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This document has been created to support your evaluation process. In case you require further information do not hesitate to contact us directly via email expert@solarimpulse.com and/or to join the Q&A webinar of which the program can be found on the Expert dashboard.
INTRODUCTION

CONTEXT

Following the success of the first solar flight around the world, the Solar Impulse Foundation (SIF) has launched the second phase of its action: **selecting 1000 Solutions that can protect the environment in a profitable way**, and bring them to decision makers to encourage them to adopt more ambitious environmental targets and energy policies.

Governments, companies and institutions must urgently adopt more ambitious environmental and energy policies. They should stop compromising for minimal targets, but rather should base their negotiations and objectives on the reality of what clean profitable technologies can offer today. Not only for future generations, but for the current benefit of people, industry and the planet.
AIM AND METHODOLOGY

The aim is to identify Solutions that are both clean and profitable and attribute them the Solar Impulse Efficient Solution Label; through a trustworthy and verified methodology based on a rigorous assessment performed by external independent Experts (you).

In particular, you will assess the Solutions submitted against three key thematic - feasibility, environmental benefits, and profitability. The assessment will take place online, with your feedback collected in the form of YES/NO selection and comments. More details are provided in this document in the coming sections.
ASSESSMENT PROCESS

OVERALL SELECTION PROCESS

The assessment process (Expert evaluating Solutions) is part of the Solution’s selection process. The diagram below depicts the main steps of a Solution from submission to obtaining the final outcome. The details of assessment process which concerns Experts’ evaluations are further detailed in the paragraphs below.
DEADLINES AND EXPECTATIONS FOR THE ASSESSMENT PROCESS

Once a Solution is assigned to an Expert for assessment, he/she will be given the opportunity to read a short description of it and then accept or decline the assignment accordingly.

Experts are expected to:

ACCEPT/DECLINE a Solution assigned to them WITHIN 5 DAYS (since assignment date).

COMPLETE the assessment WITHIN 15 DAYS (since assignment date) without possibility of extension².

In case an Expert fails to comply with the up-mentioned deadlines his/her assessment will be archived (not further considered for evaluation).
AREAS OF EXPERTISE

By accepting the assessment, the Expert assumes full responsibility and it is therefore expected that the Solution falls in his/her area of expertise.

Please notice that if the Solution is too far outside the Expert’s area of expertise, he/she should decline the invitation to assess it. Similarly, if the Expert is aware that he/she will not be able to assess the Solution within the given deadline, he/she should not accept the invitation to assess it.
CONFIDENTIALITY AND PERSONAL INFORMATION

Please note that the Solution’s providers (innovators) are asked to provide non-confidential information only.

As a precaution and to allow the Solar Impulse Foundation to stay in control of the information flow of the selection process, Experts are asked to keep all information received as confidential/sensitive and to delete any record after a certain period of time (one month) after the task has ended.

In addition, to retain the integrity of the process, the identity of which Experts are assigned to a Solution remains confidential.

Special cases: If an entity considers appropriate to disclose more confidential information, a Non-Disclosure Agreement (NDA) can be drafted between the Member and the SIF, as well as between the SIF and the Experts involved in the assessment process. In such case, only Experts who have agreed to sign the NDA will be assigned to the Solution. It is important that all the stakeholders involved remain aware that adding this step might cause significant delays in the assessment process.
USABILITY OF ASSESSMENTS

Once all the three Experts have submitted their Assessments, the SIF’s team will review and validate their work.

SIF retains the right to fully invalidate assessments where:

- Inappropriate language (defamatory, offensive or abusive) has been used;
- The Expert(s) clearly highlight in his comments that the Solution falls out of his/her area of expertise (e.g. Experts writes “Disclaimer: I am not an expert in biological processes”);
- The Expert(s) left open questions that clearly highlight his lack of knowledge/expertise.
- The Expert’s justification is an obvious copy-and-paste of what the Solution provider has written in the Solution Submission Form (SSF);
- The Expert(s) copy-and-pasted his justification across different criteria (e.g. Expert provide the exact same justification -comment - for Criterion 1 and Criterion 2).
Experts are expected to perform Assessments according to the following principles:

- The answer YES/NO must be coherent and properly justified in the comment box.

