

## Stakeholder Feedback on proposal to submit the Quality Standards to the IEC

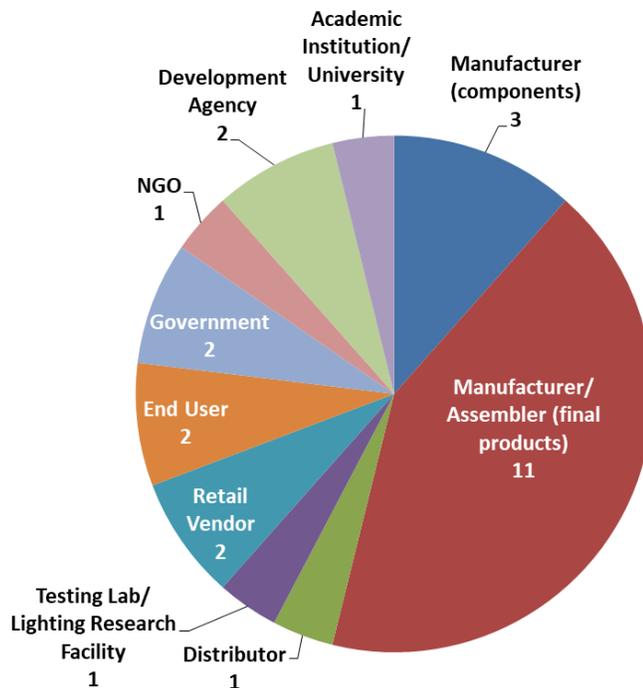
December 2017

### EXECUTIVE SUMMARY

We thank everyone who provided feedback on our proposal to submit the Lighting Global Quality Standards for pico-solar products for adoption by the International Electrotechnical Commission (IEC). In June, we shared a document describing both the advantages and disadvantages of submitting the Quality Standards to the IEC and requested feedback from our broad stakeholder base (see Annex A for additional background information on the Quality Standards and proposal). We received comments from 37 individuals representing 26 organizations with a wide variety of connections to the off-grid sector (Figure 1).

As presented on the next pages, a majority of stakeholders recommended submitting the Lighting Global Quality Standards to the IEC now. Several suggested that we delay the submission, and one said we should not submit them to the IEC.

During the period when we collected this feedback from stakeholders, we have also had separate conversations with government officials in East and West Africa and have talked to other program operators who engage with policy makers. From these conversations, we have received strong support for submitting standards. Many have expressed that this is an urgent need and noted that governments will begin to adopt standards that are not harmonized if there is not a recognized international standard available for adoption soon.



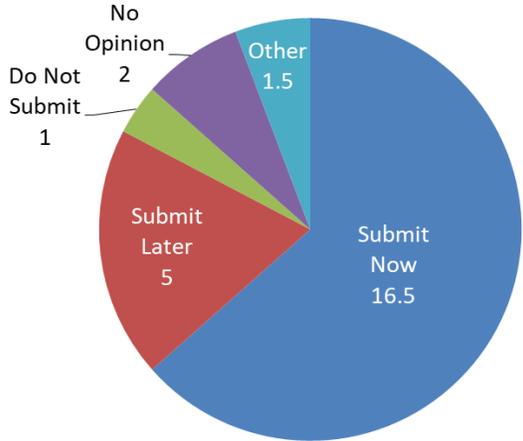
**Figure 1. Responses to: “What is your primary connection to off-grid lighting?”** While the majority of respondents were manufacturers of off-grid products or components, stakeholders from across the sector were represented.

Recognizing this growing urgency and bolstered by the support of a majority of stakeholder respondents, we are likely to submit the Lighting Global Quality Standards to the IEC in the first quarter of 2018. Prior to the submission, we will need to submit a “new item work proposal” to the IEC, prepare the standards in the proper format, ensure that the proposed revision of IEC/TS 62257-9-5 (i.e. the test methods associated with the Lighting Global Quality Standards) will be adopted by IEC, and respond to some outstanding concerns introduced by GOGLA in April 2017. Regarding the proposed revision to IEC/TS 62257-9-5, we expect to know if the revision has been accepted mid-December 2017. We understand that the GOGLA Technology Working Group will be refining their position on the submission of the standards in early January, and we will discuss a final plan with a broader set of stakeholders at the Global Off-Grid Solar Forum and Expo in Hong Kong.

The feedback and these next steps are described in greater detail in the following pages. Following the summary of feedback, we present an analysis regarding some of the comments and questions raised and our plan for management of the Quality Standards going forward. We appreciate all of those who contributed to this effort and look forward to your continued engagement on the subject.

