**Sixth Session of the Assembly of the International Solar Alliance**
**31 October 2023**
**New Delhi, Republic of India**

*Agenda Item 19*

<h2 style="text-align:center">Update on the ISA SolarX Startup Challenge</h2>

### Summary

This document presents an update on the first edition of the SolarX Startup Challenge. The ISA Secretariat, in collaboration with Invest India, launched the first edition of the SolarX Startup Challenge to crowdsource innovative solutions to some of the persistent challenges impeding the growth of the solar energy ecosystem in the Africa Region.

**Update on the ISA SolarX Startup Challenge**

## A.    Background

1.    The Second Session of the International Solar Alliance (ISA) Assembly approved the proposal for a SolarX Startup Challenge contained in the working document ISA/FC.01/WD.08. The Fifth Session of the ISA Assembly approved USD 600,000 for the first edition of the SolarX Startup Challenge for Africa. The Assembly Session also approved partnering with Invest India and other regional partners, including WAIPA and GOGLA, in the working document ISA/A.05/WD.15.

2.    The SolarX Startup Challenge seeks innovative, cost-effective and scalable local solutions to mobilise investments for solar in the ISA Member Countries. The initiative fosters a three-fold benefit: promoting the solar energy sector, reducing the energy crisis gap, and boosting the solar startup ecosystem.

## B.    Progress Update

1.    **Launch:** The ISA, in collaboration with Invest India, launched the first edition of the 'SolarX Startup Challenge' at COP27 on 10 November 2022 at Sharm-el-Sheikh, Egypt, to boost the entrepreneurs and startups in the solar energy sector in the Africa Region. A Programme Secretariat, including the ISA and Invest India, had been formed to run the program. Agreements had been signed with partners, including the Invest India and other agencies such as the World Association of Investment Promotion Agencies (WAIPA), the Global Association for the Off-Grid Solar Energy Industry (GOGLA), etc. The partners have been chosen based on their regional interests and potential to finance successful ideas.

2.    **Call for Applications**: The 'Call for Applications' webpage was initiated digitally through the ISA and the Invest India websites, inviting applications till 31 March 2023.

3.    **Applications received under the Challenge**: The competition's first African leg has received a remarkable response from startups across Africa and beyond. With more than 180+ applications received from a diverse range of countries including Botswana, Burundi, Cameroon, Congo, Cote d'Ivoire, Egypt, Ethiopia, France, Ghana, India, Israel, Kenya, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Sierra Leone, Somalia, South Africa, Tanzania, Togo, Tunisia, Uganda, United Kingdom, United States of America, Zambia, and Zimbabwe (28 countries), the competition has truly gone global in its reach and impact. The innovations received are both diverse and exciting. The startups have come up with an impressive array of innovative solutions that cover a wide spectrum of applications in the solar energy space. These innovations include off-grid solar applications, productive use of solar technology like Agri PV, rooftop solar systems, solar cooking, e-mobility, green hydrogen, and AI-based solar software and solutions, among others. These solutions have been designed to address some of the most persistent problems facing the African solar energy sector, such as access to reliable and affordable clean energy, the need to reduce carbon emissions, and the promotion of sustainability in the energy sector. What is truly inspiring is the fact that these innovative solutions have come from startups across the African

continent and beyond, highlighting the tremendous talent and potential that exists in the region (brochure attached).

4. **Formation of Committees for Evaluation**: A High-Level Evaluation Committee[1] chaired by the Director General of the ISA was constituted for reviewing, evaluating and selecting the applications under this Challenge as per guidelines approved by the Fifth Session of the ISA Assembly. An Operational Committee was constituted to oversee the everyday tasks associated with the Challenge, such as tracking and monitoring applications, organising capacity-building activities, and conducting outreach programs, consisting of one senior member and one associate from each- partner organisation. Their primary responsibility is to ensure that the Challenge runs smoothly and efficiently. The committee has scrutinised and evaluated each proposal, paying close attention to the strengths and weaknesses of each, to select those with the highest potential for success & further scale-up.

5. **The evaluation and shortlisting process** for all the applications received under this year's edition of the SolarX Startup Challenge was completed in June 2023. After a rigorous evaluation process, the top 20 winning startups were identified **(Annexure II).**

6. **Financial support for the Challenge**: The ISA Secretariat received funding commitments of USD 600,000 from the Children's Investment Fund Foundation (CIFF) for the first edition of the SolarX Startup Challenge. The ISA has secured funding for the second edition of the SolarX Startup Challenge for USD1M for Asia-Pacific from the Sequoia Foundation.

