

EASING SOLAR DEPLOYMENT GLOBALLY

NEWSLETTER

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FROM DIRECTOR GENERAL'S DESK



I am delighted to share with you ISA's significant progress and achievements in advancing not only solar energy initiatives but also the transformative potential of green hydrogen across our Member Countries. Our collective efforts continue to pave the way for a brighter, greener future for communities worldwide. From Bhutan to Malawi, and Uganda to India, our collaborations are yielding tangible results, empowering nations to harness the potential of both solar energy and green hydrogen for sustainable development.

In Bhutan, our partnership has seen remarkable strides with the signing of the Country Partnership Agreement (CPA) and MoU for the establishment of the Solar Technology Application Resources Centre (STAR-C). These initiatives underscore our commitment to enhancing energy access, ensuring security, and fostering innovation in solar energy solutions. Additionally, Bhutan's active engagement in green hydrogen initiatives further exemplifies its dedication to embracing renewable energy solutions.

Similarly, in Malawi, the commissioning of the solar backup system at the Parliament Building represents a significant milestone in our efforts to provide reliable and sustainable energy solutions. This project not only addresses the immediate need for power but also contributes to climate change mitigation and promotes environmental sustainability. As we celebrate this achievement, we also recognise the potential for integrating green hydrogen solutions to further enhance energy resilience and sustainability in Malawi. Our recent Technical Mission to Uganda has laid the groundwork for transformative change, with a focus on enhancing solar energy development and fostering partnerships across various sectors.

Our recent workshop on agrivoltaics showcased the increasing interest and momentum surrounding the integration of solar energy and agriculture. Despite challenges such as regulatory barriers and upfront investment costs, agrivoltaics hold immense promise in enhancing food security, promoting renewable transition, and mitigating climate change. Furthermore, the ISA-INAE seminar on green hydrogen served as a platform for global experts, policymakers, and industry leaders to explore the potential of this transformative energy source. By highlighting the critical role of collaboration, policy frameworks, and driving down costs, the seminar underscored the immense potential of green hydrogen in realising our shared vision of a sustainable energy future.

As we continue to explore innovative solutions, green hydrogen emerges as a complementary avenue for advancing sustainability across diverse sectors. In line with our commitment to driving innovation and collaboration, ISA has initiated several new initiatives to accelerate the adoption of green hydrogen. These include:

- Launching the Solar for Green Hydrogen programme during our Fourth Assembly in October 2021, aiming to accelerate solar-based hydrogen production, utilization, and trade among ISA Member Countries.
- Conducting road mapping studies in select African countries to assess the potential for green hydrogen production through solar and offshore wind energy generators, with funding support from various partners.
- Establishing the Green Hydrogen Innovation Centre (GHIC) in partnership with the Asian Development Bank (ADB), providing a platform for knowledge

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sharing, capacity building, and collaboration across ISA and G20 member countries.

In addition to these accomplishments, I am happy to announce that ISA will be hosting an International Solar Festival in August 2024. This festival will be a significant step towards advancing the global adoption of solar power, providing a platform to showcase innovations, foster collaboration, and mobilise resources. As solar energy emerges as a pivotal solution to combat climate change and promote sustainable development, the festival will celebrate and amplify its potential as a sustainable and accessible power source.

As we reflect on these achievements, I extend my sincere gratitude to all stakeholders and partners for their support and contributions. Together, we are driving the solar revolution and unlocking new opportunities for sustainable development.



Ajay Mathur

Director General, International Solar Alliance

HIGHLIGHT

INTERNATIONAL SOLAR ALLIANCE TO HELP BOOST BHUTAN'S SOLAR INITIATIVES

Continuing the momentum of collaboration between the International Solar Alliance (ISA) and the Royal Government of Bhutan, a high-level delegation from ISA, New Delhi, led by its Director-General, Dr Ajay Mathur, visited Bhutan to solidify solar energy initiatives. The visit culminated in the signing of the Country Partnership Agreement (CPA) between the Department of Energy (DoE) of the Ministry of Energy and Natural Resources (MoENR) of the Royal Government of Bhutan (RGoB) and ISA.