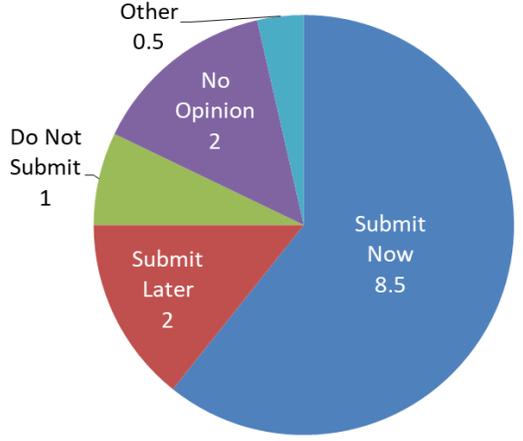
**RESULTS SUMMARY**

The primary question on the survey was, “**please state your recommendation regarding submitting the Quality Standards for pico-solar products to the IEC.**”<sup>1</sup> Results are presented below for all organizations, manufacturers only, and GOGLA members only.



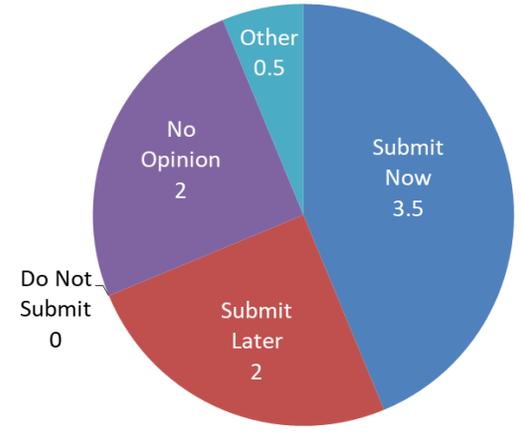
**All Organizations (n=26)**

The majority of respondents recommended submitting the Quality Standards to the IEC now, while only one respondent felt the standards should not be submitted to the IEC. Five organizations suggested delaying the submission, while 1 ½ provided more nuanced responses, which are included in the comments on the following pages.



**Manufacturers of off-grid products or components (n=14)**

As manufacturers were the largest category of respondents, we were interested to understand the proportion of manufacturers in favor of the proposal. The distribution was similar to that of all organizations, with a majority recommending we “submit now.”



**GOGLA members (n=8)**

The Global Off-Grid Lighting Association (GOGLA) provides a voice for the industry. Though GOGLA did not submit an aggregated opinion, several of its members provided comments. Again we were interested to understand the distribution of their opinions and found a smaller proportion of GOGLA members were in favor of submitting the standards now, but none opposed submitting the standards.

<sup>1</sup> Note, though we reviewed all comments, for the summary statistics responses from the same organization were combined. In all but one case, all responses from the same organization were in alignment. In this single case in which the respondents’ answers diverged, both responses from the one organization were included in the summary figures as ½ of a vote each.

## DETAILED COMMENTS

All stakeholder comments related to the submission of the standards to the IEC are documented below.<sup>2</sup> 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. Comments are separated according to those provided by individuals who recommended that we submit the standards now, delay submitting the standards, do not submit the standards, or suggested other options.

### SUBMIT NOW

The respondents who recommended **submitting the Quality Standards to the IEC now** stated the four reasons shown in Figure 2 when asked to choose their two most important reasons for making this recommendation.