7. **Winner announcement**: The winners were declared in July 2023 during an award ceremony held on the sidelines of a G20 event in Goa, India. The winning solutions were rewarded through two modes:
    a. **Cash grant -** The ISA has provided cash prizes of USD 15,000 each to the 20 winners.
    b. **Acceleration support -** The first accelerator workshop was held in Kigali, Rwanda, on September 02, 2023, and all startups attended the sessions for brand management and access to financing. Virtual sessions and two more in-person sessions are planned in Ghana (Sep 29, 2023) and Ethiopia in October 2023.

8. **As a part of information dissemination, the following steps are being taken for media outreach:**
    a. Collaterals: SolarX Video, SolarX award brochure and coffee table booklet
    b. A video was prepared highlighting the SolarX Startup Challenge, the process, and the winners, which was showcased at the winner announcement event in Goa. The same video will be posted on various websites and played at international events. The coffee table booklet will be launched during COP28.
    c. Media Outreach: Social media outreach is being done through press releases and media interactions in Africa.

---

[1] The Evaluation Committee is also referred to as the Steering Committee

## C. Next Steps

1. The 20 innovations identified from the Challenge will be hand-held by the ISA, Invest India, and other support partners for wider implementation through the mentorship support programmes, investor connect programmes, and market access programmes. These programmes will be delivered virtually and physically to ensure outreach to all finalists from Q3 onwards through an extensive acceleration program.

2. **The initiative has brought together about 180+ startups from across the African solar segments in 2022-23. With the success of the first leg of the ISA SolarX Startup Challenge, the ISA Secretariat proposes to launch the second edition of the Challenge for Asia and the Pacific region. The Secretariat seeks approval from the ISA Assembly for the same.**

3. **The Assembly is invited to consider the update on the ISA SolarX Startup Challenge.**

**Activities for the first edition of the SolarX Startup Challenge**

**The activities of the first edition of the SolarX Startup Challenge for the Africa Region:**

**1.    Call for applications (till 31st March, 2023)**

1.1.    The ISA Secretariat hosted the SolarX Startup Challenge with the following objectives:
   a.    Identifying the problems & launching the Challenge
   b.    Mobilising the innovation ecosystem to address the challenges posed
   c.    Identifying the best solutions through a competitive selection
   d.    Supporting the two best solutions in each category through recognition and seed financial support- 20 winners

1.2.    The 'Call for Applications' webpage, launched at CoP27, was initiated digitally through the ISA and the Invest India websites, **inviting applications till 31 March 2023**.

**2.    Evaluation of applications (from April-June 2023):**

2.1.    For the assessment of the startup proposals, the ISA, along with Invest India, constituted an Evaluation Committee comprising the Members of the ISA, Invest India, and other partner organisations for assessing the startup proposals. **The evaluation and shortlisting of the applications was completed in June 2023**.

2.2.    The Evaluation Committee has evaluated the applications under the following ten problem statements.
   a.    Technical and financial innovations to accelerate the deployment of off-grid solar applications (mini-grids and SHS) to displace diesel, charcoal or traditional biomass
   b.    Development of more efficient models having high scalability potential and enhancing cost competitiveness (including life cycle costs) for solar drying, solar water heating, solar cooking or other similar productive use applications
   c.    Technical and/or business model innovations to bring down the cost of, or support grid integration for rooftop solar systems
   d.    Innovative solutions combining the use of solar with other applications (e.g.AgriPV) to save the land and boost smallholder family incomes
   e.    Manufacturing innovations (deployment or integration) to lower the cost or improve the efficiency/efficacy of solar or ancillary equipment in target markets
   f.    Innovative business models of solar power to emerging use cases such as e-Mobility, green Hydrogen, round-the-clock power, battery waste management, etc.
   g.    Development of soft tools based on AI and IoT to improve the manufacturing, deployment or integration of solar energy applications

h. Development of ecosystem in manufacturing of balance of system components, such as high-efficiency inverters, glass cover options for modules to maintain high transmittance and reduce water use in cleaning, EVA sheets, etc.

i. Development of high-efficiency DC pumps with a smart controller having potential for scalability and practical business models for dissemination

j. Services or software which help in land mapping, e.g. geo-spatial drones

2.3 After the evaluation process, the top 20 winning startups were selected. Two (2) winners have been selected under each problem statement category (2 winners x 10 problem statements = 20 winners). 7 out of 20 winners are women-led.

