

EASING SOLAR DEPLOYMENT GLOBALLY



ISA IS AN INTERNATIONAL ORGANISATION
PARTNER OF THE 2023 G20 PRESIDENCY

FROM DIRECTOR GENERAL'S DESK



The International Solar Alliance (ISA) has been an international organisation partner to the G20 Presidency of the Republic of India, and this partnership marked a significant milestone in our journey towards a sustainable energy future.

As we move towards the end of on this exciting journey, I would like to highlight some key issues and messages that ISA has been advocating for in the global energy transition.

Promoting Universal Energy Access: ISA is actively working alongside the G20 Presidency to accelerate initiatives that promote solar-powered mini-grids in African rural areas. Our collective goal is to create a

roadmap for universal energy access through solar energy.

Green Hydrogen Innovation: The launch of the Green Hydrogen Innovation Centre as part of our Solar for Green Hydrogen programme is a major step in advancing green hydrogen production and supply chain standards. This virtual platform aims to harmonize and promote the use of green hydrogen worldwide, provide training, and create match-making opportunities between project developers and financiers.

Support for Solar Manufacturing: ISA looked at levers that can be developed by individual countries or the G20 as a whole to support solar manufacturing, with the aim of addressing disruptions and supply chain risks. Addressing Imbalances: ISA has identified three critical imbalances in the solar energy sector: geographical coverage of investment, sectoral coverage of investments, and manufacturing concentration. These imbalances pose challenges to the growth of solar energy, and we are committed to addressing them head-on.

In our pursuit of these goals, ISA has released several reports and initiatives at the G20 Energy Transition Working Group meetings. We launched the "Roadmap of Solar Energy for Universal Energy Access" report in collaboration with the G20 Presidency, focusing on promoting decentralized solar solutions in African rural areas.

Our "Ease of Doing Solar" (EoDS) report for 2022 and the "Global Trends in Solar Power - 2023" report were launched to provide insights into solar energy profiles and key trends in the global solar market.

The report on "Building Resilient Solar Supply Chains" was released, providing an in-depth analysis of the global solar supply chain and contributing to concept papers on solar manufacturing. In addition to these knowledge products, ISA's key initiatives were highlighted at the G20 ETWG meetings and Sustainable Finance Working Group meetings.

These included the launch of the Green Hydrogen Innovation Centre (GHIC) portal as part of the G20-ISA Green Hydrogen Partnership. This virtual platform

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will support green hydrogen production, utilization, and trade while incubating startups and providing training opportunities.

ISA also announced the winners of the first edition of its SolarX Startup Challenge for the Africa region, fostering innovation and entrepreneurship in the solar sector. The Global Solar Facility initiative, designed to attract private capital into under-served solar markets in Africa was also announced at the G20 Sustainable Finance Working Group meeting, designed to attract private capital into underserved solar markets in Africa.

These accomplishments underscore our commitment to driving the global energy transition and making solar energy accessible to all. I extend my gratitude to all G20 nations for their unwavering support and collaboration in this crucial endeavour. Thank you for your support, and let us continue to work hand in hand towards a greener and brighter world.

Ajay Mathur

Director General, International Solar Alliance

HIGHLIGHTS

ADVANCING SOLAR ENERGY ON THE GLOBAL STAGE: HIGHLIGHTS FROM THE G20 SUMMIT

The International Solar Alliance (ISA) is proud to have participated as an international partner in the G20 Summit, under the presidency of the Republic of India. In this forum, we have had the opportunity to share our collective actions aimed at promoting solar and other renewable energy sources, as well as non-carbon fuels. These actions not only provide a roadmap to meet the energy needs of both developing and developed nations but also emphasize the importance of doing so in a carbon-free manner.



One of the most remarkable achievements of the summit has been the significant financial resources mobilized for the global solar sector. In 2022, a staggering \$250 billion was invested, and the expectation for 2023 stands at an impressive \$380 billion. This mobilization of funds paints a positive picture, especially when compared to the peak of the fossil fuel boom, signifying a promising shift towards clean and sustainable energy solutions.

However, as we navigate the global solar landscape, we cannot ignore the existing imbalances that warrant our attention.

Geographical Imbalance

The first imbalance we observe is the geographical distribution of investments. Approximately 75% of these investments are concentrated in the OECD countries, China, and India. While these regions play a crucial role in the solar revolution, we must ensure that the benefits of solar energy reach all corners of the globe.

Sectoral Imbalance

The second imbalance is related to the sectors receiving these investments. More than two-thirds of the funds are directed towards large-scale solar farms. While these projects are essential, there is an urgent need to accelerate the expansion of solar energy in a way that directly impacts the daily lives of those who lack access to reliable energy sources. This includes initiatives such as deploying solar minigrids, powering agricultural pumps, and supporting cold storages, among other applications.

At ISA, we are actively working towards addressing these imbalances. We are



DG - ISA had the privilege of meeting Hon'ble Prime Minister Narendra Modi during the G20 Summit



At the G20 Summit 2023, DG - ISA with Saudi Arabia's Energy Minister, HRH Prince Abdulaziz bin Salman



DG - ISA with Hon Masatsugu Asakawa, President of the Asian Development Bank, on the sidelines of the G20 Summit 2023

currently facilitating over 9.5 GW of solar applications in 55 developing countries, including Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Furthermore, we have provided training to nearly 4000 individuals in the developing world, equipping them with the skills to support the growth of solar energy. Our mission to make solar the energy source of choice in various geographies and applications relies on your continued support.

A Climate-Friendly Future

A climate-friendly economy is at the heart of our common future. To achieve this, we must focus on actions that empower all nations, especially those in LDCs and SIDS, to accelerate the adoption of solar and other renewable energies. This acceleration, particularly in income-generating applications, should occur in a carbon-free manner.

Human-centric actions that enable this future must demonstrate that solar and renewable energy sources can meet the needs of individuals and communities. These sources not only result in new job opportunities but also reduce energy imports, lower urban air pollution, and increase incomes.

With this in mind, we request the extended G-20 community to enable and facilitate three crucial actions:

Knowledge and Capacity Building for Low and Zero Carbon Hydrogen: We are excited to launch the Green Hydrogen Innovation Centre, as highlighted in the New Delhi Declaration. Building the knowledge and capacity of all countries in producing, transporting, and using low and zero carbon hydrogen is vital.

Universal Energy Access through Solar Minigrids: In areas where extending the conventional grid is cost-prohibitive, solar minigrids can provide universal energy access. Guarantees to incentivize private sector investments can play a pivotal role, and we are proud to offer such guarantees to our member countries in Africa. **Empowering Solar Entrepreneurs:** Handholding entrepreneurs in countries around the world who have the potential to become major suppliers of solar energy is essential. Currently, we are strengthening 20 identified solar startups from Africa and plan to expand our efforts to the Asia & Pacific Region and the Latin America & Caribbean region.