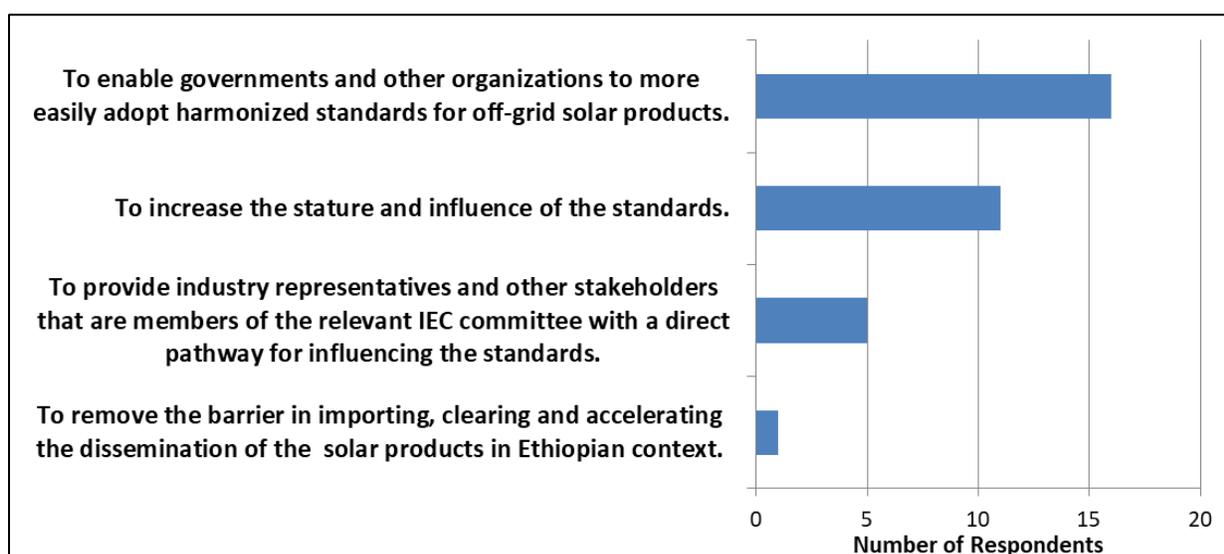


Figure 2. Reasons given in support of submitting the Quality Standards to the IEC now [NOTE: all responses are considered in the graph and are not limited to one per organization.]

Some who recommended submitting the standards now also provided additional comments, including:

#### *Reasons to submit the standards to the IEC*

- Although the Lighting Global standards have been a very positive development, they have created ‘winners.’ Many companies do not engage with Lighting Global; from experience in China it seems that 50% of pico-solar products are not Lighting Global quality-verified. China will refer to IEC standards and their national equivalent, but will not acknowledge Lighting Global standards. It is time to allow the pico-solar market to

<sup>2</sup> Note, we received additional comments regarding the Lighting Global quality assurance program as a whole and the logistics of the stakeholder process in particular. Though these comments are not addressed directly in this document, we are grateful for the comments and are taking them into consideration as we continue with implementation of the program.

develop freely and move on to other areas of innovation that require some hand-holding.

- Submitting the standards to the IEC will increase the prominence of Lighting Global, enabling more people to benefit from the program.
- IEC standards are used in training colleges in East Africa; it would be easy for instructors to create awareness of IEC standards among students in renewable energy courses, but it would be more difficult to do so with Lighting Global-branded quality standards.
- The pico-solar market is now at a stage where its products have become a commodity and are very much standardized in terms of functionality. As such, it would make sense to move the quality standards for these products to an internationally recognized body for maintaining these standards.

#### *Suggestions for ways to mitigate the limited flexibility and lengthy IEC review process*

- Allowing manufacturers and governments to easily reference an IEC standard allows for a secure and repeatable standard to be understood globally. It could be possible to submit the 'core' Lighting Global requirements as an IEC standard, and also maintain a 'supplemental' list of requirements under the Lighting Global certification separately. These 'supplements' could be submitted to IEC every 2-3 years, but interested manufacturers would be able to conform to them before they were adopted by the IEC.
- Lighting Global could maintain autonomy to determine whether a product can be listed on the official website and could institute policies that go beyond the IEC standard. For program activities, Lighting Global could continue to make updates to their policies without having to wait to update the IEC standard.
- Using the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE) Committee of Testing Laboratories (CTL) could enable technical clarifications to be made to the standards and test methods in between the revision cycles for the IEC standard. [NOTE: the IEC is also setting up a renewable energy conformity assessment scheme under the name IECRE. The IECRE will likely serve a similar purpose to the IECEE and may be more appropriate to use for management of standards focused on solar products.]

#### *Concerns and recommendations*

- Without training and capacity building, labs that are not part of the Lighting Global network may not be able to properly conduct the test methods or assess whether products meet the quality standards. Additionally, random sampling may not be properly enforced if laboratories conduct tests outside of the Lighting Global framework.
- More awareness of quality standards is needed, especially among the end users, as even IEC standards are not being used or referred to by end users. As a result, distributors go for substandard products that are easy to sell.
- In the Ethiopian context, the standard should be considered as the CES (Compulsory Ethiopian Standard) and the responsible body for this is the Trade Minister, therefore, their comments and suggestions are very important.

## DELAY SUBMITTING

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The 5 respondents who recommended **delaying submission of the Quality Standards** to the IEC provided the following reasons:

- The industry is currently changing rapidly due to increased competition, introduction of modular systems and appliances, and other innovations. The standards could fall behind the sector if they are less flexible and require a year or more to update. [NOTE: Several respondents highlighted this issue.]
- Moving standards to IEC will heavily restrict the ability for small or poorly funded companies, organizations, and governments to engage with the standards given the cost of working with IEC and its events. This presents a risk that standards become more adapted and appropriate for larger players, which would naturally have a monopolizing effect within the industry and will not necessarily lead to an increase in the regulation of high-quality products. This is particularly relevant for small companies with stretched finances. If policies become more fixed, there is a risk that this has a forcing effect on the market and that standards and processes shape the evolution of products rather than ensuring the quality.
- It would be preferable to have the IEC standards cover the full range of Lighting Global approved products (including solar home system (SHS) kits, not only pico-solar), which might be feasible in a few years' time. [NOTE: The respondent also stated, "it is a difficult call though, as the sector could benefit tremendously from wider adoption of pico-solar quality standards across different countries, in which IEC submission could play a key role."]
- Recently standards for PV modules like IEC 61215 and 61730 were updated, but some of the test procedures still need to be better defined, which could happen in the next two years. [NOTE: Additionally we are in the process of considering whether to enable components, like PV modules, that have met relevant international standards, such as IEC 61215, to be exempt from additional testing when assessing compliance with the Lighting Global Quality Standards.]

