

Official Rules

NO PURCHASE OR PAYMENT IS NECESSARY TO ENTER OR WIN. A PURCHASE WILL NOT IMPROVE YOUR ODDS OF WINNING.

Contest: IEEE Smart Lighting “Let’s Make Light 2024” (the “Contest”)

Sponsor: The Institute of Electrical and Electronics Engineers, Incorporated, 445 Hoes Lane, Piscataway, New Jersey, USA, 08854 (“Sponsor”)

Eligibility: Contest is open to residents of the United States of America and other countries, where permitted by local law, who are the age of eighteen (18) and older. Employees of Sponsor, its agents, affiliates, and their immediate families are not eligible to enter Contest. Entrants may be subject to rules imposed by their institution or employer relative to their participation in contests and should check with their institution or employer for any relevant policies. Void where prohibited by law. For the avoidance of doubt, the Contest is not open to individuals or teams who are subject to export control regulations. This may include, but is not limited to, those listed here: <https://legal.ieee.org/compliance/ofac/applicability-countries-entities-persons>.

Agreement to Official Rules: By participating in this contest, entrants agree to abide by the terms and conditions thereof as established by Sponsor. Sponsor reserves the right to alter any of these Official Rules at any time and for any reason. All decisions made by Sponsor concerning the Contest including, but not limited to the cancellation of the Contest, shall be final and at its sole discretion.

Entry Period: This Contest commences on **June 15, 2024, at 8 AM EDT and ends on November 1st at 5 PM EDT, 2024** ("Entry Period"). Sponsor's server is the official clock for the Contest. Entries received before or after the entry period are void.

How To Enter: Contestants must upload a project online on the contest submission webpage at <https://ieee-lml.org> within the entry period specified above. More details on the format of submissions are included in the track descriptions below.

All submissions must carry a copyright transfer under the form of creative commons (more details are provided in the call). For contestants who do not win any prize, the copyright will be returned to the submitters, while it will be transferred to, and retained by the IEEE under the creative commons license for anyone winning a first, second or third prize.

Affiliations, Language and Currency: Individuals entering this contest are required to represent - but do not need to be employees of an organization. Supporting organizations can be universities and academic establishments, private sector small and medium-sized enterprises (SMEs), startups, nonprofits, non-governmental organizations (NGOs), grassroots groups, or government agencies, worldwide. Specific educational degrees are not required. Membership in the IEEE is not required. Participants representing underserved communities from low- and middle-income countries/emerging nations are highly encouraged to apply. English is the official language of the competition, but minimum translations of rules and submission details are posted in a variety of languages on the website. US Dollar (USD) is the official currency of the competition for both submitted projects and awards.

LIMIT ONE (1) ENTRY PER TEAM – Each supporting organization can present up to three (3) teams (per category) to the Contest. Limit one (1) entry per team. Teams may consist of one (1) to five (5) individuals. All team members shall be living in the same country at the time of the Contest, regardless of their nationalities. Team members cannot be changed once the application has been submitted.

Only entries submitted in accordance with these Official Rules will be eligible for consideration. No alternate means of entry are permitted. All entries become the exclusive property of Sponsor, will not be returned, and may not be acknowledged.

Selection of Winner: A Selection Committee of judges qualified to evaluate submissions of this nature has been created by the IEEE Smart Lighting Project. Submissions will be assessed based on the criteria listed below. Judges will use a scoring system to evaluate each submission and will meet to establish final rankings and determine the winners in case of a tie. The confidentiality of the contents of each submission will be strictly maintained.

The competition has two tracks. Contestants must submit their project in one of the two tracks only. Projects will be evaluated according to the criteria defined below for the track selected. All criteria will be weighed equally. Projects can only win in one track.

The Overall Challenge

Very few inhabitants of impoverished, marginalized, forgotten, urban and rural communities in less-industrialized countries have access to a clean, reliable source of artificial light for three principal reasons—suitable light sources are not accessible, affordable, or reliable. Furthermore, historical examples of light sources developed for aid programs have also been unsuccessful due to loss of functionality, short lifetimes, and poor mechanical and electrical quality.

This competition seeks proposals in both the technological and business sectors that provide affordable, accessible, and ecologically sustainable solutions for the provision of artificial light. To make this happen, interconnected activities are required: light source manufacture, distribution, end-user sales and support. Technological considerations call for the light source to preferably be of local manufacture, operational in harsh environments, affordable, and a natural fit to a circular economy through reuse or recycling. Complimentary business strategies can be procedures for national distribution, community connection and payment models for the extreme poor.