The task before us is substantial, and time is of the essence. To achieve our goals, we need to form new partnerships, not only between international organizations and countries but



DG - ISA met with Hon António Guterres Secretary General of United Nations at the G20 Summit 2023



DG - ISA with President Luiz Inácio Lula da Silva of Brazil at the G20 Summit 2023

also among international organizations themselves. These partnerships will be instrumental in accelerating the global transition to solar energy.

ISA is committed to working with all stakeholders to accomplish these objectives and foster a brighter, sustainable future for our planet. Together, we can ensure that solar energy becomes the energy source of choice for the world we envision.

SPOTLIGHT: SIGNIFICANT INITIATIVES TO BOOST SOLAR DEPLOYMENT

ROADMAP FOR UNIVERSAL ENERGY ACCESS THROUGH SOLAR: A PATH TO A BRIGHTER FUTURE

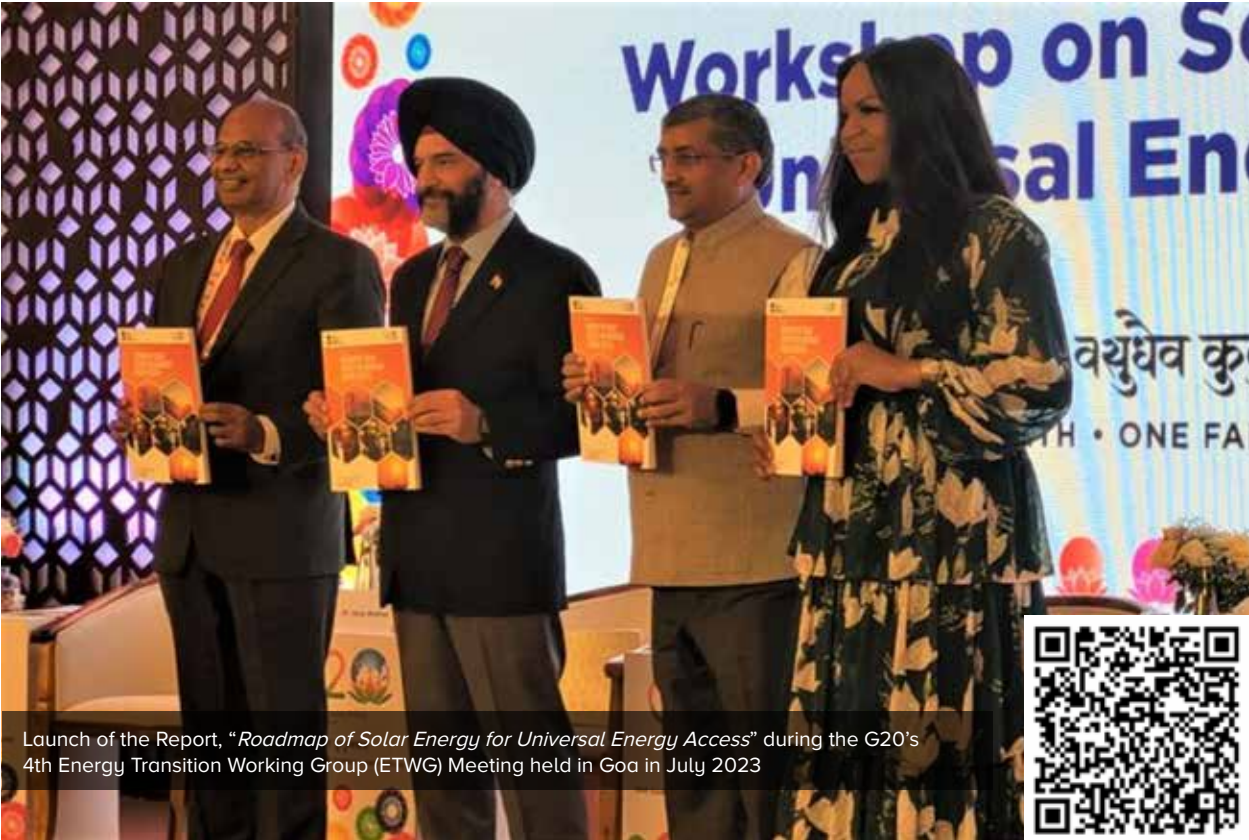
Access to reliable energy remains a daunting challenge, especially in developing regions across the globe. In 2021, a staggering 675 million people, or 9% of the world’s population, lacked access to electricity. Shockingly, at the current rate of progress, an estimated 660 million people could still be without electricity by 2030, constituting roughly 8% of the global population. This energy access crisis is further compounded by the fact that, in 2021, only 71% of the world’s population had access to clean cooking facilities, leaving over 1.9 billion people without clean cooking access by 2030. This issue is particularly acute in Sub-Saharan Africa and rural areas. Meeting the United Nations Sustainable Development Goal 7 (SDG 7) of universal energy access by 2030 requires renewed efforts and innovative solutions.

ISA’s Vision and Initiatives

In 2023, the International Solar Alliance (ISA), an international organization, partnered with the G20 Presidency of the Republic of India. As a key partner in the 2023 G20 processes, the ISA has championed the promotion of solar energy for universal energy access and a sustainable energy transition.

Working closely with the G20 Presidency and the Ministry of New and Renewable Energy (MNRE) of the Government of India, ISA organized a workshop and launched the report “**Roadmap**

of Solar Energy for Universal Energy Access” during the G20’s 4th Energy Transition Working Group (ETWG) Meeting held in Goa in July 2023. This initiative aimed to expedite efforts to promote solar-powered decentralized solutions in African rural areas, where the energy access challenge is particularly pressing.



Launch of the Report, “Roadmap of Solar Energy for Universal Energy Access” during the G20’s 4th Energy Transition Working Group (ETWG) Meeting held in Goa in July 2023



Scan to access the Report:

The analytical study presented in the report addresses the critical issue of limited and uneven access to energy, especially in developing regions. It emphasizes that Sub-Saharan Africa and rural areas face the most acute energy access challenges. The report advocates for a combination of electrification approaches, with solar energy at the forefront, focusing on solar mini-grids and DRE solutions to tackle these challenges. Promoting such solutions can also stimulate the emergence of locally developed innovative ideas and business models, which can significantly advance the solarization of a country's energy generation.

SolarX Startup Challenge: Showcasing Potential

To showcase the potential of these solutions, ISA initiated the SolarX Startup Challenge in Africa in 2023. The challenge attracted participants from 10 African countries, including 7 women-led enterprises. The winners were announced at the G20 Meeting held in Goa in July 2023, highlighting the potential for innovative and sustainable solar-based solutions to drive progress towards universal energy access.