## OTHER

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The two respondents that stated **"other" regarding whether to submit the Quality Standards** provided the following explanations:

- Currently the standards are not ready to be submitted to IEC. According to the last survey from GOGLA (March 2017) there are still key issues to address, including:
  - reducing or adjusting the mandatory stock level
  - eliminating or extending the requirement for renewal testing every two years
  - enabling more labs to conduct testing

If the standards were updated to address these issues, we would recommend submitting them to IEC very soon. In general, we strongly support submitting the standards to IEC.

- Does this have to be either/or? Can you not submit the current version to IEC for adoption, but still maintain the Lighting Global version, periodically proposing to IEC to adopt the changes you've made? That way, manufacturers can quote the IEC standard

if they comply with that, or the Lighting Global one if they comply with that. Does this give the best of both worlds? The perfect solution would be one that gains the credibility of the IEC, and retains the flexibility and light-footedness of Lighting Global.

## DO NOT SUBMIT

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The one respondent that recommended the **Quality Standards not be submitted** listed the following reasons:

- It will take longer and will be more difficult to revise the standards when needed, thereby making it more difficult to ensure that the standards meet the needs of a rapidly changing sector.
- IEC adoption will give larger companies and organizations more influence over the standards than smaller companies and organizations because of the resources that are needed to participate in the IEC process.
- Placing standards that are critical to the operation of the sector into the hands of an organization that is not run by the sector and maintains the standards behind a paywall, away from participants in the sector, is undesirable and the opposite of transparency.

## ANSWERS TO QUESTIONS POSED BY STAKEHOLDERS

- ***Can the standards be in both Chinese and English?***  
The IEC can issue official documents in English, French, Spanish and Russian. If a country government adopts an IEC standard as their national standard, they may republish a translated version of the standard in another language, such as Chinese. Lighting Global has recently translated the Quality Standards into Chinese and French; however, Lighting Global would not be able to post these documents or issue a translation of them if the Quality Standards were published by the IEC.
- ***What is the estimated timeline for submitting the Quality Standards to IEC, the IEC voting on the standard, and the IEC publishing the standard?***  
See “Plan and Timeline” section at the end of this document.
- ***Will Lighting Global submit the Quality Standards for SHS kits to the IEC in the future? If yes, when?***  
We are in the process of instituting the test methods for SHS kits as part of IEC/TS 62257-9-5. Once these test methods are published and we have had some additional experience applying the Quality Standards to products in the market, we will likely consider submitting the standards for SHS kits in the near future for the same motivations as for the pico-solar products. This process could begin as early as next year. Before moving forward with a submission, we would want to give stakeholders an opportunity to provide input. We will likely discuss this topic in more detail at the Global Off-Grid Solar Forum and Expo in Hong Kong in January 2018.

- ***What are the reasons behind those countries that want to have their own standards? Do they have some concerns that are not covered in Lighting Global Quality Standards?***
  - ***Are there countries that have initially adopted Global Quality Standards and later opted out? If yes, what were the reasons?***
  - ***Are there any countries that have adopted Lighting Global Quality Standards / IEC testing methods, but their locally manufactured products did not meet the standards?***

In our experience, there are many reasons that a country might not adopt quality standards that align with the Lighting Global Quality Standards. Some countries

- have concerns that are not covered by the Lighting Global Quality Standards,
- feel that international standards do not appropriately address their local conditions,
- are not aware of the Lighting Global Quality Standards,
- do not feel comfortable referencing a standard that is not issued by the IEC, ISO, or similar international standards organization
- are required to “redraft” the Lighting Global Quality Standards rather than endorsing or referencing them directly and make unintentional errors in the redrafting process which diverge from the Lighting Global Quality Standards

We have not yet experienced a country that “opted out” after initially adopting and are not aware of whether countries that have adopted quality standards have locally made products that cannot meet the standards.