- The justification in the comment box must be of sufficient length – minimum 250 characters (approx. 40 words).

- The comment box should not contain open questions and/or uncertainties about the Solution. Experts must ask any additional information to the Innovator via chatbox.

- The justification to the answers should provide a clear, fair, and unbiased statement, which is accessible and meaningful to the readers of the report.

- The comment box should contain enough justification to be considered a valuable feedback to the Member (Solution’s provider).
CHATBOX

If the Expert has any questions or curiosities during the assessment process, **he/she must contact the innovator via chatbox** which is accessible any time during her/his evaluation.

Please notice:

- **Experts are expected to wait for the answer before submitting the assessment.** Respectively, Innovators are encouraged to answer within 3 to maximum 7 days to the Expert’s question, before being archived.

- **Experts shouldn’t contact the Innovator via phone call, private messages, personal email, or any other tool that might compromise the anonymity of the reviewing system.**

- The chatbox conversation history, while anonymous, **will be also visible to the other(s) Expert(s)** assessing the same Solution.
Each Solution is assigned to 3 Experts. Once three usable assessments are completed and validated by SIF’s team, the following deliberation rules are applied:

**LABELED**: A Solution is Labeled (awarded the Solar Impulse Efficient Solution Label) **when the Solution received a minimum of two “YES” answers from two different Experts on all five criteria; meaning that all five criteria must have a majority of “YES”**.

**REJECTED**: A Solution is rejected **when the Solution received two “NO” answers from two different Experts on the same criterion**.
Both rejected and Labeled Solutions receive a feedback in the form of the **Assessment Summary Report (ASR)** which compiles the three usable assessments performed by the Experts assigned to the Solution.

The Experts who have evaluated the Solution will also receive the ASR giving them the chance to explore and learn from their peers.

**PLEASE NOTICE:** All the (valid) comments written by the Experts will be included in the ASR.
ASSESSMENT STRUCTURE

The assessment methodology is designed to evaluate candidate Solutions against five criteria grouped in three different themes: Feasibility, Environment and Profitability.

The details of what is to be considered in the assessment of each criterion by the Experts can be found in the next paragraphs. All criteria are structured with a response (a YES or NO selection) and an open question, as shown in the next page.
Solution Assessment Form (SAF)

Feasibility
This section captures the ability of the Solution to be credible (based on a resilient technology or concept) and captures if the Solution is already or has the potential to be scaled up and deployed concretely in the real world (vs. in lab).

Criteria 1 - Credibility of concept: Can the technology behind the Solution be constructed and operated as designed?

YES  NO

Criteria 2 - Scalability: Is the manufacturing (if a product) or distribution (if a service) of the Solution at scale technically feasible?

YES  NO

Environmental Impact
This section captures the ability of the Solution to have a direct positive impact on the environment over its entire lifecycle compared to a reference without any significant negative impact transferred.

Criteria 3 - Environmental benefits: Can the Solution deliver an incremental environmental benefit versus a mainstream alternative, considering the lifecycle (production, use and disposal stages) of its value chain?

YES  NO

Profitability
This section captures the capacity of a Solution to deliver an economic incentive for the client and to generate profits for the seller in a 5-year timeframe, regardless of its marketing strategy, its positioning towards competitors, the novelty of the idea and the resources and experience of the team.

Criteria 4 - Client’s economic incentive: Is the total cost of ownership of the Solution lower (or same) compared to the mainstream alternative? Please evaluate this considering potential hidden benefits for society, and foreseeable regulatory changes within 5 years.

YES  NO

Criteria 5 - Seller’s profitability: Could the Solution itself be profitable for the seller within 5 years, with a sale’s price at which clients would buy it? Please evaluate this regardless of the marketing strategy and the novelty of the product.

YES  NO
FEASIBILITY

Feasibility is used to determine the technical viability of the idea behind the Solution, such as ensuring a Solution is feasible in the real world; meaning there are no insurmountable technical obstacle for its implementation in the real world.

This section considers the technical requirements of the proposed solution and captures its ability to be credible (based on a resilient technology or concept) and its potential to be technically scaled up and deployed in the real world (vs. in a laboratory environment) without additional constraints.
FEASIBILITY – QUESTIONS AND PRACTICAL EXAMPLE

Criteria 1 - Credibility of concept: Can the technology behind the Solution be constructed and operated as designed?