Dr Ajay Mathur, DG - ISA, with the Hon'ble Prime Minister of Bhutan, H.E. Lyonchen Tshering Tobgay

Meeting with the Hon'ble Prime Minister of Bhutan, H.E. Lyonchen Tshering Tobgay

Dr Ajay Mathur, Director General of the International Solar Alliance (ISA), called on the Honorable Prime Minister of Bhutan, His Excellency Lyonchen Tshering Tobgay. During this meeting, Dr Mathur provided a comprehensive update to the Prime Minister regarding the outcomes of discussions held with various ministries. He emphasised the importance of signing the Country Partnership Agreement (CPA) to bolster cooperation and accelerate solar deployment initiatives within Bhutan. Hon'ble Prime Minister acknowledged that while hydropower is the primary source of energy in Bhutan for now, renewable energy sources

such as solar would become critical in the coming years. Furthermore, the Prime Minister commended ISA for their efforts towards advancing solar energy in Bhutan and extended his gratitude to Government of India (GoI) for their continued generous support to Bhutan's hydro energy sector.

The CPA is designed to facilitate the development of a robust solar roadmap, establish a pipeline of financially viable solar projects, and attract investments crucial for advancing Bhutan's solar

energy sector. Additionally, plans were presented for establishing a Solar Technology Application Resources Centre (STAR-C). This centre aims to bolster capacity building across the solar value chain, foster skill development, and create meaningful employment opportunities within Bhutan's solar industry.

The signing of the Country Partnership Agreement and Round Table Discussion

The CPA was signed by Mr Karma Tshering, Secretary, MoENR and Dr Ajay Mathur, Director General, ISA, on 15 April 2024 in the presence of the Minister for Energy and Natural Resources, HE Lyonpo Gem Tshering and other senior officials from RGoB and ISA.

Through this CPA, ISA will collaborate with the Department of Energy (DoE) - the focal department under the MoENR, to further implement programmes and projects to enhance energy access and ensure energy security through solar energy interventions and diversification of energy portfolio in the country.

Underlining the significance of the CPA signing, Dr Ajay Mathur, DG-ISA, stated, "I am delighted to see the progress our partnership has made. This signing will further bolster our actions and facilitate the attainment of our goals. I commend the dedication of Bhutanese officials and my colleagues, whose efforts have made this partnership meaningful and fruitful." ISA is also working with Bhutan on developing a National Solar Energy Roadmap and provides regulatory support for developing solar tariffs, licensing and de-licensing regulations, standards, and guidelines to the Electricity Regulatory Authority (ERA) of Bhutan.



Signing of CPS between ISA and MoENR, Royal Government of Bhutan



Roundtable Discussion, centred on the critical need for Bhutan to harness solar energy to enable energy diversification and enhance energy security

The signing of the CPA was followed by a round table discussion which focused on the critical need for Bhutan to harness solar energy to enable energy diversification and enhance energy security, particularly during peak winter seasons when domestic energy demand rises and hydro generation decreases due to reduced river volume.



DG-ISA, Dr Ajay Mathur, HE Lyonpo Gem Tshering, Minister of Energy & Natural Resources (MoENR), Honourable Secretary, MoENR & NFP ISA, Mr Karma Tshering and Vice Chancellor of the Royal University of Bhutan, Mr Nidup Dorji, during the MoU signing

Signing of Memorandum of Understanding (MoU) for the Establishment of Solar Technology Application Resources Centre (STAR-C)

ISA signed an MoU with the DoE, MoENR, Royal Government of Bhutan and the United Nations Industrial Development Organisation (UNIDO) to establish the Solar Technology Application Resources Centre (STAR-C) at the College of Science and Technology (CST) under the Royal University of Bhutan (RUB), with funding support from the French government. This centre aims to strengthen local capacity that promotes the development and dissemination of solar energy technologies and provides technical assistance to accelerate the deployment of solar energy solutions.

Inauguration of Solar Cold Storage, Paro

In addition to strategic meetings, the visit marked the inauguration of a modular solar-powered cold storage facility at the National Post Harvest Centre in Paro, besides placing

a similar unit in Brumbi, Zhemgang. His Excellency Lyonpo Gem Tshering, Minister of Energy and Natural Resources, and DG - ISA, Dr Ajay Mathur, inaugurated the 5MT modular solar-powered cold storage at the National Post Harvest Centre in Paro on 17 April 2024. Part of ISA Demonstration Projects, this initiative is supported and funded by the ISA, underscores the Alliance's commitment to promoting sustainable agricultural practices and reducing food wastage. These facilities, with a combined capacity of 10 metric tonnes (MT) and backed by 12 kWp solar capacity, aim to provide eco-friendly and cost-effective solutions to storage challenges faced by the agricultural sector.

