



**GLOBAL LEAP OUTSTANDING OFF-GRID APPLIANCE AWARDS
2016-17 OFF-GRID REFRIGERATOR COMPETITION & INNOVATION PRIZE**

Revised 30 November 2016

Background

The Global Lighting and Energy Access Partnership (“[Global LEAP](#)”) Outstanding Off-Grid Appliance Awards (“Global LEAP Awards”) seek to transform the global market for off-grid energy products by recognizing and rewarding the most energy-efficient, highest quality off-grid appliances. As an initiative of the Clean Energy Ministerial led by the U.S. Department of Energy, Global LEAP seeks to advance global clean energy access goals by harnessing the power of marketplace competition to drive technical and market innovations in the off-grid appliance sector.

Refrigeration holds unique potential to unlock economic and social progress for the billions of un- and under-electrified people globally. For example, refrigeration can facilitate the development of income-generating micro-enterprises, prolong the shelf life of fresh foods, reduce spoilage and waste, diversify and enhance the nutritional value of diets, and reduce the time that households (particularly female household members) spend shopping or gathering food. However, the market for off-grid refrigeration products is nascent and the prevalence of refrigerators in developing countries, particularly in rural areas, remains extremely low. Highly energy-efficient, appropriately designed and priced refrigerators are essential to this market’s development and to its subsequent positive development impacts.

The Global LEAP Awards Off-Grid Refrigerator Competition is supported by the U.S. Agency for International Development (USAID) through the *Scaling Off-Grid Energy: A Grand Challenge for Development* initiative, the U.K. Department for International Development’s (DFID) [Ideas to Impact Programme](#), Power Africa’s [Beyond the Grid](#) initiative, and the U.S. Department of Energy.

Quick Overview

The following table provides a summary of key information contained in this document. Detailed information about each of these questions is contained in the body of the document below.

<p><i>Are you a manufacturer, product designer, or distributor of an off-grid refrigerator?</i></p>	<p>If yes – and your product is commercially available¹ – you may be eligible to participate in the 2016-17 Global LEAP Awards Off-Grid Refrigerator Competition and Innovation Prize.</p>
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	<p>If yes – and your product is <i>not</i> commercially available but is a late-stage prototypeⁱⁱ – you may be eligible to participate in the 2016-17 Global LEAP Awards Off-Grid Refrigerator Innovation Prize only.</p> <p>See endnotes (i) and (ii) on page 11 for definitions of commercially available and prototype.</p>
<i>What are the benefits of participating?</i>	<p>Winners and Finalists in the Competition will be able to use the Global LEAP Awards logo, will be featured in an affiliated promotional campaign, will be eligible to participate in an affiliated procurement incentives program, will be considered by Acumen and Shell Foundation as they work to identify breakthrough innovations and impact investment opportunities in off-grid appliance enterprises, and will be considered for up to three (3) \$200,000 Innovation Prizes.</p> <p>Late-stage prototype products will be considered for up to three (3) \$200,000 Innovation Prizes, and will be able to use the Global LEAP Awards logo and will be featured in affiliated promotional efforts. However, prototype products will not be able to participate in the procurement incentives program affiliated with the Competition.</p>
<i>When do nominations open?</i>	21 September 2016
<i>When do nominations close?</i>	20 January 2017
<i>How will products be tested?</i>	Testing will take place in a laboratory as well as in the field, and will be conducted according to 1) the Global LEAP Off-Grid Refrigerator Test Method and 2) Global LEAP Off-Grid Refrigerator Field Test Protocol.
<i>Is there a fee to participate?</i>	<p>Nominations are free, and can be submitted online.</p> <p>Laboratory testing costs are estimated to be \$4,400 for refrigerators and \$6,000 for combination refrigerator-freezers. Participants may be required to pay some or all of the costs associated with product shipment and laboratory testing. However, USAID expects to be able to provide support for product shipment and laboratory testing costs for a limited number of participants based on a case-by-case needs assessment. In-country field testing costs will be met by DFID’s Ideas to Impact Programme.</p>
<i>Who should I contact with additional questions?</i>	info@GlobalLEAP.org

The Awards

The inaugural Global LEAP Awards for off-grid refrigerators will recognize high-quality, energy-efficient, and affordable refrigerators that are appropriate for use with off-grid energy systems and/or renewable mini- or micro-grids. This round of the Global LEAP Awards consists of two parts:

- (1) An awards competition (“Competition”), recognizing commercially-available products that demonstrate a strong balance of energy efficiency, quality, affordability, and off-grid appropriateness; and
- (2) An innovation prize (“Innovation Prize”), consisting of a cash reward that will be awarded to up to three (3) commercially-available OR late-stage prototype products that demonstrate market-leading innovation in (1) Energy Efficiency, (2) Overall Value, and (3) Appropriate Design and User Experience.

