, we will also provide standard comparisons for grid lighting. These additional equivalents are:
- Incandescent bulb = 900 lumens (this is based on a 60 W bulb)
- Compact Fluorescent bulb (CFL) = 900 lumens (this is based on a 13 W bulb)[1]

As mentioned, other standardized comparisons may be included in consultation with the Lighting Global team.

EFFECT OF MOBILE PHONE CHARGING
Five respondents commented on this metric. Two noted that consumers are not likely aware of this trade-off, making the warning message important. One of these respondents suggested that the trade-off between light and mobile phone charging should be described quantitatively in a standardized manner to minimize confusion.

As noted above, three did not think a message regarding the effect of mobile phone charging should be required. One of these respondents noted that this requirement could be hard to enforce, given that it requires the consumer to be able to either read the language of the warning or accurately interpret a graphic.

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[1] These values are based on efficacy (lm/W) estimates from: US Department of Energy. (2013). Lighting Basics. http://energy.gov/eere/energybasics/articles/lighting-basics

Two of these respondents noted that the range in phone batteries and charging efficiencies of mobile phones are too great to make any quantitative statement. One of these respondents suggested that the only reasonable phrase that could be used is, "mobile phone charging compromises light performance," while the other suggested, "mobile phone charging can reduce from 10% to 30 % the daily runtime of the lights".

> **Lighting Global Response:**
> We feel that a message related to the impact of mobile phone charging is appropriate to include. As stated in the policy, this message does not need to be quantitative, but is intended to ensure that the consumer is aware of the tradeoff between using the available stored energy for lighting or other services. A statement such as, "mobile phone charging can reduce the daily runtime of the lights," would be acceptable. We will be available to review statements or graphics prior printing to advise the manufacturer on whether the graphic would meet our requirement.

BATTERY CHEMISTRY

Five respondents commented about the battery chemistry requirement, and, as noted above, two of these stated that the metric should not be required. Four commented that battery chemistry is useful information for trade partners and experts in the field, but is not very relevant, and is potentially confusing, for end-consumers. Several suggested that this information should continue to be included on the Specification Sheet, but does not need to be placed on the product packaging.

Two respondents further noted that the terminology around battery chemistry can be confusing. For instance, Lithium-ion is not a specific chemistry, but rather a group description. Also abbreviations, such as SLA (Sealed Lead Acid) may not be widely recognized, and descriptions of proprietary battery types may not reveal the chemistry or any information about the battery. If a battery requirement were in place, the full name of the battery type should be used and the potentially, the main chemical element should be required to be listed (e.g., Li, P, NiMH, etc.)

One of these respondents further elaborated to say that rather than the battery chemistry, the battery cycle life and lifetime should be reported (e.g. 2000 cycles = 5 years). These are metrics that consumers care about and determine the lifetime of the product. The respondent suggested that mobile phone batteries, which typically lose capacity after 1.5 years or 400 cycles could be used as comparative point of reference to make the metric more tangible to consumers.

> **Lighting Global Response:**
> Based on the feedback that this metric is not commonly relevant to the end-consumer, and that on-the-box space for reporting requirements is limited, we have decided to remove the reporting requirement for battery chemistry. We will continue to report the battery chemistry on the Specs Sheets and the website.
>
> As noted above, we agree that battery cycle life and battery lifetime are important metrics that are more relevant to the consumer, but we do not currently test these metrics and would not be comfortable including a technical metric in the reporting requirements that we have not verified through testing. While battery cycling and lifetime tests are important, they are both equipment and time intensive, making them quite expensive. In our efforts to keep the testing time and costs low, we do not feel that it is appropriate to include them in our product evaluation test methods.

WARRANTY REQUIREMENT

Four respondents provided comments regarding the proposed warranty requirement and one of these stated that the metric should not be required. Three of the respondents all noted that including the "full warranty terms" would demand too much space on the box or the inclusion of a separate warranty card, which represents an extra cost. Two of these felt that even the inclusion of the simplified warranty details on the box would require too much space.

Respondents instead proposed that the length of the warranty could be displayed with at least 10 point font, while allowing the warranty details to be written in a smaller font, or placed inside the packaging.

Another respondent stated that they agreed with the proposed warranty requirements, but wanted to clarify that the warranty requirements only applied to the solar lights and solar systems, not to any non-lighting appliances that might be bundled with the system or sold separately.

> **Lighting Global Response:**
> We believe that the warranty policy adequately addresses the concerns about the available space, though the text of the policy may need some clarification. The consumer-facing warranty terms may be on the box, or on a card or paper that can be accessed prior to purchase, or some combination thereof. The key requirement is that the terms must be displayed in a way that enables the end user to verify and understand the terms of the warranty prior to purchase.
>
> In terms of whether non-lighting appliances would need to be covered with the warranty, we can confirm that at this time, only the lighting appliances and solar system components (battery, control system/electronics, PV module, cables, etc.) would be expected to be covered by the warranty.