The event, attended by officials from MoENR, Ministry of Agriculture and Livestock (MoAL), sector heads of



H.E. Lyonpo Gem Tshering, Hon'ble Minister of MoENR, during the inauguration, remarked, "The two 5MT Solar Cold Storages established through ISA as a pilot project symbolises a significant step forward in our journey towards building a more resilient and sustainable future. By minimising post-harvest losses and ensuring a steady supply of fresh produce, we bolster food security and empower our farming communities to thrive in an increasingly uncertain climate."

Paro Dzongkhag, local communities, and over 85 participants representing District Administration Paro, Members of Parliament, Block Heads (Gups), and Agriculture and Livestock Extension Officers, marked a significant milestone in Bhutan's quest for sustainable agricultural practices. During the ceremony, the DG - ISA, Dr Ajay Mathur highlighted the importance of embracing emergent technologies and stressed the critical need for sustainable business models in the agricultural sector. ISA provided a grant of USD 50,000 to promote solar-powered cold storage facilities, reinforcing its commitment to supporting Bhutan's efforts in promoting sustainable energy solutions and enhancing agricultural sustainability.

Bilateral Meetings



Meeting with H.E. Sudhakar Dalela, Ambassador of India to Bhutan



Meeting with H.E Lyonpo Leki Dorji, Minister of Finance



Meeting with Hon'ble Secretary of the Ministry of Agriculture and Livestock (MoAL), Mr Thinley Namgyel



Meeting with H.E. Lyonpo Tandin Wangchuk, Minister of Health

ISA delegates discussed solarising healthcare facilities and energy reliability with Bhutan's Health Minister, emphasizing needed investments and potential output. DG – ISA, Dr Ajay Mathur also met Bhutan's Finance Minister to discuss private solar investment and sustainability. Collaboration talks with Bhutan's Agriculture Ministry centred on expanding solar cold storage and PV systems. The Indian Ambassador hosted a meeting between ISA and Bhutanese officials, reaffirming commitment to solar energy collaboration within the International Solar Alliance framework.

Bhutan has been actively engaged with ISA, alongside other ISA partner and donor organisations, to foster collaboration under various ISA programmes. Bhutan has accordingly submitted an Expression of Interest (EOI) to join seven of the nine ISA programmes. Subsequently, ISA works closely with the Department of Energy, Ministry of Energy and Natural Resources on the EOIs. Bhutan's active engagement with various ISA programmes underscores its commitment

to harness solar energy to enhance sustainable development.

The recent engagements and developments signify a shared vision between Bhutan and ISA to embrace renewable energy solutions for a sustainable future. As the partnership strengthens, both parties are poised to achieve significant milestones in advancing solar energy adoption and combating climate change.

Furthermore, ISA's focus also includes conducting assessments, demonstrating innovative technologies like solar cold storage, and devising strategies for effectively scaling solar energy initiatives in Bhutan.

HIGHLIGHT

UNLOCKING SOLAR POTENTIAL: HIGHLIGHTS FROM ISA TECHNICAL MISSION TO UGANDA

From April 17 - 19, 2024, the International Solar Alliance (ISA) undertook a Technical Mission to Kampala, Uganda, aimed at enhancing solar energy development in the region. This mission was a collaborative effort between the ISA Secretariat and the Republic of Uganda, with a focus on identifying and nurturing synergies across various ISA programmes.



H.E. Minister of Energy attended the closing of the Regulatory Workshop and witnessed the signing of the Aide Memoire, which lists key discussions and outcomes of the mission

The mission commenced with high-level discussions involving senior officials from the Ministry of Energy and Mineral Development, laying the groundwork for future collaborations. Additionally, stakeholder roundtable discussions were held, bringing together representatives from diverse sectors to deliberate on challenges and opportunities in the solar energy sector.

A pivotal aspect of the mission was the regulatory validation workshop, which aimed to streamline regulatory frameworks to attract private sector investments in solar mini-grid projects. Key outcomes and insights from these discussions were compiled into an Aide-Mémoire, serving as a reference for future planning and joint implementation of ISA programmes.