Solar Energy: A Sustainable Solution

Traditionally, the approach to electrification has involved extending the electricity grid to reach all regions. However, these projects are often time-consuming, expensive, and frequently face logistical challenges. Consequently, many countries have adopted temporary electrification solutions. Yet, there is now a sustainable alternative on the horizon: solar energy combined with battery storage. This innovative approach is emerging as the most promising solution for electrification due to its technical prowess, financial feasibility, climate-friendly nature, and social benefits.

A multifaceted approach, centred around solar energy, can be deployed to address energy access challenges in various settings:

1. **Grid Extensions:** Cost-effective for densely populated areas within 10-15 kilometers of the existing grid, especially those with commercial and industrial demand. Additional generation capacity for these extensions can be met through market-driven utility-scale or rooftop solar PV projects.
2. **Mini-Grids:** Effective for settlements located farther than 10-15 kilometers from the existing grid, depending on the size and density of the target population. Solar-based mini-grid projects can be funded through a combination of grants, government support, and private sector investments.
3. **Distributed Renewable Energy (DRE) Solutions:** Ideal for addressing electricity access needs in remote, sparsely populated regions where mini-grids and grid extensions are not feasible. DRE solutions may continue to rely on grants for deployment in regions with limited financial capabilities among consumers.

Solar-based mini-grids have the potential to provide both energy access and socio-economic benefits in rural and remote areas. However, their widespread deployment has typically depended on grant support. To achieve scalability and sustainability, it's essential to develop sustainable business models for mini-grids. This endeavour requires private sector participation alongside support from national governments and intergovernmental organizations.

Overcoming Challenges

While the necessary technology solutions for achieving energy access are available, several challenges must be addressed to scale up their deployment sustainably:

1. **Policies and Regulations:** Many countries acknowledge the need for enabling policies to promote energy access, but progress in this area remains slow. As a result, private sector participants and local entrepreneurs are often reluctant to engage in energy access projects. Intergovernmental organizations can assist access-deficit countries in developing policy and regulatory frameworks conducive to such interventions.
2. **Access to Affordable Finance:** Most of the energy access-deficit population resides in underdeveloped regions where electricity remains financially burdensome for consumers. The high financial risks in these regions also increase project costs for developers, exacerbating the gap between consumer affordability and supplier viability. Mitigating these risks and providing concessional financing can attract private sector investments to energy access projects.
3. **Training and Capacity Building:** Key stakeholders in energy access-deficit countries often lack the technical and financial expertise needed to drive electrification initiatives. Skill development programs, access to global best practices, and support for sectoral entrepreneurs are crucial for long-term progress.

The "Roadmap of Solar Energy for Universal Energy Access" report and ISA's collaborative efforts with the G20 Presidency of India underscore the critical role that solar energy can play in achieving electricity access and promoting sustainable energy development. By addressing challenges, promoting policy reforms, fostering private sector engagement, and supporting innovative initiatives like the SolarX Startup Challenge, we can move closer to a future where every individual has access to clean, reliable, and affordable energy.

SPOTLIGHT: SIGNIFICANT INITIATIVES TO BOOST SOLAR DEPLOYMENT

BUILDING RESILIENT GLOBAL SOLAR PV SUPPLY CHAINS REPORT AIMS TO CREATE ROBUST SOLAR MANUFACTURING ECOSYSTEMS WORLDWIDE

In response to the required four to fivefold increase in global solar panel manufacturing capacity by 2030, the International Solar Alliance (ISA) has released a comprehensive report outlining the critical need to establish resilient global solar supply chains. Recent challenges in solar resiliency, including price surges of approximately 50% in 2022 compared to the previous year, underscore the urgency of diversifying the solar manufacturing value chain. This report serves as a catalyst for dialogue among member countries and global stakeholders, fostering collaboration to enhance investment and capacity in solar manufacturing. Its purpose is to guide policymakers, manufacturers, and developers in creating robust solar manufacturing ecosystems worldwide.



ISA's report on "*Building Resilient Global Solar Supply*" was launched in July, 2023 by ORF America's Climate and Energy team at an event co-hosted with the International Solar Alliance (ISA) at the 14th Clean Energy and 8th Mission Innovation Ministerial (CEM-14/ MI-8) in Goa, India.



Scan to access the Report:

Setting Targets

To achieve net-zero targets, the report recommends manufacturing up to 1900 GW per year by 2030, requiring \$150 billion in investments. Specific value chain steps, such as module and inverter assembly, can be developed relatively quickly and inexpensively for low \$5 million as per assembly line. Dr. Ajay Mathur emphasizes the pivotal role of European leadership in driving the transition towards clean energy sources and strengthening supply chains and collaboration in solar photovoltaic manufacturing.

Challenges in the Solar PV Manufacturing Landscape

The global solar PV manufacturing landscape faces substantial obstacles, with concentration raising geopolitical and economic concerns. While local manufacturing can enhance energy independence and reduce logistics costs and emissions, it necessitates significant investments and addressing labor shortages and skill gaps. Comprehensive strategies, encompassing both upstream and downstream measures, are essential, with policies like grants, tax incentives, and infrastructure development unlocking investments. Collaboration for workforce training and research and development supports technological innovation. Specialization and gradual development are advisable for countries with limited capabilities in local PV manufacturing.

Concentration in Manufacturing

China has dominated the solar PV industry across the entire value chain, producing 71% of metallurgical-grade silicon, 79% of polysilicon, and 99% of wafers in 2021. China's share in cell production capacity reached 86% in 2022, with module production comprising approximately 80% of the total production capacity in 2021. This dominance significantly impacts the global solar PV supply chain and market dynamics; in 2021 and 2022, the logistics cost led to solar modules increasing in price, after decades of price reductions.

Supporting Local Manufacturing

Effective support for local solar PV manufacturing involves integrating upstream policy measures within a comprehensive, long-term strategy. Holistic plans that indirectly support the supply chain prove efficient, while short-term bilateral agreements lack sustainability. Direct support for upstream actors, including financial incentives like tax exemptions, low-cost financing, or subsidies, is essential. These upstream investments must be accompanied by stimulating downstream demand.

Growth Scenarios

The global solar PV market is poised for substantial growth, with a cumulative increase projected to be at least threefold between

the present day and 2030. Achieving the ambitious scenarios outlined in the report will require widespread public and political support. However, substantial investments and co-operation can create a diversified scenario, as outlined in the report. Geographically, Asian nations are expected to maintain or expand their share of annual world production.

Resource Challenges and Emerging Technologies

Increasing demand for solar PV requires a significant increase in quartz extraction and metal-grade polysilicon production, leading to competition and potential shortages. Established actors have opportunities to capitalize on growth, but emerging technologies like TOPCon, HJT and Pervoskite/tandem cells offer avenues for new entrants. Solar cell assembly into modules is a relatively accessible entry point in the c-Si solar PV value chain, particularly for developing markets with limited access to capital.