DESIGN REQUIREMENTS

Seven of the respondents agreed or felt indifferent about the design requirements, while two disagreed (Figure 3). Six provided comments on the proposed design requirements. One of the respondents stated their approval of the requirements saying, "Great that this gives the companies flexibility to present the information in a manner consistent with their brands. Some requirements seem a bit ambiguous / subjective, but that is probably OK to start with." One of those who disagreed with the requirements stated the opposite: "You need to define common header titles to make it easier for people to find important information and compare. For example, light performance can always be found under the 'light performance' title, warranty description under 'warranty terms' title, etc. Otherwise you will see manufacturers hiding those facts inside blocks of text somewhere under 'details about products' or similar."
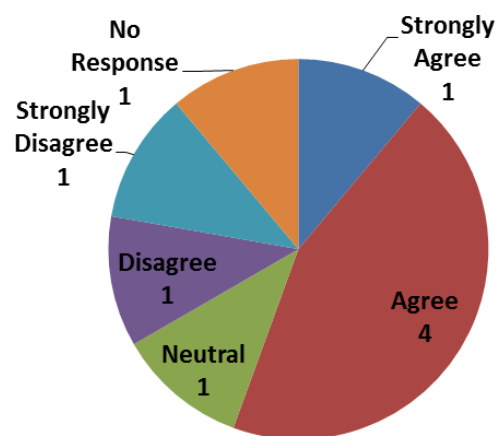

Figure 3. Do you agree with the proposed design requirements describing how the metrics must be reported?

Three other respondents commented that the 10 point font requirement was too large, especially for smaller products. One suggested that the font requirement could scale relative to the size of the box or product, while the other two suggested that 6 point font is generally considered legible. A fourth respondent stated that they disagreed that the bottom of the box was not a prominent place.

Lighting Global Response:
The design requirements we proposed attempt to strike a balance between placing requirements on manufacturers and allowing manufacturers to present the metrics in a manner that best meets their needs. We recognize that many manufacturers conduct their own market research and use these findings to effectively design their packaging. While we understand the value of presenting the metrics in a more systemized manner, at this time we believe that simply requiring that the metrics be reported is an appropriate step. Based on the comment that we should require standardized header titles, we have clarified in the policy that, "The name of the metric and the units must be included, for example, "Light Output on High: 75 lm" or "Brightness on highest setting: 75 lumens." A number without the units or an appropriate description is not acceptable."

While we understand concerns about space on the packaging, we have elected to maintain a minimum 10 point font size requirement. In many font styles, 10 point font is quite small, and anything smaller could be difficult for many to read. Additionally, we feel that this information should be prominently displayed and not lost among the "fine print."

The statement regarding the "bottom" of the box was included to provide guidance regarding what we would consider prominent. If a product uses all sides of the box to advertise and market their product, the "bottom" of the box might be a perfectly reasonable and prominent location to display these reporting requirements. We have removed this line from the policy, though will continue to enforce that the metrics be displayed in a prominent location. In a case where the "bottom" of the box has no other information or graphics and the consumer would not be reasonably expected to look at this side of the box prior to purchase, this location would not be considered prominent.

PROPOSED TIMELINE

Eight respondents agreed or felt indifferent about the proposed timeline, while one respondent disagreed with the timeline for implementing these requirements (Figure 4). Two respondents provided comments or asked for clarification. One asked if products that already have a Lighting Global Verification Letter will need to change their packaging within six months, and the other noted that it would be difficult for manufacturers to change the packaging on old stock, even within the 6-month window. They proposed that instead the date of production, rather than the date of shipping should be the date for the proposed 6-months rule, as manufacturers should be allowed to clear old stock as long as they need.
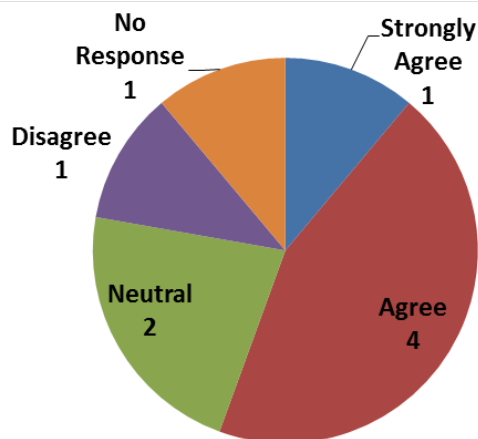

Figure 4. Do you agree with the timeline for compliance with the reporting policy?

Lighting Global Response:
The timeline as proposed would require that products which already have a Lighting Global Verification Letter and Specs Sheet begin including the reporting requirements on their packaging within 6 months of the release of this policy. As this policy was released on March 15th, 2015, products must be in compliance by September 15th, 2015.

We agree that the production date of a product is an appropriate date to use as the reference point for whether a product is compliant with this policy. In other words, if a product is produced after September 15th, 2015, the packaging should include the reporting requirements. If a production date is not evident during product inspection, the shipping date or customs clearance date may be used as a proxy.

Thank you all for your feedback. As noted above, we have revised the Performance Reporting Requirements Policy in response to your feedback and look forward to discussing additional changes in future forums.