- ***Can this increase the number of test laboratories, decrease the price of testing, and ensure the same rules for everyone?***

While submitting the Quality Standards to the IEC may increase the number of test laboratories that offer these testing services, we do not expect a substantial increase in the number of labs unless the volume of testing increases significantly (i.e. the number of labs doing the testing must be commensurate with the scale of the industry given that they are commercial enterprises). Lighting Global will likely continue to require test laboratories to provide proof of their capabilities and apply to have their test results accepted for use by the Lighting Global program. Country governments will almost certainly continue to require that test labs carry an ISO 17025 accreditation to conduct the tests. Because the test methods are not changing, the actual cost of testing is unlikely to decrease substantially, although it is possible that the price of testing will change modestly due to competition if more labs offer the testing. Regarding fair application of the rules to all companies, we believe that this is currently true under the Lighting Global program, and this would, ideally, remain the case if the standards were adopted by the IEC. However, as some respondents noted, organizations with representation on the IEC committee that manages the standards may have greater influence than those who cannot participate in those proceedings.

- ***Lighting Global requires products to be randomly sampled rather than provided by the manufacturer, which is different from many other certificates, and is part of why it is a clear, fair and effective test program. If a lab that conducts tests according to IEC/TS 62257-9-5 issues a report according to the new standard, who will be responsible for selecting the samples?***

In IEC/TS 62257-9-5, the QTM method requires that samples be randomly selected from a minimum product stock. Ideally, this will continue to be enforced regardless of whether the quality standards are maintained by Lighting Global or the IEC. For products to be eligible for testing under the Lighting Global program, they would need to continue to contact Lighting Global to arrange for product sampling through one of Lighting Global's approved sampling agents. If a company is not interested in Lighting Global support, the test lab would need to ensure that the samples were randomly selected from an appropriate stock, either by selecting the units themselves or working with an appropriate sampling agent to do so. However, in the case of tests that occur outside the Lighting Global test laboratory network, we would not be in a position to confirm that this was done in all cases.

- ***Will Lighting Global list products on the website if a different certificate body provides the test report or certificates?***

At the present time, we intend to continue to require companies who are interested in Lighting Global support to contact us prior to testing, sign a test agreement, and conduct the test at a laboratory in our program's network. As is done currently, we will arrange for random sampling, ensure the tests are being conducted at an approved test lab, and review the test results. If a company does not contract with our team prior to testing or follow this process, we will not accept the test results or post the product on the Lighting Global website.

## **DISCUSSION AND ANALYSIS**

Review of the stakeholder recommendations and comments suggests that nearly all respondents are in favor of submitting the quality standards to the IEC and the majority feel that this process should begin as soon as possible. This finding supports our experience when working with governments to adopt national standards that are harmonized with the Lighting Global Quality Standards. Governments are commonly accustomed to referencing quality standards and test methods published by the IEC, but many find it difficult to adopt quality standards published by a program such as Lighting Global. IEC incorporation of the Lighting Global Quality Standards would likely simplify and accelerate widespread government adoption of harmonized quality standards. Feedback from country governments and others engaging with the governments suggests that the need for IEC incorporation is becoming increasingly urgent as additional governments express interest in regulating these markets.

Despite this support for moving forward with submission of the standards, several stakeholders did recommend delaying the submission and some key comments merit additional discussion

and analysis. The four key topics we delve into below are the option for Lighting Global to maintain supplemental standards, the potential for changes prior to submitting the standards to the IEC, and concerns about the diminished access and unequal stakeholder influence if standards are maintained by IEC.

### ***Option for Lighting Global to maintain supplemental standards***

Several stakeholders shared the suggestion that the Lighting Global Quality Assurance (QA) team should opt for “the best of both worlds.” The suggestion is essentially that we could submit the Quality Standards to the IEC, but still maintain a list of additional standards or updates that we refer to as a program. These updates could later be submitted for incorporation to the IEC during review processes.

Though we believe that it is important to maintain an internationally harmonized approach, we believe that in some cases, it may be appropriate to maintain supplemental policies that are only relevant to the Lighting Global verification. These include policies such as the Lighting Global Intellectual Property Policy, requirements for test laboratories to be part of the Lighting Global network, and the Lighting Global Branding Guidelines. Policies such as these would be unrealistic for the IEC to incorporate and inappropriate for national governments or other organizations to enforce.

We also recognize that even if the standards are published by the IEC, national governments may still fall out of harmonization. This could happen either because the government decides to make changes that diverge from the IEC adopted standards or simply because they do not take immediate measures to update their national standards when the IEC document is amended or revised. Despite the likelihood that governments will intermittently fall out of harmonization, we believe that there is value in Lighting Global staying harmonized with the IEC standards to help to set an example for governments and other organizations to follow.