Track 1: Green Light Technology

The Technical Challenge: In keeping with a global need to greatly reduce energy and materials usage, we seek novel light source technologies or modified existing devices whose design and manufacturing process fit within a circular economy. Amongst the principal attributes to be satisfied are: preferable use of easily accessible, local materials; local manufacture; fabrication processes that do not require high levels of expertise or specialized equipment; devices that exhibit extreme mechanical and electrical reliability when operated in harsh environments; devices that provide the “right” light quality, are intuitive to operate and satisfy end-user needs. Submissions in this track should also support the vision of Track 2.

Submission Format: Submissions for the Green Light Technology track may comprise:

IEEE Let's Make Light 2024 Competition Official Rules

- A typed document (minimum four pages text)—graphics and images do not contribute to the page count; or:
- A handwritten document (minimum 8 pages text)—graphics and images do not contribute to the page count. The complete document should be scanned/photographed and submitted electronically.

Where useful and accessible, submissions should include descriptive graphics, images, and tables that may incorporate:

- Drawings or sketches that illustrate a physical design, process, sequence of actions, connectivity/dependence between different activities.
- Simulation results.
- Manufacturing equipment and process.
- Functional prototypes with analytical results.
- Photos or videos of the light in use.

Judging Considerations: Submissions to Track 1 will be evaluated based on the following criteria, where applicable:

1. *Customer Interaction*

How much did end-users contribute, through interviews or other means, to the design and fabrication process of the product?

2. *Sustainability*

How well does the product, to the extent possible, utilize local manufacturing and locally sourced components? How well does the product fit into a circular economy in terms of its CO₂ footprint, energy use during fabrication and usage, materials usage and reuse, manufacturing waste, shipping, repairability, single use materials and recycling—evaluated through a straightforward LCA (Lifecycle Analysis)?

3. *Accessibility and Affordability*

Is the product easily available? Is the light source affordable for populations with incomes ≤ 1.00 USD/day?

4. *Light Quality*

Is the illumination the “right” light? How well does the quality of the light satisfy the needs of color rendering, color temperature, flicker, glare, and circadian rhythm (human wake/sleep cycle)? Does the light adversely affect Gaia?

5. *Useability*

How easily can the light source be adapted to meet specific customer needs? Is it aesthetic, desirable, and intuitive to use? How resistant is it to wear and tear, corrosion, misuse, or other physical damage? Are the outcomes of any field trials reported?

6. *Functionality*

Which customer needs do you fulfill and how? For example, can you control the illumination to provide a reading light, illuminate a larger space, or other needs?

7. *Energy Efficiency*

Is the light able to provide illumination for 3 days (20 hours) on a single charge? Is it energy efficient? Can it be powered from an individual or shared renewable source of

energy?

8. *Manufacturing Attributes*

How easily can the materials be locally sourced and how easily can the light source be locally manufactured? How well does the manufacturing process envisioned adhere to the requirements of low levels of technical expertise and non-specialized equipment? What capital outlay does the envisioned production facility and process require? Can the facility be powered by renewable energy? How easy is it to replicate the facility in different places/countries?

9. *Innovation*

What is the novelty? What use is made of emerging technologies to increase efficiency, reduce size and cost?

Track 2: Sustainable and Scalable Business

The Business Challenge: We seek business models able to deliver these devices into the hands of the target communities. Amongst the principal attributes to be satisfied are: affordability; availability to the end-user through national and local distribution systems; connectivity to target communities that match environment, country and culture; payment and collection plans that accommodate very limited, seasonal income; availability of local training programs for system installation, operation and maintenance—and for device usage, maintenance and repair. For these lighting systems to thrive in local environments, a real, self-sustaining business model that accommodates the actual value chain is aimed for. Submissions should support the vision of Track 1.

Submission Format: Submissions for a sustainable business may comprise:

- Typed document (minimum four pages text)—graphics and images do not contribute to the page count; or:
- A handwritten document (minimum 8 pages text)—graphics and images do not contribute to the page count. The complete document should be scanned/photographed and submitted electronically.

Where useful, either document should include descriptive graphics and tables as needed:

- Drawings or sketches that illustrate a process, sequence of actions, value chain, connectivity/dependence between different activities.
- Financial models.
- Financial simulation results.
- Distribution and sales network.