Establishment Profiles

Regions considering local PV manufacturing should consider different profiles, ranging from "Bootstrapper" to "Market Leader," each requiring different strategies and support. Addressing equipment and financing challenges, diversifying equipment suppliers, and investing in local expertise are essential steps.

The rapid growth of the solar manufacturing sector demands a well-trained workforce and substantial investments, which are attainable compared to fossil fuel industries' capital investments. Diversifying the supply chain across regions can help distribute these investments more evenly, ensuring a resilient and sustainable global solar PV manufacturing ecosystem.

SPOTLIGHT: SIGNIFICANT INITIATIVES TO BOOST SOLAR DEPLOYMENT

GREEN HYDROGEN INNOVATION CENTRE PAVES THE WAY FOR SUSTAINABLE ENERGY REVOLUTION

ISA's Green Hydrogen Innovation Centre is driving the green hydrogen revolution in response to climate action urgency, hard-to-abate emissions, and geopolitical gas supply uncertainties. The global shift toward green hydrogen is evident, with over 17 governments unveiling strategies and more planning to follow suit. Scaling renewable energy, especially on gigawatt and terawatt levels, requires efficient energy storage. Hydrogen, a clean, scalable, and versatile option, can store renewable electricity. Green hydrogen is expected to decarbonize industries and transport.

While global hydrogen demand surpassed 94 million metric tonnes in 2021, over 95% came from grey hydrogen (fossil fuels). However, green hydrogen, though currently pricier, is gaining ground. In a Net Zero scenario, green hydrogen demand may reach 180 Mt by 2030. Many countries are implementing strategies, policies, and initiatives to meet Net Zero commitments.

The G20 region, known for mature renewable energy markets, is ideal for green hydrogen investments. The International Solar Alliance (ISA) is fostering green hydrogen through its **"Solar for Green Hydrogen"** program, proposing a virtual **Green**

Hydrogen Innovation Centre (GHIC) under the G20 India Presidency. The Green Hydrogen Innovation Centre is an initiative of the International Solar Alliance under the instruction of the G20 India Presidency. The ISA acknowledges the support of the Asian Development Bank in developing this Knowledge Platform. The GHIC aims to support green hydrogen production, trade, and knowledge sharing.

Home Knowledge Center Global Startup Program GHIC Initiatives Skill Development Events Country Insights Financing



Launch of Hydrogen Missions & Initiatives by Government



Hon. Prime Minister of India Mr. Narendra Modi speaks on the vision and mission of low-carbon hydrogen



G20 Sherpas share thoughts on low-carbon hydrogen for 2023



Power Minister shares India's Strategy on the Green Energy Drive



Dr. Ajay Mathur speaks on Green Hydrogen

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Scan to visit the GHIC Portal:



Knowledge Dissemination

GHIC to serve as a **one-stop knowledge repository** on various topics of Green Hydrogen like:

- Global projects
- Case Studies
- Reports
- Research publications



Best Practices & Learnings

- Access country policies, regulations, standards and code through the portal
- Outreach to stakeholders
- **Portal to provide country-level insights** for green hydrogen along with potential and demand of the green hydrogen



Network and Partners

- GHIC will aid developers in providing **details about OEMs for Electrolyzers, Fuel Cells, Storage providers**, and their products, along with **EPC/system integrators**, and later identifying possible **financing partners**

Unique Features of Green Hydrogen Innovation Centre:

- **Country Insights:** This feature provides updates on country-level announcements, missions, and targets related to green hydrogen.
- **Skill Development:** Certified e-learning courses, podcasts, and expert interviews enhance knowledge and skill development within the green hydrogen sector.
- **Global Start-up Program:** The platform connects green hydrogen start-ups with investors, accelerating investments and promoting entrepreneurship in the green hydrogen space.
- **GH Community:** A live interactive platform fosters global collaboration and engagement within the green hydrogen community.
- **Live Chatbot:** An AI and ML-supported chatbot offers quick support and addresses user queries efficiently.

The portal's operation, maintenance, and monitoring follow structured SOPs, with a steering committee comprising international experts.

In conclusion, the Green Hydrogen Innovation Centre is poised to operate across ISA and G20 member countries and beyond, facilitating green hydrogen production, utilization, trade, knowledge sharing, and competency building within the green hydrogen value chain. Countries, organisations, and individuals interested in green hydrogen can register on the GHIC website to gain access to additional features, including weekly global updates delivered to their registered email every. This initiative holds the potential to play a pivotal role in accelerating the transition to sustainable energy, benefiting stakeholders across industries, academia, and the global hydrogen community.

SNAPSHOTS

FIFTH MEETING OF THE ISA REGIONAL COMMITTEE FOR THE AFRICA REGION

The International Solar Alliance (ISA) marked a significant milestone as it hosted its 5th regional meeting in Kigali, Rwanda. The event, supported by the Government of Rwanda, saw participation from more than 35 countries and Ministers from 13 nations. The gathering served as a platform to discuss the transformative potential of solar energy in Africa and celebrate key initiatives aimed at universalizing energy access across the continent.

The highlight of the event was the announcement of three demonstration projects in the Republic of Uganda, the Union of Comoros, and the Republic of Mali. These projects represent not only a source of clean energy but also symbols of global cooperation and progress. Mr. R K Singh, Minister of Power & New and Renewable Energy, Government of India, and President of ISA Assembly, dedicated these projects to the respective countries, underscoring their significance in advancing the well-being of underserved communities.

Mr. Sidronius Okaasai Opolot, Minister of State for Energy, Ministry of Energy and Mineral Development, Republic of Uganda, expressed his gratitude, saying, "Many challenges exist in bringing energy access to hard-to-reach areas. Solar is extremely important to improve the lives and livelihoods of rural poor. Through solarisation, we are looking at providing adequate power to improve Uganda's rural communities. We hope to improve healthcare, education, and the economy through solar. I thank ISA for their intervention in bringing this scalable solution."

Through ISA grants, several rural healthcare centres and primary schools were solarised in Uganda, Comoros, and Mali. These projects, with battery storage systems, are vital in ensuring uninterrupted access to electricity in remote areas.