Additional options we may pursue to ensure that the IEC standards remain relevant to the industry are using official pathways through the IEC to issue interim changes to a document. These include amendments, technical corrigenda, the IECEE-CTL process, and potentially the upcoming IECRE framework that is under development. An amendment can alter or add to technical provisions in a document, a technical corrigendum may be issued to correct a technical error or ambiguity in a document, and clarifications on lab practices may be made through the IECEE-CTL or IECRE process. We will work to better understand each of these options and how they can be implemented to best maintain the standards.

### ***Potential for changes to Quality Standards prior to submission***

Though most stakeholders recommended submitting the Quality Standards to the IEC as soon as possible, there are potential reasons to delay the submission. Notably, there are a number of recommended changes suggested by GOGLA members in April 2017 that have not been incorporated into the Lighting Global Quality Standards. These recommendations include:

- reducing or adjusting the mandatory stock level
- eliminating or extending the requirement for renewal testing every two years

- accepting results from IEC 61215 and other international standards in lieu of certain tests in the IEC 62257-9-5 testing regime

We are still in the process of exploring possible changes to the Lighting Global QA framework related to these requests, as discussed below.

#### *Adjusting Mandatory Stock Level*

Currently, the Lighting Global Quality Assurance program requires products to be randomly selected from mandatory stock levels of 500 units (200 for SHS). This is done to help ensure that tested samples are representative of typical production units of the product (i.e. to avoid the 'golden samples' issue). Our existing sample collection system provides confidence to key stakeholders, including governments, development agencies, distributors, and investors. We cannot take measures that will undermine their confidence in the QA program.

Therefore, we are hesitant to reduce mandatory stock levels or eliminate random sampling without mitigating measures, e.g. mandatory market check tests. We currently offer two pathways that respond to this recommendation; these include:

- a "limited stock" option for pico-PV products, which requires >200 samples and a market check test paid by the company
- the Accelerated Verification Method (AVM) pathway, in which pre-production samples undergo preliminary testing to receive a temporary verification. Within six months, a full QTM test must be conducted to confirm the initial results. Only certain companies are eligible for this pathway based on the historical pass/fail rate of their products and other eligibility criteria.

We are considering addressing the ongoing request to reduce the mandatory stock requirement by adjusting the AVM pathway to enable more manufacturers to be eligible to participate. The revised AVM would be similar to the existing version, but the initial test would be a full QTM conducted with pre-production samples. The follow-up test would be a market check test conducted with samples either selected from the market or randomly sampled from the warehouse. By flipping the order of the testing, the mandatory stock requirement is reduced or eliminated from the process for eligible companies. Moreover, some of the eligibility criteria could be revised. For instance, with this change, it would be logical to allow companies to maintain eligibility even if they have failures in QTM testing. A stronger focus would be placed on the pass/fail rate of market check and renewal testing.

As we consider these changes, we are engaging with key stakeholders, including country governments that have adopted harmonized quality standards to discuss whether they will accept the proposed measures. A revised AVM pathway will only be relevant if we remain harmonized with countries that have adopted national standards that are aligned with the current Lighting Global Quality Standards.

#### *Extending Renewal Testing Period*

In response to the suggestion that we eliminate renewal testing, we examined the 49 renewal tests conducted between 2012 to 2017 and found that only 29% of products met the requirements without need for correction. This low pass rate highlights the importance of an expiration date and the requirement for renewal of quality verified status. Despite recognizing the need for renewal testing, given our understanding that many product life cycles are 2.5- 3 years, we are considering a slight extension for the period for renewal testing if it is coupled with an increase in manufacturer-funded market check tests.

*Accepting International Standards in Lieu of Certain Tests in IEC 62257-9-5*

We agree that accepting certificates for products that meet relevant international standards could help reduce testing cost and time. We are in the process of determining whether results from specific standards, like IEC 61215, will provide the data we need for the assessments in IEC/TS 62257 9 5.

We are also considering the possibility of allowing manufacturers to either provide an alternate certification for battery durability, such as IEC 61427 or, in the case of lithium iron phosphate batteries, to self-declare that their product's battery will meet the battery durability requirement. This change could reduce the time required for testing by up to two weeks if used in conjunction with the expedited LM-80 test for lumen maintenance evaluation. The batteries would still be subject to the durability test during market check testing. If we were to make this change, we would likely only make this option available to companies that had at least one product that meets the Lighting Global Quality Standards. This would help ensure that the company understands the battery durability test and has previously identified batteries that can meet the requirements.

We agree that it would be ideal for our team to finalize decisions on some or all of these issues before submitting the Quality Standards to the IEC. We will plan to incorporate the changes to the AVM, renewal period, and testing requirements that we determine are reasonable and likely to be accepted by national governments in the version of the Quality Standards that we submit to the IEC.