YES  NO

The Solution is based on a mobile aeroponic irrigation system which optimizes the space and allows to maximize natural light use with a controlled-climate system (based on a machine learning algorithm). Aeroponics technology has been around, in one form or another, since at least the late 1980s. The technology is fairly simple, credible, and well-known for being applicable for the type of crops described (lettuce and aromatic “leafy” plants).

Criteria 2 - Scalability: Is the manufacturing (if a product) or distribution (if a service) of the Solution at scale technically feasible?

YES  NO

Each aeroponic irrigation system can be built up according to customer’s need. It is certainly scalable as the materials (for instance supports and lighting setups), as well as macro / micro- nutrients, or grow mediums, or water can be easily obtained in large quantities. The company should be able to ensure a reliable procurement of these materials when scaling up.
ENVIRONMENTAL IMPACT

The environmental impact of a Solution is ultimately driven by the different phases of the lifetime of the product itself: production, transportation and distribution, as well as use and disposal phase.

This section captures the Solution’s potential to enable a direct positive impact on the environment compared to the mainstream alternative identified.

Where the mainstream alternative is the alternative to the Solution which currently serves a large share of the market (at least 40%) in the same geographical context.

In order to reduce the process complexity, information on life cycle assessment (LCA) is not mandatory for the innovator to provide; however, a simplified LCA is provided instead.

Special case: Information and communication technology (ICT), and more in general software-based Solutions have direct and indirect effects on the environment. Direct environmental effects of ICT include the resources used and emissions that are caused by the production, use, and disposal of ICT hardware. Indirect environmental effects of ICT are ICT-induced changes in patterns of consumption and production also in domains other than ICT and the environmental implications of these changes. Both types of effects make ICT a relevant factor for the achievement of the United Nations (UN) Sustainable Development Goal (SDG) 12—“Responsible consumption and production”.

ASSESSMENT GUIDELINES FOR EXPERTS_VERSION 4 (FEB 2020)
Criteria 3 - Environmental benefits: Can the Solution deliver an incremental environmental benefit versus a mainstream alternative, considering the lifecycle (production, use and disposal stages) of its value chain?

YES  NO

This solution allows three key savings (i) water, (ii) energy, and (iii) CO2. The environmental impact of cultivating lettuce/aromatic plants using aeroponic culture is lower as it consumes significantly less water (30% less) compared to both traditional cultivation systems and hydroponic systems. The automated system ensures a full control on plant growth, including a correct nutrient distribution and light adjustment. This allows to maximize the production and reduce energy consumption.
This section captures the capacity of a Solution to deliver an economic incentive for the client. In this section the Expert should focus on both the quantifiable and hidden direct or indirect economic savings / added value that the solution brings to the client purchasing and using it to translate it into a total cost of ownership compared to the mainstream alternative.

Overall an Efficient Solution should create direct savings (purchase price is cheaper than mainstream alternative) or indirect savings (in the form of return on investments) for the client over its lifetime.

However, there are a few exceptions where Solutions effectively are MORE expensive than the mainstream alternative (today) but have the potential to become cheaper given the right conditions.
SOME EXAMPLES TO BETTER UNDERSTAND

A Solution that focuses on using electricity to zap weeds creates indirect savings for the client (return on investment) compared to its mainstream alternative chemical treatment.

A Solution that improves air quality creates public health savings (savings for a third entity who is not the client) compared to its mainstream alternative no action to improve air quality.

A Solution that uses bioplastics today is not cheaper BUT has potential to create saving for the clients if regulations were to change within 5 years compared to its mainstream alternative fossil-based plastic.
Criteria 4 - Client’s economic incentive: Is the total cost of ownership of the Solution lower (or same) compared to the mainstream alternative? Please evaluate this considering potential hidden benefits for society, and foreseeable regulatory changes within 5 years.