Submissions can include, but are not limited to the following business areas:

- Routes to advertise, distribute, and sell product to intended customers.
- Routes to identify, connect, engage, and work with customers.
- Routes for payment strategies for those with limited, seasonal incomes.
- Routes for payment collection from those with limited, seasonal incomes.
- Routes to local sourcing, manufacture, and repair of devices in required quantities.
- Opportunities that arise from building, selling, repairing, and recycling these light sources.

IEEE Let's Make Light 2024 Competition Official Rules

- Generation of material or subcomponents for local production by recycling other products.
- Training operatives and target communities to install the lighting system.
- Training target communities to operate and maintain product without external intervention.
- Training target communities or local sales representatives for product repair and recycling.
- Tiered pricing structures to ensure that the light is accessible to, and affordable by all.
- Light access enabled local income generation through working after dark.
- Device charging (e.g., cell phones) through sale of unused light source battery capacity.
- Identification of market challenges and how they were or can be overcome.
- Large area distribution, sales, spares, repair, and storage.
- National distribution—local sales interface: community connection, training and payment.

Judging Considerations: Submissions to Track 2 will be evaluated based on the following criteria, where applicable:

1. *Marketing*

How well does the proposal demonstrate a framework to identify, connect, engage, and work with potential customers? How well does the proposal demonstrate a proven route to the advertisement, distribution, and sale of the product where needed? Are past or potential market challenges identified, and how are, or were, they overcome to create new markets? How did potential end-users contribute, through interviews or other means, to the distribution, training, sales, repair, and payment plans for the product?

2. *Reliable Business*

How well does the economic model submitted support the formation of a self-sustaining and scalable business? How well does the submission describe customer contribution, by interviews or other means, to shaping the business model?

3. *Sustainability*

How well does the proposal demonstrate that the product fits into a circular economy, can be manufactured, repaired, and recycled without burdening the environment?

4. *Community Connection*

How well explained are the idiosyncrasies of local community, culture, accessibility, and engagement? Are the means and process of communication well documented? Is there a network that engages local federal, state, and traditional leadership?

5. *Operability*

How well does the proposal demonstrate that customers can operate and maintain the lighting system, and light source without external intervention?

6. *Calculation of Breakeven Point*

How convincing is the breakeven point presented? With sustainability having a higher priority over low cost, submissions should include (in USD): fixed costs; estimated sales volume; bill of materials; manufacturing costs; transportation costs; cost of sales; cost of training for end-user sales and repair; profit margin.

7. *Sales*

How convincing is the proposed interface between national distribution and local sales network? How convincing are the plans for training local sales representatives in the sale, repair, and recycling of the product with respect to community engagement?

8. *Value Chain*

How convincing are the payment and collection plans? Are they proven? How detailed are the plans for local sourcing, manufacture, and repair of the product? How convincing are the arguments for satisfying the constraint of extreme affordability? Have all avenues for cost reduction been explored?

Prizes: The prize(s) for the Contest are being sponsored by IEEE. The winner(s) (the “Prize Winner(s)”) shall receive, for each track:

- **1st Prize:** US\$3,000 monetary prize for the winners (split equality between team members), a trophy (medal), and a certificate for each team member. Support for team members participation in an IEEE co-sponsored event (travel reimbursement up to US\$2,000 per team according to IEEE Policies and Procedures).
- **2nd Prize:** US\$2,000 monetary prize for the winners (split equality between team members), a trophy (medal), and a certificate for each team member.
- **3rd Prize:** US\$1,000 monetary prize for the winners (split equality between team members), a trophy (medal), and a certificate for each team member.

In addition, all winning team members, if they are not IEEE members, will receive a 1-year membership in the IEEE for 2025.

Awards will be given only if a suitable awardee is identified.

No substitution of prize permitted, except that Sponsor reserves the right to substitute a prize or prize component of equal or greater value in its sole discretion for any reason at time of award. Sponsor shall not be responsible for service obligations or warranty (if any) in relation to the prize(s). Prize may not be transferred prior to award. All other expenses associated with use of the prize, including, but not limited to local, state, or federal taxes on the Prize, are the sole responsibility of the winner. Winner(s) understands that delivery of a prize may be void where prohibited by law and agrees that Sponsor shall have no obligation to substitute an alternate prize when so prohibited.