Additionally, the revision of IEC/TS 62257-9-5 includes several tests that will newly be applied to all products with USB or 12 V ports, even those with solar modules smaller than 10 W. These new test methods would reasonably be accompanied by associated quality standards. Specifically, we intend to implement the following changes to the Quality Standards for pico-PV products prior to submitting the standards to the IEC:

- add standards for that would apply to products with ports, including requirements for port voltage regulation, PV overvoltage protection, miswiring protection, and circuit and overload protection.
- require additional battery protection for products with lithium batteries. All lithium batteries (including LiFePO4 and those of pico-products) must carry UN 38.3 certification and have overcharge protection for individual cells or sets of parallel-connected cells.
- tighten the lumen maintenance threshold from 85% to 90%.

These standards have been applied to SHS kits over the past few years, but have not yet been broadly applied to smaller products. All of these changes were proposed and discussed in a stakeholder process in 2016 and will be ready to be realized once the new revision of IEC/TS 62257-9-5 is published. Though some of the test labs in the Lighting Global network have experience using these methods, many will need training and additional equipment to implement the changes included in the new revision, including the ports test and energy service calculations. We are already working with labs to prepare for these changes and believe that the time required for the Quality Standards to be adopted by the IEC will be sufficient to enable labs to become proficient at the new methods.

Similarly, the methods Lighting Africa and Lighting Global developed for testing SHS kits will be institutionalized in the upcoming revision of IEC/TS 62257-9-5. Once these are published, it may be appropriate to also submit standards for SHS kits to the IEC. Having all standards either maintained by Lighting Global or institutionalized with the IEC would seem more internally consistent; however, waiting to submit the standards for pico-solar products solely to ensure that the standards for SHS kits may be submitted at the same time does not seem worthwhile.

#### ***Restricted access if standards are maintained by the IEC***

There are three primary concerns related to access of the standards if they were published by the IEC:

- IEC documents are considered publicly available, but the IEC does charge a fee based on the page count of the document
- Due to copyright issues, Lighting Global would not be able to post the standards on our website or share them with other organizations interested in harmonizing
- Translations of the standards would be more limited

The IEC is a not-for-profit, quasi-governmental organization that relies in part on income from sales of the IEC International Standards. To help mitigate the cost of documents related to rural electrification the IEC, World Bank Group, and United Nations Foundation have collaborated to provide discounts to qualified stakeholders. For instance, stakeholders can currently access a 75% discount on IEC/TS 62257-9-5 [CHF 114 (US\$ 115) instead of CHF 455 (US\$ 456)]. The quality standards would be a much shorter document, and the cost of purchasing a version of the standards adopted by IEC is thus likely to be less than US\$ 100.<sup>3</sup>

Most organizations are eligible for the discount offered on the IEC documents. There are two key criteria for eligibility:

- The organization must be based in a country that is either a member or affiliate country of the IEC
- The organization must have a gross revenue of less than \$10 million per year

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<sup>3</sup> If normative references are also purchased, the cost could increase substantially. In the case of both IEC/TS 62257-9-5 and our proposed submission of the quality standards, the documents are designed to largely be understood for most purposes without need to review the normative references.

While these discounts do not completely eliminate the issue associated with limited access to the IEC documents, they can help. Note, governments that are members of affiliate countries of the IEC can access IEC documents for free, so most national governments would not be impacted by this restriction. (IEC members, associate members, and affiliates represent 170 countries, which is 87% of the 195 countries in the world).

Though our program would be limited in its ability to share the details of the standards, Lighting Global would still be able to promote the standards, direct interested parties to where the standards can be purchased, and provide an overview of what is covered by the standards.

As mentioned above, Lighting Global has recently translated the Quality Standards into Chinese and French; however, these documents would be removed from the Lighting Global website if the Quality Standards were published by the IEC. Lighting Global would not be able to issue a translation of the IEC standards. We would request that the IEC publish the document in English and French. If a country government adopts an IEC standard as their national standard, they may republish a translated version of the standard in another language, such as Chinese.

Though these are significant tradeoffs associated with submitting the standards to the IEC, we believe the advantages outweigh these disadvantages.

***Unequal stakeholder influence if standards are maintained by IEC***

Some stakeholders raised the concern that those governments, organizations, and companies that do not have the resources to send representatives to the IEC meetings would have limited influence on the standards. Further, one stakeholder warned against placing standards that are critical to the operation of the sector into the hands of an organization that is not run by the sector. The broader concern is that the IEC standards could become either inappropriate for the industry or more adapted and appropriate for larger players, which would naturally have a monopolizing effect within the industry and not necessarily lead to an increase in the market share of high-quality products.