## 3. Declaration of results (July 2023)

3.1. **The winners were declared in July 2023 during an award ceremony held on the sidelines of a G20 event**. The winning solutions are being rewarded through two modes:

a. **Cash grant -**The ISA has provided cash prizes of USD 15,000 each to the 20 winners.

b. **Acceleration support -** All the selected innovators will be assisted through an in-house acceleration programme. The programme shall largely include pillars of Mentorship, Funding, and Market Access. USD 200 per person is being felicitated to mentors for holding sessions on brand management, finance, and technology scale-up.

## 4. Acceleration Programme (July-October 2023)

The innovations identified from the initiative will be supported by the Programme Secretariat and support partners for wider implementation. The acceleration programme will be delivered virtually and physically to ensure outreach to all finalists across the globe.

4.1. The programme will be across the following pillars:

a. **Market Access –** The innovators will be offered market access through the showcase and buyer-seller meets in collaboration with the ecosystem, private players, and enablers. The effort will ensure wider adoption and implementation of the innovation. The benefit will be two-fold. Firstly, the startups will get market access to grow their consumers and stabilise their offerings. Secondly, the selected innovation will be tested, and verified examples will add to the success of the programme.

b. **Investor Connect –** Investments play a significant role in the success of an early-stage organisation. The investment will not only allow the innovation to grow but have a greater capacity to implement the solution. The investors can fund the companies or pay for pilot projects for NFPs and social foundations.

c. **Mentorship Connect –** The early-stage entrepreneurs largely lag in large-scale implementation due to a lack of support and mentorship from the experienced.

**The 20 Winners of the SolarX Startup Challenge – Africa Edition**

| | |
|---|---|
| **P1** | • **Musana Carts Uganda Limited** is a registered company in Uganda that provides street vending carts that are powered by clean energy. The carts offer customised business features that enable market vendors to operate in a clean and desirable manner. They are modular and easily adaptable to any street vending business, providing access to finance and business training. The carts are designed to meet the vendor's specific requirements, such as deep frying, pan frying, grilling, and rotisserie use. The carts are built in Uganda, and the company provides a payment plan option to its clients.<br><br>• **HelloSolar Technology PLC** is a leading company in Ethiopia that provides affordable, reliable, and renewable energy solutions to the rural population in Ethiopia. HelloSolar has piloted more than 15 different quality solar products and commercialised about six different product types ranging from small to larger solar home systems as well as solar water pumps. |
| **P2** | • **Kuza Coolers Limited** is a startup based in Kenya that aims to improve food security in the fish value chain and promote economic resilience of the small-scale fisher folks through affordable refrigeration. Its freezers can achieve a low-temperature range of between 10°C to -20°C, suitable for fish preservation and can keep the fish fresh for at least 2 to 3 days. Kuza Freezers are fully powered by solar, making them suitable for off-grid usage and portable, which can be embedded on bikes for last-mile delivery. Kuza Coolers offers its products on a pay-as-you-go payment model, which is sustainable for low-income fisher folks. The company also has the ability to monitor the products remotely, hence improving the service quality.<br><br>• **Ecobora** is a startup based in Kenya that has introduced the first-ever solar cook stove to rural and marginalised schools in the region, aiming to reduce their dependence on firewood and improve their students' health and wellbeing. The product offered by Ecobora is a clean and affordable institutional solar cook stove that uses solar energy to generate sustainable modern cooking energy. This solution allows Kenyan rural and marginalised schools to save firewood costs and provide free meals to their students, improving their health and well-being and enhancing their access to education. Through savings from their solar stoves, schools can invest in upgrading learning facilities like libraries and computer labs for students. |
| **P3** | • **Centennial Power Limited** is a vertically integrated team of engineers, project managers, and sales professionals based in Rwanda. For over 6 years, Centennial's product has successfully provided health centres with the ability to improve vaccine cold storage supply chains. Since May 2017, the company has provided affordable and reliable power |