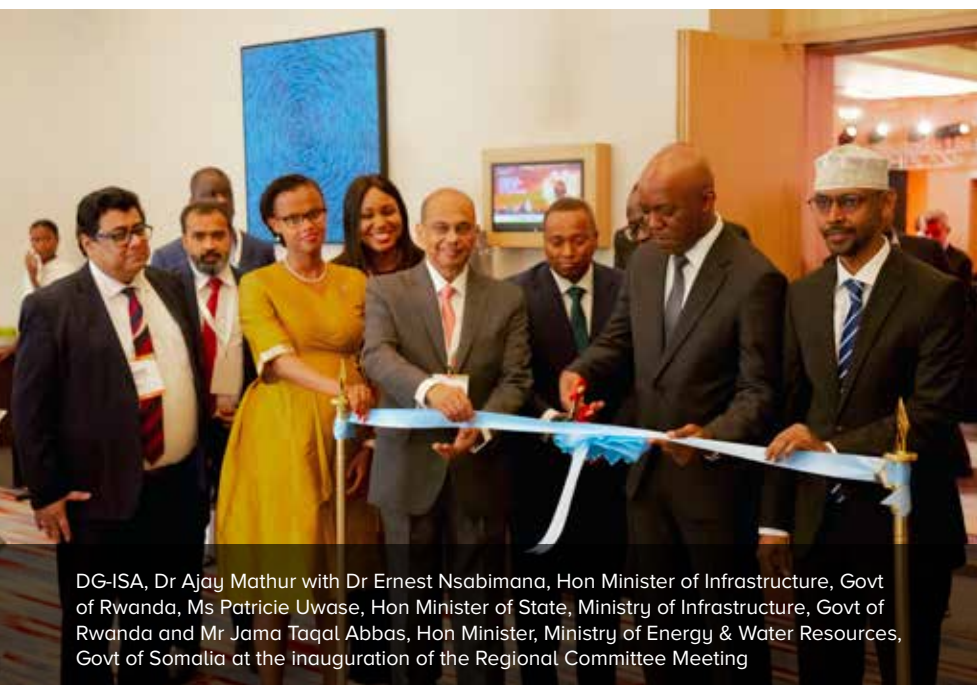
The meeting's discussions underscored the growing prominence of solar energy in Africa as a solution to energy challenges and sustainable development. Africa's abundant sunlight positions it as a prime candidate for solar power generation, with initiatives already underway to harness this potential.

Dr Ajay Mathur, DG - ISA, emphasised the need for collaboration among governments, private sector entities, and international organizations to unlock the full potential of solar energy in Africa. He highlighted ISA's advocacy for cost-effective decentralized solutions, including mini-grids, to swiftly address areas lacking grid infrastructure.

One of ISA's notable initiatives, the SolarX Startup Challenge, took centre stage during the event. This



Hon'ble dignitaries at the Fifth Meeting of the ISA Regional Committee for the Africa Region at Kigali, Rawanda.



DG-ISA, Dr Ajay Mathur with Dr Ernest Nsabimana, Hon Minister of Infrastructure, Govt of Rwanda, Ms Patrice Uwase, Hon Minister of State, Ministry of Infrastructure, Govt of Rwanda and Mr Jama Taqal Abbas, Hon Minister, Ministry of Energy & Water Resources, Govt of Somalia at the inauguration of the Regional Committee Meeting



Winners of the SolarX Startup Challenge from Tanzania

exclusive challenge sought to promote entrepreneurship and clean energy solutions in African ISA Member Countries. After a rigorous selection process, 20 companies from 10 African nations emerged as winners, with seven of them led by women entrepreneurs. This initiative showcases the innovation and local solutions emerging from Africa to address energy challenges.

The meeting also provided updates on other ISA's key initiatives, including STAR-C and the Global Solar Facility. These interventions aim to build capacity, foster innovation, and attract investment in the solar sector to meet specific indigenous needs.

Among these initiatives, the Global Solar Facility stands out for its potential to boost innovative solar technologies through private investment in Africa. This ground breaking initiative introduces a comprehensive approach combining payment guarantees, insurance, and investment funds, attracting diverse global donors to support solar projects across the continent.

Furthermore, the event unveiled a report on the "Roadmap

of Solar Energy for Universal Energy Access", a collaborative effort between ISA and India's Ministry of Power & New and Renewable Energy. This roadmap charts a strategic vision for leveraging solar-driven solutions, particularly mini-grids, to address the global energy access challenge effectively and economically.

In conclusion, the 5th regional meeting of the International Solar Alliance in Kigali signifies Africa's commitment to harnessing the power of the sun for sustainable development. With initiatives like SolarX, the Global Solar Facility, and the Solar Energy Roadmap, the ISA is lighting the way toward a brighter, more sustainable future for all of Africa.



Hon Okaasai Opolot, Minister of State for Energy, Uganda along with other Ministers of Energy from Africa launched a guidance document: "Solar for All- Boosting Solar Investments in LDCs and SIDS" at the Regional Committee Meeting

SNAPSHOT

FIFTH MEETING OF THE ISA REGIONAL COMMITTEE FOR LATIN AMERICA AND THE CARIBBEAN: PAVING THE WAY FOR ENHANCED REGIONAL COLLABORATION AND ENGAGEMENT IN THE PURSUIT OF A SOLAR-POWERED FUTURE

The Fifth Meeting of the International Solar Alliance (ISA) Regional Committee for Latin America and the Caribbean Region was convened virtually, marking a significant step towards realising the region’s solar energy potential. Chaired by HE Ms Tania Masea, Vice Minister for New Sources of the Ministry of People’s Power for Energy of the Bolivarian Republic of Venezuela, this meeting brought together 20 ISA Member Countries, 6 ISA Signatory Countries, 7 Prospective Member Countries from Latin America and the Caribbean Region, as well as representatives from ISA partner organisations and special invitees.



HE Ms Tania Masea, Vice Minister for New Sources of the Ministry of People’s Power for Energy of the Bolivarian Republic of Venezuela, addressing the Regional Committee Meeting

The primary objective of this gathering was to translate ambitious solar energy goals into concrete actions while addressing regional challenges that impact the adoption of solar power. The event served as a platform for member countries to discuss and collaborate on ISA support Programmes aimed at accelerating the deployment of solar energy solutions.

Key Discussion Points

ISA Support Programmes: A central focus of the meeting was the discussion on ISA’s support Programmes designed to expedite the adoption and implementation of solar energy solutions. These Programmes play a pivotal role in building capacity, fostering innovation, and attracting investments in the solar sector.

Flagship Initiatives: The meeting also highlighted the progress and impact of ISA flagship initiatives such as STAR-C, the SolarX Startup Challenge, and the Solar Finance Facility. These initiatives are instrumental in advancing the goals of the International Solar Alliance by facilitating capacity building, innovation, and investment in the solar sector.

Regional Solar Growth: HE Ms Tania Masea emphasized the region’s commitment to solar energy adoption, with approximately 250 projects



planned in the coming years, boasting a combined capacity of nearly 19GW. Brazil, Mexico, Colombia, Chile, and Peru were recognized as leaders in solar energy adoption, contributing over 88% of the installed solar capacity and 97% of planned expansions. Additionally, around 15 countries in Latin America and the Caribbean are steadfastly committed to meeting 70% of their energy demands through renewable energy by 2030.