We acknowledge these as valid concerns and propose to address them in two ways. First, the Lighting Global QA team, including the GOGLA technical working group, could play a mitigating role by continuing to gather stakeholder perspectives from a wide audience and feeding that input into the IEC process. This would not fully alleviate the issue as those privileged to be “in the room” at the IEC meetings may still have a stronger voice, but we believe it would help to ensure that smaller players can have their perspectives represented. Lighting Global and GOGLA maintaining seats on the IEC Technical Committee will also help to address the concern that the standards will be managed by those outside the sector. We will also continue to encourage other stakeholders from across the sector to join the committee and directly participate in the management of the standards.

## PLAN AND TIMELINE

We recognize a growing urgency to ensure international standards for off-grid lighting products are in place given increasing interest from national governments to issue policy or trade regulations for this sector. Given this urgency, we are likely to submit the Quality Standards to IEC Technical Committee 82 in the first quarter of 2018, with the possibility of submitting them as soon as February. Prior to submission, we will need to submit a “new item work proposal” to the IEC, prepare the standards in the proper format, ensure that the revision of IEC/TS 62257-9-5 will be adopted by IEC, formalize the revised AVM policy, and respond to a few other outstanding concerns introduced by GOGLA in April 2017, as described above. We understand that the GOGLA Technology Working Group will be refining their position on the submission of the standards in early January, and we will discuss a final plan with a broader set of stakeholders at the Global Off-Grid Solar Forum and Expo in Hong Kong in January 2018.

When we submit the standards as a Technical Specification,<sup>4</sup> if the committee believes that the document is ready to be issued as a draft, the document will be circulated for comment from IEC members for 90 days. If the committee believes the document may be subject to significant general or technical comments, they may decide to first issue the document as a committee draft, which would require an additional 2, 3, or 4-month review period. Following either the 90-day or 150 to 210-day period, the participating members of the IEC committee will vote. If the vote is positive, the document will be prepared for publishing. The final publishing process can take several months, so we expect that the full process would take between six months to a year from when we decide to submit the standards to the IEC to when they are published.

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<sup>4</sup> If the document were instead submitted as an International Standard, an additional two-month review period and additional vote would be required. At this time, we believe it is more appropriate to submit the standards as a Technical Specification. This option has the disadvantage of governments potentially perceiving the document as inappropriate to adopt as a national standard; however, it provides more flexibility in updating the standards.

## **ANNEX A – BACKGROUND ON LIGHTING GLOBAL QUALITY STANDARDS**

Quality standards and test methods are two key components of the Lighting Global Quality Assurance (QA) framework. Since 2010, Lighting Global has maintained quality standards for off-grid solar products. These standards set a baseline level of quality, durability, and truth in advertising to protect consumers.

Lighting Global now maintains quality standards for pico-solar products (products with modules smaller than approximately 10 W) and solar home system (SHS) kits (systems with modules between 10 W – 350 W). We are currently only considering whether to submit the Lighting Global Quality Standards for pico-solar products for adoption by the International Electrotechnical Commission (IEC). Though we may consider submitting the Quality Standards for SHS kits in the near future, this stakeholder process has focused on the Quality Standards for pico-solar products.

Test methods describe the process for evaluating quality, durability, and truth in advertising for pico-solar products. The test methods were adopted by the International Electrotechnical Commission (IEC) through Technical Specification IEC/TS 62257-9-5 in 2013 and revised most recently in 2016. These test methods are currently under revision again to incorporate test procedures for assessing SHS kits. We expect the new version of the test methods to be available in early to mid- 2018.

The Quality Standards describe the pass/fail thresholds for pico-solar products tested according to the test methods. The Quality Standards are maintained separately by Lighting Global and are publicly available here: [www.lightingglobal.org/quality-assurance-program/our-standards/](http://www.lightingglobal.org/quality-assurance-program/our-standards/). Meeting the Quality Standards is a requirement for participation in Lighting Global support programs. All products that meet the quality standards are issued a Standardized Specifications Sheet and Verification Letter, and posted on the Lighting Global website. Additional programs, distributors, and governments also reference or harmonize with the Lighting Global Quality Standards to ensure product quality for their stakeholders or consumers.

In cases where governments have expressed an interest to regulate the market for off-grid solar lighting products, Lighting Global has worked with Lighting Africa and Lighting Asia program staff to engage with governments to help ensure that they adopt test methods and standards that are harmonized with IEC/TS 62257-9-5 and the Lighting Global Quality Standards.

Lighting Global staff have often noted that while governments are accustomed to commonly referencing quality standards and test methods published by international standards bodies such as the IEC, they are hesitant to accept quality standards published by a program such as Lighting Global. We have had success in convincing governments in a few key markets to adopt standards for pico-solar products that are harmonized with the Lighting Global Quality Standards. However, we believe that IEC incorporation of the Lighting Global Quality Standards will simplify and accelerate widespread government adoption of harmonized quality standards.