All eligible commercially-available refrigerators nominated for the Global LEAP Awards will be considered for the Competition AND the Innovation Prize. Late-stage prototypes that are not yet commercially-available will be considered for the Innovation Prize only, and will not be eligible for an affiliated Global LEAP procurement incentives program (see “Benefits to Winners,” below).

Further details about eligibility requirements, nomination procedures, the evaluation process, and benefits to participants are provided below.

Nomination is free. USAID expects to be able to provide whole or partial support for product shipment and laboratory testing costs associated with the evaluation of nominated products for a limited number of participants. Provision of support will be based on a case-by-case needs assessment. In-country field testing costs linked to one of the innovation categories will be met by DFID’s Ideas to Impact Programme.

Terms and conditions apply. See Official Rules for details.

CLASP serves as the Operating Agent and Administrator (“Administrator”) of the Global LEAP Awards.

Eligibility Requirements

Products eligible for BOTH the Competition AND Innovation Prize must:

- (1) Be a commercially-available refrigeratorⁱⁱⁱ OR refrigerator/freezer combination unit^{iv} (collectively “refrigerators”);
- (2) Be either:
 - a. intended for use on, and/or compatible with, off-grid energy systems (e.g., low-voltage DC systems, AC or DC mini- or micro-grids)^v; or
 - b. a solar direct drive^{vi} refrigerator;
- (3) Be intended for small retail and/or household application^{vii};

(4) Fall into one of the following categories:

	Small	Medium	Large	Extra Large
Refrigerators	5L–50L	51L-100L	101L+	-
Refrigerator/Freezer Combination Units	5L-100L	101L-150L	151L-200L	201L+

- (5) Be able to store at least six (6) commonly-available commercial personal beverage containers (e.g. soda bottles);
- (6) Include a minimum two (2) year manufacturer warranty, serviceable in Sub-Saharan Africa (e.g. Kenya, Tanzania) and/or South Asia (e.g. Bangladesh, India), to cover parts and workmanship defects;
- (7) Be available for sale, either retail or wholesale, separately from an energy system;
- (8) Be available for warehouse sampling by 24 February 2017;
- (9) Pass all safety, workmanship, durability, and environmental test protocols in accordance with the Global LEAP Off-Grid Refrigerator Test Method;
- (10) Not exceed RoHS specifications for the following six (6) toxic substances: Lead (Pb); Mercury (Hg); Cadmium (Cd); Hexavalent Chromium (Cr VI); Polybrominated Biphenyls (PBB); Polybrominated Diphenyl Ethers (PBDE);
- (11) Use no Montreal-Protocol-regulated Class I ozone-depleting substances (ODS) as refrigerants; and
- (12) Use no Montreal-Protocol-regulated Class II ozone-depleting substances (ODS) (i.e., HCFCs) as refrigerants, OR have a warranty and clear implementation plan that covers reclamation and safe destruction of Class II ozone-depleting substances.^{viii}

Products eligible for the Innovation Prize ONLY must:

- (1) Be a late-stage prototype refrigerator OR refrigerator/freezer combination unit;
- (2) Be intended for use on, and/or compatible with, off-grid energy systems (e.g. low-voltage DC systems, AC or DC mini-grids);
- (3) Be available for testing by 10 March 2017;
- (4) Have a volume larger than 5L and be able to store and chill at least six (6) commonly-available commercial personal beverage containers (e.g. soda bottles);
- (5) Pass all safety, workmanship, durability, and environmental test protocols in accordance with the Global LEAP Off-Grid Refrigerator Test Method;
- (6) Not exceed [RoHS specifications](#) for the following six (6) toxic substances: Lead (Pb); Mercury (Hg); Cadmium (Cd); Hexavalent Chromium (Cr VI); Polybrominated Biphenyls (PBB); Polybrominated Diphenyl Ethers (PBDE);
- (7) Use no Montreal-Protocol-regulated Class I ozone-depleting substances (ODS) as refrigerants; and
- (8) Use no Montreal-Protocol-regulated Class II ozone-depleting substances (ODS) (i.e., HCFCs) as refrigerants, OR have a warranty and clear implementation plan that covers reclamation and safe destruction of Class II ozone-depleting substances.