The engagements during the mission highlighted several priority areas for intervention and collaboration. Under ISA programmes such as Scaling Solar Applications for Agricultural Use (SSAAU), discussions centred on implementing solar water pumping systems and exploring agrivoltaics to enhance irrigation systems, with commitments from partner organisations like UNDP to collaborate in these endeavours.

Detailed technical discussions regarding the of Scaling Solar Mini-Grids, identified avenues for collaboration in assessing and demonstrating integrated mini-grid projects for off-

grid areas. Furthermore, discussions under Scaling Solar Rooftops explored the solarisation of religious institutions and conducting feasibility studies for potential sites, aiming to mobilise private investments.

Moreover, the mission underscored the importance of solar e-mobility and storage, with discussions focusing on establishing charging stations for electric vehicles and assessing their economic viability. Additionally, Uganda's initiative to develop Green Hydrogen received support from ISA, paving the way for capacity building and policy formulation in this domain.

Regulatory support emerged as a crucial aspect of the mission, with initiatives aimed at updating regulations for solar mini-grids, solar home systems, e-mobility, and green hydrogen. Capacity building efforts, including the establishment of the Solar Technology Application and Research Centre (STAR-C), further solidified Uganda's commitment to becoming a leader in solar adoption in Africa.

As the mission concluded, plans were set in motion to develop a Country Partnership Framework (CPF) between ISA and the Ministry of Energy and Mineral Development. This framework will formalise collaboration efforts and facilitate the implementation of joint projects, underscoring the commitment of both parties to accelerating solar energy deployment in Uganda.

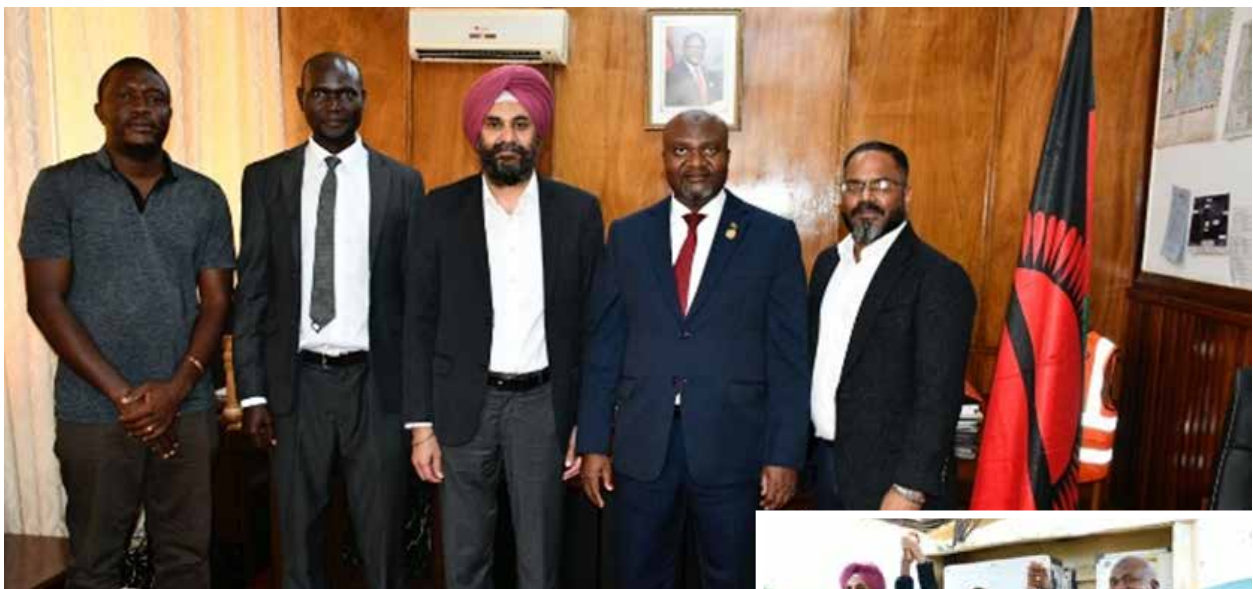
ISA's Technical Mission to Uganda marked a significant step towards unlocking the immense potential of solar energy in the region. By fostering partnerships, streamlining regulations, and promoting capacity building, the mission laid a solid foundation for sustainable solar development, paving the way for a brighter, greener future.