Notification of Potential Prize Winners: The Prize Winners will be notified by e-mail within fourteen (14) days of the selection date. If a Prize Winner does not acknowledge acceptance of the Prize within fourteen (14) business days after being notified that he or she is a Prize Winner, or if a potential Prize Winner does not return the signed claim forms within

the required time or is otherwise found to be ineligible or not in full compliance with these Official Rules, another Prize Winner will be chosen using the same procedure specified above. Potential Prize Winner may be asked to execute and return to Sponsor a declaration of eligibility and liability/publicity release, where lawful, within fourteen (14) days of attempted notification. Winner may waive the right to receive the prize. The decisions of Sponsor are final and binding in all respects.

Release, Publicity, and Privacy: By receipt of the Prize and/or, if requested, by signing an affidavit of eligibility and liability/publicity release, the Prize Winner consents to the use of his or her name, likeness, business name and address by Sponsor for advertising and promotional purposes, including but not limited to on Sponsor's social media pages, without any additional compensation, except where prohibited. No entries will be returned. All entries become the property of Sponsor. The Prize Winner agrees to release and hold harmless Sponsor and its officers, directors, employees, affiliated companies, agents, successors and assigns from and against any claim or cause of action arising out of participation in the Contest.

Sponsor assumes no responsibility for computer system, hardware, software or program malfunctions or other errors, failures, delayed computer transactions or network connections that are human or technical in nature, or for damaged, lost, late, illegible or misdirected entries; technical, hardware, software, electronic or telephone failures of any kind; lost or unavailable network connections; fraudulent, incomplete, garbled or delayed computer transmissions whether caused by Sponsor, the users, or by any of the equipment or programming associated with or utilized in this Contest; or by any technical or human error that may occur in the processing of submissions or downloading, that may limit, delay or prevent an entrant's ability to participate in the Contest.

Sponsor reserves the right, in its sole discretion, to cancel or suspend this contest and award a prize from entries received up to the time of termination or suspension should virus, bugs or other causes beyond Sponsor's control, unauthorized human intervention, malfunction, computer problems, phone line or network hardware or software malfunction, which, in the sole opinion of Sponsor, corrupt, compromise or materially affect the administration, fairness, security or proper play of the contest or proper submission of entries. Sponsor is not liable for any loss, injury or damage caused, whether directly or indirectly, in whole or in part, from downloading data or otherwise participating in this Contest.

Entrant acknowledges and agrees that Sponsor may collect, store, share, and otherwise use personally identifiable information provided during the registration and application process and the Contest, including, but not limited to, name, mailing address, phone number, and email address. Sponsor will use this information with accordance with its Privacy Policy (https://www.ieee.org/security_privacy.html), including for administering the Contest and verifying Entrant's identity, postal address, and telephone number in the event an entry qualifies for a prize. Entrant's information may also be transferred to countries outside the country of Entrant's residence, including the United States. Such other countries may not have privacy laws and regulations similar to those of the country of Entrant's residence. If an Entrant does not provide the mandatory data required at registration, Sponsor reserves the right to disqualify the entry.

Right to Use Entries: By entering the Contest, entrants grant Sponsor a non-exclusive, irrevocable, royalty-free, perpetual, worldwide right and license to reproduce, publish,

display, edit and otherwise use the submitted Entries, and entrant's full name and city and state/province/country of residence, photograph, likeness, voice and institutional affiliation, in print or any offline or online and other media for purposes of editorials, exhibition, advertising, publicity and promotion without additional compensation or permission, unless prohibited by law.

Representations and Warranties Regarding Entries: By submitting an Entry, you represent and warrant that your Entry does not and shall not comprise, contain, or describe, as determined in Sponsor's sole discretion: (A) false statements or any misrepresentations of your affiliation with a person or entity; (B) personally identifying information about you or any other person; (C) statements or other content that is false, deceptive, misleading, scandalous, indecent, obscene, unlawful, defamatory, libelous, fraudulent, tortious, threatening, harassing, hateful, degrading, intimidating, or racially or ethnically offensive; (D) conduct that could be considered a criminal offense, could give rise to criminal or civil liability, or could violate any law; (E) any advertising, promotion or other solicitation, or any third party brand name or trademark; or (F) any virus, worm, Trojan horse, or other harmful code or component. By submitting an Entry, you represent and warrant that you own the full rights to the Entry and have obtained any and all necessary consents, permissions, approvals and licenses to submit the Entry and comply with all of these Official Rules, and that the submitted Entry is your sole original work, has not been previously published, released or distributed, and does not infringe any third-party rights or violate any laws or regulations.