| | |
|---|---|
| | supply to vaccine cold storage and management facilities in Rwanda and Zambia. The projects have displaced standby diesel generators by offering on-site battery storage systems that provide the operational resiliency required for key infrastructure such as vaccine cold storage equipment.<br><br>• **INNO-NEAT Energy Solutions** is a Kenyan-based for-profit with a social mission organisation focused on manufacturing solar-ready repurposed lithium-ion batteries for use in solar energy storage applications in lowincome off-grid communities in Kenya. Their unique solution is aimed at lowering the overall cost of ownership of solar home systems for low-income off-grid communities by providing locally available and cheaper battery technology. What sets INNO-NEAT ENERGY SOLUTIONS apart from other similar solutions is their ability to develop a battery that is not only solar-ready but also repairable and maintainable, making it longer-lasting and more cost-effective in the long run. Additionally, their batteries are manufactured from repurposed lithium battery cells, making them an environmentally friendly solution that reduces waste. |
| **P4** | • **Urban Greens Limited** is a Ugandan-based startup that has developed a unique standardised urban small-scale commercial aquaponics system, utilising solar PV for daytime power and leveraging IoT for large-scale deployment with aspiring urban farmers. The startup aims to address the issue of food security and sustainable farming practices in Uganda by providing an innovative solution that combines the use of solar power with aquaponics technology, enabling urban farmers to generate a steady source of income and reduce pressure on natural resources.<br><br>• **STES Group Limited** is a multidisciplinary team with local and international exposure, including expertise in IoT, solar technology, and other emerging technologies. Their flagship product, BazaFarm, is a solar-powered technology that uses an IoT system and sensors to measure various soil parameters. The data collected is transmitted to the cloud, where it is recorded, analysed, and displayed on a web dashboard or mobile app. BazaFarm helps farmers to optimise crop yields, reduce waste, and minimise environmental impact, by addressing issues such as mismanagement of irrigation, misuse of fertilisers, uneven crop growth, and farming environmental impact. |
| **P5** | • **Green Scene Energy PLC (GSE)** is a company based in Ethiopia that aims to provide affordable and high-quality solar energy products to households and businesses in off-grid areas. GSE has established partnerships with retailers, microfinance institutions, Ethio Telecom, and Purpose Black Ethiopia to distribute lighting and productive use products using the pay-as-you-go (PAYGO) model. GSE provides digitally managed PAYGO-enabled affordable solar energy products to households and businesses. The company's partnership with microfinance institutions allows them to offer their products in the form of loans using PAYGO technology. The company is also leveraging Ethio Telecom's IoT |

| | |
|---|---|
| | infrastructure to offer off-grid M2M mobile solar solutions to households without charging high upfront costs. Customers can make payments at regular intervals using mobile money or other available payment options.<br><br>• **Salpha Energy Limited** is a Nigerian-based company that specialises in producing and distributing locally assembled solar home systems. The company's mission is to provide affordable and clean energy to households and businesses in Nigeria, with a vision to make clean energy accessible to millions of people in Africa. The products are locally assembled in Nigeria, which has led to the solar systems being 20 -30% lower than similar products while offering premium after-sales support. |
| **P6** | • **OffGridBox Rwanda Limited** is a company that aims to solve one of the biggest problems millions of people face worldwide – lack of access to safe water and energy. The company has a team of experts with over 60 years of collective solar experience deployed across 15 countries, making them well-equipped to tackle the challenge. They provide affordable access to clean water and renewable energy, ensuring communities are resilient in the face of climate change. OffGridBox's primary mission is to deliver energy and water products that ensure climate resilience globally. They are specifically interested in hydrogen due to their knowledge and experience in the intersection of water and energy and their patented hydrogen nozzle for clean cooking.<br><br>• **Bako Motors** is a Tunisian startup that is revolutionising the transportation sector by introducing eco-friendly electric vehicles powered by solar energy. Bako Motors has developed a product that is 70% locally manufactured and the first of its kind in the MEA region to offer electric/solar vehicles. The battery's range can reach 200 km, including 50 km per day of free charging thanks to the photovoltaic solar cells. Bako Motors is in the process of CE certification from TUV Munich and offers the Bako App with GPS, rearview camera, and tracking system to monitor the vehicle. |
| **P7** | • **Arinifu Technologies Limited** is a Kenyan startup that aims to revolutionise the poultry industry with its innovative product, Smart Brooder**.** Smart Brooder is an innovative solution that addresses the problem of heating chicks in the first weeks of their life. Most Sub-Saharan farmers use charcoal heating, which is difficult to control, and its heat dissipates over time. Smart Brooder is a cost-effective and efficient solution that can significantly reduce the heating cost for farmers while improving production efficiency. Arinifu Technologies Ltd also offers a software platform to help farmers keep records of their production and a processing facility equipped with solar-powered cold storage to reduce post-harvest losses.<br><br>• **Momint** is a UK-based community investment platform that provides individuals, communities, and large institutions access to digital assets tied to real-world solar installs |