SPOTLIGHT

ISA COMMISSIONS SOLAR DEMO PROJECT EMPOWERING MALAWI'S PARLIAMENT

On April 9, 2024, the International Solar Alliance (ISA) celebrated a significant milestone as it officially commissioned the solar backup system at the Parliament Building in Lilongwe, Malawi. The occasion was graced by the esteemed presence of H.E. Ibrahim Matola, Minister of Energy, marking a pivotal step towards sustainable energy solutions in the region.



The genesis of this achievement traces back to September 2021 when the ISA entered into a grant agreement worth \$50,000 USD with the Government of Malawi. Recognising the pressing need for reliable power supply in the face of frequent disruptions, particularly affecting parliamentary operations, Malawi sought a solution aligned with its commitment to environmental sustainability.

The project unfolded in two phases, with Phase I unveiled during the commissioning ceremony. This phase features a 25 kilowatt-peak solar system integrated with a new carport structure. The subsequent Phase II will augment this with a



105 kilowatt-peak solar system, further enhancing the capacity to harness clean energy. Notably, while Phase I lacks a battery component, Phase II will integrate this essential element, ensuring continuous power availability.

The significance of this endeavour extends beyond mere energy provision. The 25kWp grid-tied solar power system is poised to save a substantial 44MWh of electricity annually, significantly alleviating strain on the conventional power grid. Furthermore, its implementation will mitigate the emission of 33 tons of CO₂ gases annually, underscoring its contribution to combating climate change.



SPOTLIGHT

ACCELERATING THE GREEN HYDROGEN REVOLUTION: INSIGHTS FROM THE ISA-INAЕ SEMINAR

Green hydrogen, heralded as a game-changer in the pursuit of sustainability, took centre stage at the recent Seminar jointly organised by the International Solar Alliance (ISA) and the Indian National Academy of Engineering (INAE). Held on April 22, 2024, the event served as a pivotal platform for global experts, policymakers, innovators, investors, and industry leaders to explore the potential and challenges of this transformative energy source.



In the quest to combat climate change and transition towards renewable energy, understanding the nuances of green hydrogen is paramount. The seminar facilitated dynamic dialogue and collaboration, aiming to unlock opportunities, address challenges, and catalyse action towards a sustainable future.

The seminar wasn't merely about knowledge dissemination; it was about igniting action. By fostering partnerships and alliances, participants aimed to accelerate the global adoption of green hydrogen. Through discussions spanning policy, technology, economics, and supply-demand dynamics, the

goal was to translate aspirations into tangible solutions.

The event also spotlighted India's unique position in leveraging green hydrogen to achieve its clean energy objectives and emerge as a global leader in the green hydrogen revolution. With initiatives like the National Green Hydrogen Mission (NGHM), India is poised to become a hub for green hydrogen production, usage, and export.



Key objectives of the seminar included:

Assessing Policy and Regulatory Frameworks:

Participants evaluated frameworks and incentives crucial for accelerating the readiness of the green hydrogen ecosystem.

Market Creation and Standard Harmonization: The seminar examined strategies for creating markets and harmonizing global standards to facilitate domestic consumption and export.

Exploring Business Models: Various business models for off-take of green hydrogen were analysed to understand their viability and scalability.

Driving Down Costs: Discussions centred on identifying economic factors and policy instruments to drive down the costs associated with green hydrogen production.

Meeting Sectoral Demands: Participants explored

the emerging demands for green hydrogen across various sectors in India, aiming to align supply with demand effectively.

Strategies for Acceleration: Effective strategies to expedite the demand for green hydrogen in India were examined, focusing on collaboration, innovation, and investment.

The seminar underscored the critical role of collaboration and concerted efforts in realising the full potential of green hydrogen. By harnessing renewable energy and embracing the green hydrogen economy, nations can not only decarbonise but also foster sustainable economic growth.

The ISA-INAE seminar served as a beacon of hope, illuminating pathways towards a greener, more sustainable future powered by green hydrogen.