Limitations of Liability/Reserved Rights: Neither Sponsor, its parent, subsidiary or affiliated companies, nor its advertising or promotional agencies shall have any obligation, liability or responsibility with regard to (i) entries that contain incorrect or inaccurate information or do not comply with these Official Rules, (ii) entries, prize claims or notifications that are lost, late, incomplete, illegible, unintelligible, damaged or otherwise not received by the intended recipient, in whole or in part, due to computer, technical or other error of any kind, (iii) telephone, electronic, hardware, software, network, Internet or computer malfunctions, failures or difficulties of any kind, (iv) any condition caused by events beyond the control of Sponsor that may cause the Contest to be disrupted or delayed, (v) any printing or typographical errors in these Official Rules or any other materials associated with the Contest, or (vi) any damages or losses of any kind caused by any prize or resulting from participation in the Contest, accessing, uploading or downloading data in connection with the Contest, or acceptance, possession or use of any prize. Sponsor, in its sole discretion, reserves the right to disqualify any entrant tampering with or abusing the entry process or the operation of the Contest or otherwise violating these Official Rules. Sponsor, in its sole discretion, further reserves the right to cancel, terminate, suspend or modify the Contest if the Contest cannot be completed as planned because of infection by computer virus, bugs, tampering, unauthorized intervention or technical failures of any sort and to select a winner from among eligible entries unaffected by such event, if any.

Disputes: EACH ENTRANT AGREES THAT: (1) ANY AND ALL DISPUTES, CLAIMS, AND CAUSES OF ACTION ARISING OUT OF OR IN CONNECTION WITH THIS CONTEST, OR ANY PRIZES AWARDED, SHALL BE RESOLVED INDIVIDUALLY, WITHOUT RESORTING TO ANY FORM OF CLASS ACTION, PURSUANT TO ARBITRATION CONDUCTED UNDER THE COMMERCIAL ARBITRATION RULES OF THE AMERICAN ARBITRATION ASSOCIATION THEN IN EFFECT, (2) ANY AND ALL CLAIMS, JUDGMENTS AND AWARDS SHALL BE LIMITED TO ACTUAL OUT-OF-POCKET COSTS INCURRED, INCLUDING COSTS ASSOCIATED WITH

ENTERING THIS CONTEST, BUT IN NO EVENT ATTORNEYS' FEES; AND (3) UNDER NO CIRCUMSTANCES WILL ANY ENTRANT BE PERMITTED TO OBTAIN AWARDS FOR, AND ENTRANT HEREBY WAIVES ALL RIGHTS TO CLAIM, PUNITIVE, INCIDENTAL, AND CONSEQUENTIAL DAMAGES, AND ANY OTHER DAMAGES, OTHER THAN FOR ACTUAL OUT-OF-POCKET EXPENSES, AND ANY AND ALL RIGHTS TO HAVE DAMAGES MULTIPLIED OR OTHERWISE INCREASED. ALL ISSUES AND QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, INTERPRETATION AND ENFORCEABILITY OF THESE OFFICIAL RULES, OR THE RIGHTS AND OBLIGATIONS OF ENTRANT AND SPONSOR IN CONNECTION WITH THE CONTEST, SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW JERSEY, WITHOUT GIVING EFFECT TO ANY CHOICE OF LAW OR CONFLICT OF LAW, RULES OR PROVISIONS (WHETHER OF THE STATE OF NEW JERSEY OR ANY OTHER JURISDICTION) THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY JURISDICTION OTHER THAN THE STATE OF NEW JERSEY. SPONSOR IS NOT RESPONSIBLE FOR ANY TYPOGRAPHICAL OR OTHER ERROR IN THE PRINTING OF THE OFFER OR ADMINISTRATION OF THE CONTEST OR IN THE ANNOUNCEMENT OF THE PRIZES.

Contest Results and Official Rules: To obtain the identity of the Prize Winner and/or a copy of these Official Rules, send a self-addressed stamped envelope to Technical Activities Department, The Institute of Electrical and Electronics Engineers, Incorporated (“IEEE”), 445 Hoes Lane, Piscataway, New Jersey, USA, 08854.