Procedures

1. Nomination

Organizations that wish to nominate eligible refrigerators (“Products”) for the Competition and/or Innovation Prize should do so using the online [Nomination Tool](#). Nomination is free.

Entries may be submitted by Product manufacturers, designers, or associated distributors (“Nominators”). In the case of nominations from distributors, a supporting letter from the manufacturer that confirms their support for the Product nomination must be included with the submitted materials.

Nominators that are unable to submit the required form online or by email should contact the Administrator for an offline version. The Administrator can be contacted via email at GlobalLEAP@clasp.ngo, via fax at +1 (202) 750-5601, via phone at +1 (202) 750-5589, or via post at:

Global LEAP Awards
c/o CLASP
1401 K Street, NW, Suite 1100
Washington, DC 20005
United States of America

The deadline for receipt of all nominations is 23:59:59 EST on 20 January 2017. Products entered into the Competition will automatically be considered for the Innovation Prize as well.

Early submissions are strongly encouraged. Nominators may submit more than one Product type or model, but a separate application package must accompany each nomination.

2. Conditions of Entry

Participants in the Global LEAP Awards may be added to Global LEAP, Power Africa, USAID, Scaling Off-Grid Energy, and Ideas to Impact mailing lists and contact databases, and may receive information on relevant activities.

Global LEAP, the Clean Energy Ministerial, USAID, UK Aid, and the Administrator may use the winning and/or finalist Products for public information purposes and to promote the Global LEAP Awards via such media as websites, brochures, and events.

Global LEAP, the Clean Energy Ministerial, USAID, UK Aid and the Administrator reserve the right to make public any Product specifications declared in the nomination form (e.g., energy consumption, capacity) and performance data gathered through the Competition and the Innovation Prize laboratory and field testing process.

USAID will conduct a responsibility determination prior to award, to ensure that award to the organization meets applicable US laws, including regulations administered by the Office of Foreign Assets Control (OFAC) of the US Department of Treasury. Innovation Prize funds may not be awarded to an organization listed in the UK Home Office proscribed terrorist groups or organizations list.^{ix} Recipients of an Innovation

Prize will be required to sign the Ideas to Impact Counter Terrorism Anti-Corruption and Anti-Slavery Declaration.

All decisions rendered by the Global LEAP Awards Expert Judges or Administrator are final.

Should no nominated Product in a given Competition or Innovation Prize category satisfy the stated requirements, the Administrator reserves the right to not name a Winner or Winners in that category.

Should the Administrator discover that reliable comparisons of products across the program's categories or sub-categories are not possible, the Administrator reserves the right to strike or redefine those categories, or create new categories.

The Administrator reserves the right to adjust, strike, or redefine any of the program's terms and conditions at any time and for any reason.

Materials submitted for the Awards will not be returned.

3. Pre-Screening & Notification

A panel of Expert Judges will pre-screen nominations and select "Preliminary Finalists". This review will be based upon Product data as provided in the nomination.

The Administrator will notify Nominators of pre-screening decisions by email on or before 10 February 2017. Products that pass the pre-screening process will be deemed "Preliminary Finalists." In order to ensure readiness for the evaluation process, Nominators should expect to be deemed "Preliminary Finalists" and prepare product samples accordingly.

4. Product Sampling

Competition:

Upon notification, Nominators of commercially-available Preliminary Finalists in the Competition must make a minimum of fifty (50) nominated Products available for random warehouse sampling. The Administrator's designated sampling agent will randomly select two (2) nominated Products for testing. The samples will be packaged by the Administrator's sampling agent, and then delivered by the Nominator to their shipping agent of choice.

Innovation Prize:

Upon notification, Nominators of late-stage prototype Preliminary Finalists must directly ship two (2) nominated Products for testing.

For all Preliminary Finalists, Products will be shipped to the Administrator's designated laboratory for laboratory testing.

All sampling must be completed and samples must be received by the Administrator's designated test laboratory facility no later than 10 March 2017 and without exception.

5. Fees

Testing costs are estimated to be \$4,400 for refrigerator Products and \$6,000 for refrigerator-freezer combination unit Products. The Administrator expects to be able to provide funding to subsidize the product shipment and laboratory testing costs associated with the evaluation of nominated products for a limited number of participants. Nominators must request to be considered for this support in their nomination forms. Provision of support will be based on a case-by-case needs assessment that will take into account the following considerations:

- Technical merit of the Product
- Size of Nominator organization
- Location of Nominator organization

For Nominators that request support for shipping and laboratory testing costs, the outcomes of the needs assessment will be provided on a rolling basis.