SPOTLIGHT

ISA WORKSHOP ON PROMOTING AGRIVOLTAICS

The International Solar Alliance (ISA) recently convened a landmark workshop on “Promoting Agrivoltaics in ISA Member Countries”, focused on sustainable energy and agriculture integration. Drawing over 150 attendees from more than 50 nations, the event showcased the burgeoning global interest and momentum surrounding agrivoltaics, a synergy between solar energy and agricultural practices.

Agrivoltaics, the practice of co-locating solar panels with agriculture, holds immense promise in addressing pressing global challenges, from food security to climate change mitigation. However, amidst its potential lie significant hurdles, as highlighted during the workshop.

Challenges Ahead

Three key challenges emerged from discussions:

Lack of Awareness: Despite its potential benefits, many farmers and policymakers remain unaware of the feasibility and advantages of agrivoltaic systems.

Regulatory Barriers: Existing policies may not fully support

the integration of solar and agriculture, posing regulatory obstacles to widespread deployment.

Upfront Investment Costs: Initial capital requirements for agrivoltaic projects can be higher than traditional solar installations, potentially dissuading stakeholders from investing.

Advantages at a Glance

Despite these challenges, the workshop underscored three significant advantages of adopting agrivoltaics:





Enhanced Food Security: Dual land use for solar energy generation and crop cultivation increases overall land productivity, contributing to food security in a world grappling with hunger.

Promotion of Renewable Transition: Agrivoltaic systems not only generate clean energy but also preserve agricultural land and livelihoods, accelerating the transition to renewable energy sources.

Climate Change Mitigation: By reducing greenhouse gas emissions through clean energy production while maintaining essential ecosystem services provided by agricultural lands, agrivoltaics emerge as a potent tool in the fight against climate change.

Commitment to Action

In response to these findings, ISA is committed to several key initiatives:

Knowledge Sharing: Organizing workshops, webinars, and knowledge exchange platforms to disseminate best practices and technical expertise.

Policy and Regulatory Support: Collaborating with Member Countries to develop model policies facilitating seamless solar-agriculture integration.

Capacity Building and Technical Assistance:

Providing Member Countries with technical support to assess agrivoltaic potential and implement successful pilot projects.

Pilot and Demonstration Projects:

Facilitating the implementation of pilot projects to showcase agrivoltaics' viability across technical, economic, societal, and environmental dimensions.

Driving the Solar Revolution

The workshop exemplifies ISA's steadfast commitment to advancing global solar energy adoption, including cutting-edge technologies like agrivoltaics. The enthusiastic participation and positive feedback received underscore the growing interest and momentum surrounding this innovative approach, crucial for supporting sustainable development and a just energy transition.

To catch the replay of the workshop, visit:

<https://lnkd.in/gE986WDn>

OPINION

AGRIVOLTAICS: UNLOCKING MULTIFACETED BENEFITS FOR ISA MEMBER COUNTRIES

As the impacts of climate change intensify around the world, nations are grappling with the dual challenge of ensuring food and energy security for their populations. Prolonged droughts, severe weather events, and temperature fluctuations are threatening agricultural productivity, while the urgency of transitioning to renewable energy sources grows ever more pressing. In this context, an innovative approach called agrivoltaics is gaining traction as a potential solution that harmoniously addresses both imperatives.

Agrivoltaics involves the co-development of land for both solar power generation and agricultural production. By installing solar photovoltaic (PV) panels on farmlands, these systems allow for the simultaneous growth of crops and generation of renewable electricity on the same piece of land. This dual-use of limited land resources is a key advantage of agrivoltaic systems.

The International Solar Alliance (ISA), comprising 119 member countries, is at the forefront of promoting and supporting agrivoltaic initiatives among its members. At a recent Agrivoltaic Workshop organized by the ISA, 150 participants representing more than 50 countries expressed overwhelming interest in adopting this approach. Countries like Venezuela, Luxembourg, Côte d'Ivoire, Niger, Comoros, Mauritius, Malawi and Zambia have requested comprehensive assistance, including policy

guidance, feasibility studies, financing mechanisms, capacity building, pilot implementation, and knowledge sharing, to unlock the multifaceted benefits of agrivoltaic systems.

The potential advantages of agrivoltaics are indeed substantial and multidimensional. Studies indicate that the electricity generated by the solar PV panels in these systems can increase the overall economic value and viability of agrivoltaic farms by more than 30%¹. This boost in revenue streams stems from the farms' ability to simultaneously sell both agricultural produce and solar-derived electricity.