Collaboration for a Greener Future: HE Ms Tania Masea called on honourable ministers and dignitaries to actively engage with the ISA Secretariat in working towards a greener economy. She also proposed exploring the possibility of extending discounts on solar pumps to Latin America, emphasizing the potential benefits of collective bargaining.

ISA's Five-Year Strategic Plan (2021-2026)

The meeting delved into ISA's Five-Year Strategic Plan, approved during the fifth session of the ISA Assembly. This strategic blueprint outlines the roadmap for achieving the goals set forth in the ISA Framework Agreement. It addresses the diverse needs of member countries, including capacity-building Programmes, analytics, advocacy support, investment mobilization, and technological advancements. ISA aims to secure USD 1 billion over 5 years to realize these objectives. The ISA Secretariat provided an overview of the progress made under the plan and outlined upcoming activities.

Future Energy Transition Challenges and Opportunities

Dr Ajay Mathur, DG, ISA, stressed the immense challenges and opportunities in the energy transition within the Latin America and the Caribbean Region. He highlighted the need for significant investments in infrastructure and technology, especially efficient energy storage solutions to ensure a

stable and reliable energy supply. He also emphasised the importance of collaboration and knowledge sharing to overcome these challenges, promote innovative financing mechanisms, and strengthen capacity building efforts.

Commitment to Climate Change Mitigation

Hon. Deodat Indar, Minister within the Ministry of Public Works of Guyana, expressed his country's support for ISA and its initiatives. Guyana, having recently held the Latin America and Caribbean Vice Presidency, is committed to the SolarX Startup Challenge and projects that reduce greenhouse gas emissions. Minister Indar cited the benefits of ISA's support to Guyana and expressed eagerness for further collaboration as the nation undergoes a transformative journey in the energy sector.

The Fifth Meeting of the ISA Regional Committee for Latin America and the Caribbean serves as a testament to the region's dedication to a solar-powered future. With collaboration, innovation, and investment, these countries are poised to lead the way in renewable energy adoption, contributing significantly to mitigating climate change and shaping a sustainable energy landscape for generations to come.

SNAPSHOT

HIGHLIGHTS FROM NEW YORK CLIMATE WEEK 2023

This year, Climate Week NYC was held from September 17 to September 24, 2023. The event takes place annually in partnership with the United Nations General Assembly and is coordinated with the United Nations and the City of New York.

The “3xRenewables by 2030” Campaign

As part of Climate Week NYC, on September 18th, the “3xRenewables by 2030” campaign was launched, marking a significant moment during New York Climate Week and the High-Level Week of the UN General Assembly. This high-level event served as a visible set-piece to kickstart New York Climate Week and the High-Level Week of the UN General Assembly. The event brought together the private sector, civil society, and climate diplomats to issue a unified call to world leaders to commit to a target at COP28 this year to triple global renewable energy capacity to at least 11,000 GW by 2030.

Speaking at the launch, Mr. Shishir Seth, Chief of Governance & Partnerships at the International Solar Alliance (ISA), stated

that solar power, as a universal energy source, is key to our sustainable future and the ISA plays a critical role in unlocking solar potential worldwide. Strong government policies are needed as the foundation for our ambitious vision. Financial resources, approximately \$5.3 trillion USD annually until 2050, are required, offering environmental, economic, and social benefits. He also stated that developing countries, especially in Africa, can lead this effort.



“

We need to work together so we can deliver on the critical ambition to triple solar and other renewables by 2030.

– Mr. Shishir Seth

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Empowering People with Solar PV

During Climate Week NYC, the International Solar Alliance (ISA) also joined forces with the Global Solar Council, the European Union (EU) in India, and the Global Renewables Alliance (GRA) to host a ground breaking session on “Empowering People with Solar PV.” This event aimed to shed light on the transformative potential of distributed solar Photovoltaic Technology (PV), discuss existing challenges, and explore collaborative solutions.

The high-profile event brought together a diverse array of

stakeholders, including policymakers, industry leaders, activists, and community representatives. Their collective goal was to explore the tangible impacts of existing distributed solar PV projects and devise strategies to scale up deployment. The event served as a crucial platform for galvanising efforts to ignite a distributed solar revolution.

Keynote Addresses

The session featured keynotes from influential figures in the energy and environmental sectors. Ms. Ditte Juul Jorgensen, Director-General of Energy for Europe, delivered a keynote address. She emphasised the importance of collaboration with ISA to make substantial investments in solar deployment while simultaneously dismantling global barriers to entry. Her remarks resonated with the audience, highlighting the urgent need for coordinated efforts in the renewable energy sphere.



Ms. Ditte Juul Jorgensen, Director-General of Energy for Europe, delivering the keynote address



Mr. Shishir Seth, Chief of Governance & Partnerships at ISA, delivering the opening remarks

Mr. Shishir Seth, Chief of Governance & Partnerships at ISA, delivered the opening remarks. He underscored the imperative of collective action to address energy inequality through solar solutions. Recognising the pressing need to combat disparities in energy access, Mr. Seth's remarks set the tone for the event and reinforced the ISA's commitment to driving solar adoption worldwide.

Mr. Seth stated that the ISA plays a crucial role in addressing climate change, sustainable development, and energy access challenges by harnessing solar PV technology. This technology offers clean energy, economic growth, and community empowerment. As an intergovernmental organisation, ISA unites solar-rich countries to promote solar energy deployment,

eradicate energy poverty, and create a greener, more equitable future.

The session explored solar PV adoption, emphasising socio-economic benefits, environmental impact, and policy frameworks. Following the discussions, attendees were offered exclusive guided tours of the Javits Centre's rooftop solar installation, further illustrating the practical application of distributed solar PV.

ISA INTERVENTIONS

COUNTRY MISSION TO BHUTAN: STRENGTHENS COMMITMENT TO CLEAN ENERGY



The International Solar Alliance (ISA) recently concluded a successful Technical Mission to the Kingdom of Bhutan, further cementing Bhutan's dedication to clean energy and sustainable development. This mission, which took place from August 21 to August 24, 2023, aimed to raise awareness about ISA's initiatives and identify potential projects that align with Bhutan's clean energy priorities.

The mission achieved its primary objectives which were:

Generating Awareness: ISA successfully engaged with various stakeholders in Bhutan, introducing them to ISA's programmatic support and the Asian Development Bank (ADB) Knowledge and Support Technical Assistance (KSTA). This included not only government officials but also private sector stakeholders and multilateral organizations.

Identifying Collaboration Opportunities: Through fruitful discussions, the mission identified promising areas for collaboration in policy and regulatory frameworks, private sector engagement, and programmatic priorities for scaling up solar energy projects in Bhutan.