6. Laboratory Testing

Preliminary Finalist Products in both the Competition and Innovation Prize will be evaluated based on a combination of quantitative and qualitative factors, including:

- Quantitative Factors
 - *Power Consumption*
 - *Cooling and/or Freezing Capacity*
 - *Performance in Under- and Over-Voltage Conditions*
 - *Performance After Exposure to High Heat and Humidity*
 - *Total Cost of Ownership*
- Qualitative Factors
 - *Design, Durability and Usability*
 - *Innovative Features/Functions*
 - *Warranty (for commercially-available products only)*
 - *Truth in Advertising^x*

7. Field Testing

Field testing relates to one of the Innovation Prize categories: Appropriate Design and User Experience. All Products that satisfactorily complete laboratory testing will undergo field testing to evaluate Products' design and technical performance in a real-world setting. Field testing will be coordinated by Ideas to Impact, and is expected to take place in Uganda.

Samples will be shipped by the Administrator from the test laboratory to field test sites. Products will be placed with small-scale entrepreneurs chosen by Ideas to Impact's in-country team. These entrepreneurs will be chosen based on stability of their business operations, accessibility, and ability to use a refrigerator. Field test coordinators will ensure reliable power systems are in place prior to delivery of Product samples.

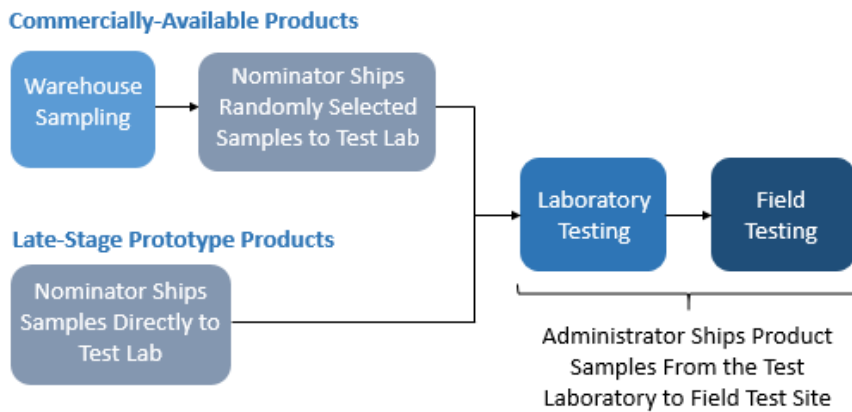
Products will be evaluated based on a selection of the factors listed in the Laboratory Testing section above, as well as additional user-oriented factors, including:

- Technical Performance
 - Energy consumption and interior temperature will be evaluated by remote monitoring devices connected to the product throughout the field test period.
 - Product integrity and durability will be evaluated by an assessment of physical condition before and after the field test period.
- Value Proposition/Impact of Product
 - Economic impact of the product on test site businesses will be evaluated through an assessment of sales and expenditure data before and after the field test period and Product price.
- User Experience
 - Test subject perception of Products will be evaluated through semi-structured questionnaires administered by Ideas to Impact’s trained in-country staff. Issues covered in the questionnaires may include perceived performance, value, aesthetics, and durability.

Results of the field test will be reviewed by a panel of Expert Judges^{xi}, who will make the final determination of the winner.

Field testing may be subject to additional terms and conditions, as determined by Ideas to Impact. The Administrator will provide further information about this process as it becomes available.

8. Overview of Sampling and Testing Process



9. Winner Selection

Competition:

The Competition’s Preliminary Finalists will be awarded up to 100 points based on the following:

- Laboratory Testing:** Testing of Products’ power consumption and cooling performance, and certain design and quality factors, will be conducted according to the Global LEAP Off-Grid Refrigerator Test Method, a method developed referencing internationally-accepted test standards.^{xii}

- B. *Expert Assessment*: A panel of Expert Judges will evaluate quality, design and usability factors (e.g. options and functionality, look and feel of Product, packaging and instructions), based on data provided in the nominations and gathered through Laboratory Testing.^{xiii}

Winners will be identified in the following way:

- **Up to 80 points** will be awarded based on a formulaic assessment^{xiv} of “total cost of ownership” (which is based on Laboratory Testing results of power consumption and standardized Global LEAP Awards assumptions about retail price, \$/kWh, Product lifetime, and usage) and performance.
- **Up to 20 points** will be awarded based on the assessment of the Expert Judges.