| | |
|---|---|
| | and lease agreements. The platform solves the financing hurdle for solar adoption by making investing in solar accessible, transparent, and secure. Momint uses blockchain technology to ensure that legal contracts are immutable and spending and earnings are transparent and secure, thereby bridging the gap between virtual assets and real-world impact. Momint solves the financing hurdle for solar adoption by making investing in solar accessible, transparent, and secure. |
| **P8** | • **NoorNation** is a startup that aims to address the challenges faced by people living in rural and remote areas in Egypt and Sub-Saharan Africa by providing clean energy and safe water through the use of sustainable and decentralised infrastructure. The company's flagship product, LifeBox, is a fast-deployable unit that delivers clean energy and safe water, empowering rural communities, farming, and tourism businesses in less-served areas. LifeBox is an all-in-one, solar-powered unit that delivers both clean energy and safe water to rural communities, farming, and tourism businesses in less-served areas across Egypt and Sub-Saharan Africa.<br><br>• **ASACCOV GLOBAL NIGERIA LIMITED (A6GNL)** is a Nigerian company specialising in solar energy and technology services. A6GNL provides sustainable energy solutions that reduce clients' carbon footprint and promote renewable energy use in Nigeria. The company's portable solar generator with both DC and AC functions is a unique product that addresses the need for reliable and affordable electricity in Nigeria, even during power outages. The product is versatile and supports a range of appliances, making it ideal for households, SMEs, workstations, security surveillance systems, and more. |
| **P9** | • **Photons Energy Limited** is a Tanzania-based company that specialises in providing engineering, procurement, and construction services in the renewable energy and energy efficiency sectors. The unique selling point of Photons Energy Limited is their innovative solution of e-mobility and business model in solar distribution, which will bring down the operation costs of motorcycles and make transportation cheaper for local people, thus increasing revenue for operators. Additionally, their solution will create more employment opportunities. By providing genuine solar components, Photons Energy Limited will help speed up the growth of the solar energy sector in Sub-Saharan Africa and make it more accessible to people who currently lack access to electricity.<br><br>• **NorthLite Solar Limited** is a startup based in Ghana that provides solar power systems for off-grid and on-grid communities. The company's product line includes Solar PV productive utility solutions for water pumping and solar home systems for off-grid homes. The aim of the company is to accelerate the deployment of off-grid solar applications to displace diesel, charcoal or traditional biomass, promote the use of solar with other applications (e.g.AgriPV) to save land and boost small-holder family incomes, and develop |

| | |
|---|---|
| | high-efficiency DC pumps with smart controllers. NorthLite offers tailor-made solar PV energy smart solutions, meeting customer needs. |
| **P10** | • **Uwana Energy** is a Nigerian company that aims to accelerate the adoption of clean energy technologies in Africa by leveraging platform technology. Their end-to-end solution streamlines the process of matching solar consumers with installers and suppliers, offering affordable financing options and ensuring quality and transparency. The product provides an end-to-end solution that provides value to all involved in the value chain. From the end-user consumer to the financer of an energy system to the supplier. They all benefit from our one-stop platform that accelerates clean energy.<br><br>• **EG Platform Limited** operating under the brand name Energrow, is a Ugandan-based tech startup working towards sustainable and productive rural electrification in Africa. Energrow's product and service offering is centred around sustainable and productive rural electrification. The company aims to achieve universal access to energy in sub-Saharan Africa, driven by productive energy use. Energrow's digital product, Sunswitch, enables rural customers to access solar power at zero upfront cost, pay-as-you-use, and improve their income using electricity. |

4.2. Workshops (till date) have also been conducted in the month of September under this programme.