Programmatic Priorities: Key priorities for Bhutan's clean energy transition were discussed extensively during the mission.

These priorities include solarisation of remote health facilities, solar mini-grids, solar pumps for agriculture and drinking water, solar cooling and heating solutions, and large-scale grid-connected solar PV projects.

Setting up the STAR Centre: The existing infrastructure for the Solar Technology Application Resources Centre (STAR C) in Bhutan was assessed, and discussions on the draft Memorandum of Understanding (MoU) and host institution identification took place.

ISA-French Government-UNIDO Work Plan: The ISA-French Government-UNIDO work plan was



Participants at the National Stakeholder Workshop, organised as part of the ISA's technical mission to Bhutan



Indian Ambassador to Bhutan, Hon Sudhakar Dalela met the ISA delegation and discussed ISA's programs for scaling up solar energy solutions

presented and discussed, with a framework for qualification and certification outlined.

Investment Needs and Barriers: The mission explored investment needs and barriers in Bhutan, with a focus on unlocking private capital and options for risk mitigation.

Country Partnership Agreement (CPA): Discussions were held on the signing of the Country Partnership Agreement (CPA) and the development of a partnership strategy for collaboration under various programs in Bhutan.

A Stepping Stone to Clean Energy

The Technical Mission served as a pivotal moment in Bhutan's commitment to clean energy. By identifying potential projects and solidifying partnerships, Bhutan is poised to accelerate its clean energy transition with the support of ISA and other international partners. The collaboration between Bhutan and ISA represents a powerful alliance dedicated to combating climate change and promoting sustainable development in the Himalayas.

The mission's outcomes will contribute significantly to Bhutan's continued success in clean energy adoption. As Bhutan stands as a beacon of hope for climate action and sustainability, the partnership with ISA is set to further elevate its position as a global leader in clean energy solutions.

In conclusion, ISA's Technical Mission to Bhutan has not only achieved its objectives but has also strengthened the bond between Bhutan and the international community in the quest for a cleaner and more sustainable world. This mission serves as a testament to Bhutan's commitment and determination to combat climate change and promote clean energy solutions.

ISA INTERVENTIONS

SOLARX STARUP CHALLENGE – AFRICA EDITION MEET THE WINNERS

In collaboration with Invest India, International Solar Alliance (ISA) launched the first edition of the SolarX Startup Challenge at COP27 on 10 November 2022 at Sharm-el-Sheikh, Egypt, to boost entrepreneurship and startups in the solar energy sector. The first edition of the initiative was initiated for the Africa Region to help address significant energy and investment gaps.

The SolarX Startup Challenge seeks innovative, cost-effective, and scalable local solutions to persistent challenges of the solar sectors in 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.



UGANDA

MUSANA CARTS UGANDA LIMITED

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.



ETHIOPIA

HELLOSOLAR TECHNOLOGY PLC

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 6 different product types ranging from small to larger solar home systems as well as solar water pumps.



KENYA

KUZA COOLERS LIMITED

Kuza Coolers Limited is a start-up 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.



ECOBORA



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.

KENYA



CENTENNIAL POWER LTD



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.

RWANDA



INNO-NEAT ENERGY SOLUTIONSV



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.

UGANDA



URBAN GREENS LTD



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.

UGANDA



STES GROUP LTD



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.

RWANDA



GREEN SCENE ENERGY PLC



ETHIOPIA

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.

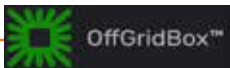


SALPHA ENERGY LTD



NIGERIA

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.



OFFGRIDBOX RWANDA LTD



RWANDA

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.



BAKO MOTORS



TUNISIA

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.



KENYA

ARINIFU TECHNOLOGIES LTD

Arinifu Technologies Limited is a Kenyan start-up 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.



SOUTH AFRICA

MOMINT

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.



EGYPT

NOORNATION

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.



NIGERIA

ASACCOV GLOBAL NIGERIA LIMITED (A6GNL)

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.



TANZANIA

PHOTONS ENERGY LIMITED

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.



NORTHLITE SOLAR LIMITED



GHANA

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.



UWANA ENERGY



NIGERIA

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 financier of an energy system to the supplier. They all benefit from our one-stop platform that accelerates clean energy.



EG PLATFORM LTD. (ENERGROW)



UGANDA

EG Platform Limited operating under the brand name Energrow, is a Ugandan-based tech start-up 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.

ISA INTERVENTIONS

DELEGATION VISIT OF THE ARAB LEAGUE & EL SALVADOR TO THE ISA SECRETARIAT

ISA hosted diplomats from El Salvador and Arab League at the ISA headquarters. They were briefed on ISA's activities and ongoing projects. Further steps to strengthen partnership in accelerating solar deployment were also discussed.



Diplomats from the Arab League at the ISA headquarters



Diplomats from El Salvador at the ISA headquarters

ISA INTERVENTIONS

ISA RETREAT

The ISA Retreat was organised from 17-18th August 2023, at the Best Western Resort Country Club in Gurgaon. This retreat served as an occasion where all units converged to exchange insights, provide updates, and strengthen collaboration. The event was made even more memorable with a series of engaging team-building activities and presentations, fostering bonds and promoting teamwork.



#IDEASTHATHAVEWORKED: SOLAR IMPACT STORIES FROM AROUND THE GLOBE

USING SOLAR TO COMBAT NOISE POLLUTION

Of the many applications of solar energy, solar noise barriers are little talked about. Photovoltaic noise barriers, also known as PVNBs were introduced in Switzerland as early as 1989 and have since been scaled up for pilot projects in the EU.

The World Health Organization (WHO) has recognised traffic noise as an important contributor to noise pollution which causes discomfort and leaves a significant negative impact on the health of those living in the vicinity of noisy thoroughfares. Photovoltaic noise barriers (PVNBs) were often prescribed as a solution to this issue.

Such barriers involve the combination of noise minimization technology and clean energy generation. PVNBs, as an integrative concept, were introduced in Switzerland in 1989 and have since been successfully adopted by other countries. Such barriers are designed to stand upright, lower noise reaching surrounding areas and to shield immediate residents from noise pollution generated by road or rail traffic, while also producing energy from solar PV systems.

The structure consists of a noise barrier system combined with photovoltaic (PV) panels. The photovoltaic modules are integrated into the barriers as support elements within the soundproofing/sound-absorbing panels. The barriers are also equipped with acoustic dampers, thereby reducing noise from all directions. The photovoltaic cells use the acoustic foam as insulators, which allow for more efficient collection of solar energy. In order to guarantee optimal performance, the design of the photovoltaic noise barriers (PVNBs) was required to consider elements such as materials, location of the barriers, local climatic conditions, orientation, the amount of solar

radiation, dimensions, and the azimuth of the barrier.