The Product in each category that earns the most points will be declared the “Winner” of its category, and all other high-performing products will be declared “Finalists.”^{xv}

Product test results will be delivered to the Nominator on a confidential basis. Test results may be used by Global LEAP for market intelligence reporting. With the exception of (1) declared performance data submitted with a Product’s nomination and (2) test results, all intellectual property related to the Product, its technology, and/or its design will remain with the Nominator.

Innovation Prize:

Innovation Prize Winners will be those Products that clearly demonstrate innovation in comparison to the currently existing market, as identified by the Expert Judges based on the data and observations made during the Laboratory Testing and Field Testing processes outlined above.

Up to three (3) Innovation Prizes may be awarded pending the demonstration of market-leading innovation. One (1) Innovation Prize is expected to be awarded for each of the following product characteristics:

1. Energy Efficiency^{xvi}
2. Overall Value^{xvii}
3. Appropriate Design & User Experience

Products may be eligible for more than one Innovation Prize. The Prizes for Energy Efficiency and Overall Value will be awarded based on Product performance during laboratory verification testing. The Prize for Appropriate Design & User Experience will be awarded based on product performance during field testing, as described in section 7. Details about the Field Test Protocol will be provided as they become available.

For more information, please see the [Official Rules](#).

10. Winner Announcement

Winners and Finalists of the Competition and the Innovation Prizes for Energy Efficiency and Overall Value will be announced during a high-profile event (see timeline below). Details about this event will be provided as they become available.

The Winner of the Innovation Prize for Appropriate Design & User Experience will be announced following completion of the field testing process (see timeline below).

11. Benefits to Global LEAP Awards Winners and Finalists

The manufacturers of Winners and Finalists will receive the right to use a Global LEAP Awards logo and phrase in marketing materials for the Product.

All Global LEAP Winners and Finalists will be eligible for the following:

A Global LEAP-sponsored communications campaign will be launched in conjunction with the awards to publicize the Winners and Finalists in the Competition and Innovation Prize, and raise consumer awareness about high-quality and energy-efficient off-grid refrigeration. Winners and Finalists in the Competition and Innovation Prize will also be considered by [Acumen](#) and [Shell Foundation](#) as they work to identify breakthrough innovations and impact investment opportunities in off-grid appliance enterprises. Among other efforts, Global LEAP will distribute information about Winners and Finalists to off-grid industry leaders and procurement officials.

Benefits Specific to Commercially-Available Winners and Finalists

Commercially-available Winners and Finalists will be eligible to benefit from an affiliated Global LEAP program focused on incentivizing the large-scale procurement and distribution of Global LEAP Awards winners and finalists in Bangladesh and East Africa. Further details about this program are forthcoming. For more information, please see an [overview of this program](#).

Benefits Specific to Innovation Prize Winners

Up to three (3) Winners will receive a \$200,000 cash prize, paid by USAID and DFID's Ideas to Impact Programme.

12. Timeline

Stage	Item	Due Date and/or Timeline
Nominations	Nominations Open	21 September 2016
	Nominations Due	20 January 2017
Pre-Screening	Preliminary Finalists Selected by Expert Panel	by 10 February 2017
	Nominators Notified of Preliminary Finalist Status	by 10 February 2017
Testing & Verification of Awards Finalists	Commercially-Available Preliminary Finalist Products Available for Random Warehouse Sampling	by 24 February 2017
	All Samples Received by Test Laboratory	by 10 March 2017
	Laboratory Testing Begins	by 13 March 2017
	Laboratory Testing Ends & Winners Identified	by 31 July 2017
	Field Testing Begins	by 31 July 2017
	Field Testing Ends & Winner Identified	By 31 December 2017
Awards Announcement and Promotions	Competition Winners & Finalists and Innovation Prize Winners for Energy Efficiency and Overall Named	August 2017
	Innovation Prize Winner for Appropriate Design & User Experience Named	January 2018

13. Awards Program Contact Information

For general inquiries contact Global LEAP: info@GlobalLEAP.org. For specific inquiries about the Global LEAP Awards contact the Administrator: GlobalLEAP@clasp.ngo

ⁱ For the purposes of this program, “commercially-available” means that Nominators must be able to fulfill an order of no less than 500 units by 31 August 2017.