YES  NO

Aeroponic systems can be expensive to set up due to the nature of the equipment involved. However, once the system is set up, it is cheaper than a traditional garden/soil farm to operate, especially considering that the average yield can be up to ten times higher than using the conventional methods. The price per square meter compared to a like-for-like system (hydroponic) is not significantly different (approx. 50 USD more) and depending on the setup/location. Therefore, the total cost is lower and comparable to other options available on the market.
PROFITABILITY – PART 2

This section captures the capacity of a solution to generate profits for the seller in a short term, regardless of the marketing strategy and the novelty of the product. In this section, the Expert should focus on the credibility of the price announced by the innovator and the existence of a market for the solution at this price considering the business model.

Overall an Efficient Solution should effectively generate profits for the seller, regardless of the nature of the entity selling it. For instance, if the company behind the Solution is a social business or a non-profit organization (who for instance reinvests 100% of its profits to cover its operating costs), it shouldn’t hamper the potential of actually generating profits.
Profitability Part 2 – Questions and Practical Example

Criteria 5 - Seller’s profitability: Could the Solution itself be profitable for the seller within 5 years, with a sale’s price at which clients would buy it? Please evaluate this regardless of the marketing strategy and the novelty of the product.

YES  NO

The target of 5 to 8 projects to generate a profit seems reasonable, also considering that the company has secured (i) a case study in Paris (ii) built a commercial operating greenhouse in France, and (iii) signed a contract to supply one of the largest sandwich manufacturers in Europe. The Innovator identified clients willing to buy at that price and I think the company has a potential to be profitable in the next 5 years.
CONCEPTUAL CONSIDERATIONS

A few conceptual considerations should be taken into account when performing assessments.

THE LABEL IS GRANTED TO THE SOLUTION AND NOT THE COMPANY

The company (human resources) plays a crucial role in defining a business plan that implements the company’s strategy, successfully brings the Solution to the market, and reaches the business’s goals. If a Solution has a weak/unreliable business plan, and the Experts raised serious concerns during the evaluation, it is clear that this “Solution” cannot be sold profitably by this company. However, SIF remains interested in the technology (“Idea”) and will seek any other entity which is able to bring the “Idea” (or a similar one) to market.
INDIRECT ENVIRONMENTAL BENEFITS

An Efficient Solution might not have a direct positive impact on the environment but rely on indirect impact. Indirect impacts on the environment are those which are not a direct result of the Solution itself, but often produced as a result of the Solution’s impact pathway.

For instance, indirect environmental effects of information and communication technology (ICT) are those effects of ICT that change patterns of production or consumption in domains other than ICT, or more precisely, the environmental consequences of these changes. Studies assessing indirect effects often concludes that they are desirable from an environmental perspective (e.g., reducing greenhouse gas (GHG) emissions) and that they are in total clearly larger than the direct effects (e.g., leading to a net reduction of GHG emissions).
COMPETITORS

Identifying the Seller’s competitors is fundamental to understand the business category, market segmentation, and commercial viability. **Nevertheless, equal competitive Solutions may still be strategically and tactically different, therefore co-existing profitably** in the market. SIF fully relies on the Experts’ capability to assess this aspect.
Since the main goal is to bring Solutions to relevant partners, investors and institutions, the Experts should not penalize the solution because it might face regulatory challenges but still develop in the comment what could be those challenges. Therefore, Experts should keep into account the regulatory constraints/external hurdles that could be overcome with the help of the World Alliance (e.g.: lack of deployment partnerships of investments, regulatory constraints or competition that could be modified/unbalanced by institutional efforts).
NOVELTY

The evaluation process should not penalize Solutions based on the lack of novelty. It is not a requirement for a Solution applying for the label to be a cutting-edge innovation (something fundamentally new and game-changing). In these regards, a well-known state of the art Solution in Europe can represent a major breakthrough if applied in a different setting (e.g. different geographical location) and therefore bring significant environmental and social economic benefits as well as profits.
RELIANCE ON SUBSIDIES

An Efficient Solution should not rely on subsidies or government incentives (a form of financial aid or support extended to an economic sector) to be profitable.

Subsidies, in whatever form they take, create distortions in normal market operations. Through subsidy programs, governments are deciding to favor a company, production or sector artificially. This generates a cost for other, more profitable projects and for the production of other goods and services that represent greater value in the eyes of consumers and that may have been chosen in the absence of subsidies. This results from the fact that economic resources are diverted from their most profitable use and are no longer available to be invested elsewhere in the economy.
QUESTIONS? GET IN TOUCH!

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