¹ <https://www.iberdrola.com/innovation/agrivoltaics>



https://www.flickr.com/photos/water_alternatives/51106786202/sizes/l/

Moreover, agrivoltaics have demonstrated increased crop yields under certain conditions. The strategic shading provided by the solar panels can benefit crop growth by reducing moisture evaporation and heat stress. Importantly, agrivoltaics can make agriculture more resilient to climate change impacts as environmental conditions become more challenging. The protective shading and improved soil moisture retention can help maintain crop output despite harsh weather impacts.

While the promise of agrivoltaics is undeniable, several barriers need to be overcome before this approach can become mainstream across ISA nations. These include regulatory hurdles stemming from outdated policies that treat solar farms and agricultural activities separately rather than integrating them. For instance, the India edition of the Agrisolar Best Practice Guidelines emphasizes the benefits of harmonizing solar infrastructure with agricultural activities². It offers strategic insights into overcoming challenges through agrivoltaics, in accordance with the specific characteristics of the country. In the United States, the synergy between combining solar production and agricultural production, like planting crops or grazing animals, on the same land has been actively researched³. This practice of agrivoltaics, not only saves space but also offers a number of mutually beneficial results for both the energy and the agriculture spheres as well as the surrounding communities and ecosystem⁴. Additionally, the lack of technical expertise in optimizing system designs for local crops, climates, and practices poses a challenge. Furthermore, the high upfront costs involved, untested business models, and limited access to financing create financial obstacles.

However, the ISA is well-positioned to play a catalytic role in accelerating the agrivoltaic transition. By developing model regulations and best practice guidelines, the organization can equip its member countries with the policy frameworks needed to properly integrate solar and agricultural activities. Conducting feasibility assessments, channeling financing through instruments, and investing in regional capacity building programs by bringing in best global institutions, trainers, and partners to provide the most updated training can further empower local stakeholders with the skills and resources essential for successful implementation.

The immense potential of agrivoltaics is evident from the following projected data and research findings:

- In India, GiZ has estimated the potential for India's Agrivoltaics, ranging from 3,156 GW to 13,803 GW⁵. This estimation integrates Ministry of Agriculture data for 17 crops covering 129 million hectares, utilizing solar resource availability and GIS-based criteria to assess land parcel suitability for agrivoltaics.
- In the United States, the global installed agrivoltaic capacity has skyrocketed from just 5 MW in 2012 to a massive 2,900

MW by 2020⁶. Researchers at Oregon State University estimate that converting a mere 1% of American farmland to agrivoltaics could meet all the nation's renewable energy targets while saving water and creating a sustainable long-term food production system⁷.

- Even in land-constrained Japan, studies have investigated the viability of agrivoltaics for rice cultivation, showing that shading rates of 27-39% can sustain at least 80% of rice yields while generating clean electricity⁸.
- In Europe's Netherlands, agrivoltaic "solar roofing" over farmlands is being explored as a means to protect crops from weather extremes while contributing to climate protection and decarbonization⁹.

As these examples illustrate, agrivoltaics present a unique opportunity to harmonize the critical imperatives of climate safety, energy security, plentiful food production, and sustainable economic development. By strategically integrating solar power generation with agriculture, countries can augment farmer incomes through options like facilitating grid integration of the solar power generated, providing feed-in tariffs, and exploring innovative business models. This can build climate resilience into food systems, reduce land usage trade-offs, and turbocharge the adoption of renewable energy in a mutually reinforcing manner.

For the number of ISA's member countries, where agriculture is the backbone of rural livelihoods and socioeconomic progress, embracing agrivoltaic approaches through concerted policy action and collaborative knowledge-sharing can pave the way for a sustainable future that reconciles growing energy needs with nutritional requirements and environmental preservation. With strategic vision and robust commitment, the transformative promise of agrivoltaics can be translated into a tangible reality capable of addressing the complex food-water-energy nexus challenges that defined the 21st century.