ⁱⁱ For the purposes of this program, “prototype” means a late-stage design that is (1) built, (2) capable of being tested BOTH in a laboratory and field testing environment, and (3) NOT commercially-available by 31 August 2017.

ⁱⁱⁱ A refrigerating appliance with an insulated cabinet with one or more compartments that are controlled at specific temperatures and are of suitable size and equipped for household use, cooled by natural convection or a forced convection system whereby the cooling is obtained by one or more energy-consuming means (Source: IEC).

^{iv} A refrigerating appliance having at least one fresh food compartment and at least one freezer compartment (Source: IEC).

^v Eligible Products should be designed to function safely and effectively within the voltage swings that are common in solar-charged, battery-based distributed energy systems. The Administrator anticipates that most Products will be designed for a nominal 12V DC application, but other voltages are eligible.

^{vi} A refrigerator powered by a solar electric system with no battery (Source: WHO).

^{vii} The energy systems referenced in (v) provide limited amounts of power. The most commonly available low-voltage DC systems designed for use by a single household have an upper range of 200 Wp. The amount of power supplied by micro- and mini-grid systems varies by technology and project developer. An illustrative range of a selection of mini-grids deployed in India is from 10 to 200 kWp, with approximately 100 Wp available per household. This restricts the overall size and energy consumption of refrigerator products that will function satisfactorily on these systems. Large-scale refrigerators designed primarily for agricultural or industrial application (e.g., dairy farm, warehouse cold storage) are outside the scope of the Competition, as are refrigerators explicitly and solely intended for clinical (e.g., vaccine storage) uses.

^{viii} ODS refers to all Class I (e.g., CFCs) and Class II (e.g., HCFCs) substances as defined in the Montreal Protocol on Ozone-Depleting Substances.

^{ix} For more information see OFAC website: <http://www.ustreas.gov/ofac>, including the list of Specially Designated Nationals..

^x “Truth in advertising” refers to a product’s tested performance versus specified or claimed performance on key performance metrics (e.g., power consumption). Commercially-available products that badly violate “truth in advertising” norms (e.g. specified or claimed performance significantly overstates actual performance) may be excluded from the program. Prototypes will not be evaluated on “truth in advertising.”

^{xi} The panel of Expert Judges will include technical, development, and off-grid industry and market experts, and may include representatives from the donor agencies supporting the Competition (i.e. USAID, U.S. Department of Energy). Expert Judges will not have personal or financial interests in, or be an employee, officer, director, or agent of any entity that is participating in the competition.

^{xii} Referenced test methods include IEC 62552 (*Household refrigerating appliances – Characteristics and test methods*) and WHO/PQS/E003/RF05-VP.4 (*Refrigerator or combined refrigerator and water-pack freezer: Solar direct drive without battery storage*).

^{xiii} A Finalist may earn two (2) points of “extra credit” for each year of its warranty beyond the required two years (see eligibility requirements), up to eight (8) total points. Nominators must provide a copy of the warranty in English.

Finalists using exclusively natural refrigerants will receive three (3) points of “extra credit”.

^{xiv} Indicative formulaic assessment: *Total Cost of Ownership* (Energy consumption required to reach and maintain target temperature range over 24 hours*standardized lifetime usage assumptions[kWh]*\$/kWh) + (wholesale price*standardized retail price modifier)= \$XXX. In this assessment, Preliminary Finalists with a lower total dollar figure will receive a higher score.

Laboratory testing will be conducted using the acceptable temperature and test load package specifications referenced in IEC 62252.

This calculation will be used only for the purposes of judging the Global LEAP Awards, and its results will not be shared.

^{xv} The Administrator reserves the right to exclude from all Competition promotions any Preliminary Finalist that fails or performs poorly in the Laboratory Testing, Field Testing and/or Expert Assessment.

^{xvi} For the purposes of this program, “Energy Efficiency” is defined as *Energy Consumption Required to Reach and Maintain Target Temperature Range Over 24 hours (kWh) / Surface Area (m²)*.

^{xvii} For the purposes of this program, “Overall Value” refers to the total score as determined by the Laboratory Testing and Expert Assessment process outlined in the indicative formulaic assessment in (xiv). To allow for comparison of commercially-available products and late-stage prototypes, Nominators of prototypes will be required to provide an estimated wholesale cost along with a detailed justification of that cost. The Winner of the Innovation Prize for Overall Value will be that product with the highest total score across all competition categories.