The performance of the photovoltaic panels within the noise barrier largely depended on factors such as orientation and tilt (inclination), the amount of dust accumulated and implementation of maintenance protocols, shading and climatic conditions. In recent times, the constraints on orientation had been overcome using bifacial PV technology which offered greater flexibility in deployment.

In addition, PVNBs also provided an easy option for installation without demanding additional land use in densely crowded areas, while enabling decentralised clean power generation, reduced costs of energy transmission and emission reduction of CO₂ and other pollutants. Since, vehicular traffic was also likely to affect the natural views and the visual quality of an area, these environmental noise barriers offered solutions to such issues.



#IDEASTHATHAVEWORKED: SOLAR IMPACT STORIES FROM AROUND THE GLOBE

FLOATING PV FOR WATER PUMPING AND DESALINATION AT IRRIGATION COMMUNITY

With limited access to clean drinking water in rural Tanzania, poor health conditions and use of polluting wood fuel were on the rise. The use of Solar wave water purifier made by the Swedish Company, Tricorona helped address this issue using solar technology.



Comunidad de Regantes de Aguilas, an irrigation community in Murcia, in southern Spain, has built and commissioned a 786.0 kW floating solar array, which is designed to power the community alongside supplying energy to a solar water pumping system and a water desalination unit. A total of 1,728 solar PV modules of nominal power rating of 455 Wp each are deployed as a part of the system ¹. The PV installation is directly attached to the slopes of the pond on aluminium profile supports. In addition to the floating PV installation, modules are installed on the raw water storage bays, rack hall and the transformation centre increasing the total installed PV to 1,264.50kWp, generating an estimated 2,056 MWh annually. The power generated from floating Solar PV modules is to feed into two 600 hp lift pumps each and two 340 kW racks of reverse osmosis desalination plant ².

The community's overall energy initiative, including solar installations, aims to reduce 1,440 tons of CO₂ annually and is projected to yield estimated annual cost savings of Euro 193,000. The total investment of Euro 1,172,000, which includes the floating PV installation and supporting infrastructure, is co-financed by the European Agricultural Fund for Rural Development and the Ministry of Agriculture ³.

After this add this para - Floating Solar PV projects, offer a promising solution for energy generation and environmental conservation. The International Solar Alliance (ISA) recognises the potential of FSPV and aims to create a 24x7 grid-connected energy solution by combining various viable energy resources. Floating solar has numerous advantages, including increased overall efficiency due to lower panel temperatures and reduced water evaporation. It also addresses land scarcity issues and promotes environmental sustainability with minimal water contamination and improved water quality. Moreover, FSPV complements hydropower, optimising energy production throughout the day and night while utilising existing electrical infrastructure.

In collaboration with organisations like NTPC and Rural Power Company Ltd (RPCL) in Bangladesh, ISA is actively exploring the implementation of a 5.0 Megawatt Floating Solar PV Power plant in Gazaria, utilizing a 25-acre riverbank protection area. Preliminary site assessments are ongoing, and the project is set to receive support from the Asian Development Bank (ADB). ISA's efforts in Bangladesh include scoping studies for further floating solar PV projects, demonstrating a commitment to sustainable energy solutions and regional development.

¹ XHF Solar (2022) "Floating PV for water pumping & desalination". Company announcement, https://www.xhfsolar.com/floating-pv-for-water-pumping-desalination_n81, last accessed 21 December 2022.

² Aguilas Irrigation Community (2022) "La energía que produce la planta le ayudará a reducir los costes energéticos de su bombeo [The energy produced by the plant will help you reduce the energy costs of your pumping]", <https://regantesaguilas.coresat.es/www/>, Last accessed 20 December, 2022.

³ AGROEX (2022) "The Águilas Irrigation Community improves its energy efficiency". <https://www.laopiniondemurcia.es/comunidad/2022/07/09/comunidad-regantes-aguilas-mejora-eficiencia-68135716.html>, last accessed 21 December 2022

ISA IN NEWS

August - September 2023

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Alianza para aumentar el despliegue de la energía solar en los aeropuertos de todo el mundo

[Solar Info](#)

Aug 14



Here's how solar can help triple renewable energy by 2030

[World Economic Forum](#)

Aug 24



5.2m Solar Kits Sold Globally In 2nd Half Of 2022: ISA Tells SAFDE

[Saur Energy](#)

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Director General of Int'l Solar Alliance terms Madhya Pradesh as a leader in solar energy

[ANI](#)

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India's renewable energy ambitions could exceed 500 GW, says ISA DG Ajay Mathur

[Moneycontrol](#)

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India's renewable energy ambitions could exceed 500 GW, says ISA DG Ajay Mathur

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India's Transition to Renewable Energy Won't Result in Job Losses, Says International Solar Alliance

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La transición fuera del carbón en India puede lograrse sin pérdidas significativas de empleo

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Solar energy, a solution for Africa

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ISA, Government of Rwanda commit to promote affordable solar energy as universal right

[The Inspirer](#)

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Rwanda rwifuza kuba ku isonga mu bakoresha amashanyarazi akomoka ku izuba

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Solar energy presents huge potential to connect more Africans to electricity – Minister Uwase

[The New Times](#)

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Universalising energy access through solar

[The New Times](#)

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Universalising energy access through solar

[Igihe](#)

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I Kigali hari kwigirwa uko Afurika yava mu mwijima hifashishijwe ingufu z'imirasire y'izuba

[Igihe](#)

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Access to electricity, a universal human right – reminds the International Solar Alliance

[KT Press](#)

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TV news about ISA's 5th regional committee meeting in Africa

[Radio & TV 10](#)

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TV news about ISA's 5th regional committee meeting in Africa

[RBA](#)

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Abakoresha ingufu zikomoka ku mirasire y'izuba barasaba ko igicro cyabyo kigabanuka

[Ubumwe](#)

Sep 2



U Rwanda ruzungukira mu kigega kigamije guteza imbere ingufu ziva ku zuba

[Umuseke](#)

SIXTH SESSION OF THE INTERNATIONAL SOLAR ALLIANCE ASSEMBLY

30 OCTOBER – 2 NOVEMBER 2023

The Sixth Assembly of the International Solar Alliance will be held on 31st October and will be presided over by Mr R.K. Singh, Hon'ble Minister for Power, New and Renewable Energy, Government of India and the President of the ISA Assembly. Ministers, missions and delegates from 116 Member & Signatory Countries will participate along with prospective countries, partner organisations, private sector and other stakeholders.

A High-level Conference on New Technologies for Clean Energy Transition in collaboration with the Ministry of New & Renewable Energy, the Government of India, the Asian Development Bank, and the International Solar Energy Society will be held on November 1, 2023, on the side lines of the Assembly.