By Jaymin Gajjar

Consultant, Knowledge Management & Institutional Development, ISA

² https://www.energyforum.in/fileadmin/user_upload/india/media_elements/publications/20240219_Agrisolar_Best_Practice_Guidelines/Agrisolar_best_practice_guidelines.pdf

³ <https://www.solarpowerworldonline.com/2021/04/solar-power-agriculture-the-practices-and-synergies-of-agrivoltaics/>

⁴ <https://www.solarpowerworldonline.com/2021/04/solar-power-agriculture-the-practices-and-synergies-of-agrivoltaics/>

⁵ <https://beta.cstep.in/staaiddev/assets/manual/APV.pdf>

⁶ <https://www.solarpowerworldonline.com/2021/06/largest-agrivoltaic-research-project-in-u-s-advances-renewable-energy-while-empowering-local-farmers/>

⁷ <https://www.solarpowerworldonline.com/2021/06/largest-agrivoltaic-research-project-in-u-s-advances-renewable-energy-while-empowering-local-farmers/>

⁸ <https://www.mdpi.com/2076-3298/8/7/65>

⁹ <https://www.baywa-re.com/en/cases/emea/solar-installations-bear-fruit-for-netherlands-agri-pv>

SNAPSHOT

ADVANCING RENEWABLE ENERGY INTEGRATION: HIGHLIGHTS FROM THE 6TH ECPA MINISTERIAL MEETING

At the 6th ECPA Ministerial Meeting held on March 14th and 15th, 2024, in Punta Cana, Dominican Republic, the International Solar Alliance (ISA) participated alongside energy ministers from across the Americas, representatives from the United States government, the Organisation of American States (OAS), the World Bank (WB), the Inter-American Development Bank (IDB), and Dominican Republic's energy sector authorities.

Discussions centred on transitioning to clean, sustainable energy sources, highlighting the private sector's crucial participation, financing needs, and climate change challenges. Cooperation agreements focused on knowledge exchange and best practices in renewable energy areas. Notable advancements included the adoption of the CertHilac protocol for certifying clean hydrogen and commitments by 16 countries to achieve a 70% renewable energy share by 2030.

The meeting concluded with a call to action by OLADE, ECLAC, and the Ministry of Energy and Mines of the Dominican Republic, emphasizing just, inclusive, and sustainable energy transitions across the region.



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SNAPSHOT

HIGHLIGHTS FROM THE GLOBAL SCIENCE-POLICY FORUM ON SOCIALLY INCLUSIVE SOLAR IRRIGATION SYSTEMS

ISA recently partnered in the Global Science-Policy Forum held in Kathmandu, Nepal from April 24th to 26th, 2024. The event aimed to showcase South Asia's insights on solar irrigation's role in sustainable agri-food systems and foster collaboration among policymakers, scientists, and stakeholders.



The three-day forum highlighted solar irrigation's potential to advance Sustainable Development Goals (SDGs), with over 150 delegates from 20 countries, including ISA Member Countries like Ethiopia, Ghana, and Egypt. Mr Praphul Sharma, Distributed Solar Specialist at ISA, emphasised crucial strategies for scaling up solar irrigation systems, stressing robust policies, private sector engagement, capacity building, and gender inclusion. He also advocated for knowledge sharing among ISA Member Countries through South-South Cooperation, aiming to customise solar irrigation models to local contexts and accelerate progress towards SDGs. The forum concluded with a call to action, urging collective efforts to drive widespread adoption of socially inclusive solar irrigation systems and foster sustainable agricultural practices globally.

SNAPSHOT

MNRE SECRETARY VISITS INTERNATIONAL SOLAR ALLIANCE SECRETARIAT

Secretary of the Ministry of New and Renewable Energy (MNRE), Shri Bhupinder Singh Bhalla, along with Joint Secretary Shri Dinesh Dayanand Jagdale, recently visited the International Solar Alliance (ISA) Secretariat. During the visit, Secretary Bhalla interacted with ISA officials, receiving updates on ongoing and upcoming initiatives.



ISA IN NEWS

February & March 2024



India emerges as driving force of 118-nation International Solar Alliance

[Dajiworld](#)



Malta becomes 119th member of International Solar Alliance

[ET Energy World](#)



Malta becomes 119th country to Join International Solar Alliance

[Saur Energy](#)



ISA mission to Chad

[National TV Chad](#)



Malta Becomes 119th Country To Join International Solar Alliance

[The Times of India](#)



Panama becomes 97th member of International Solar Alliance: MEA

[Business Standard](#)



Bangladesh seeks ISA cooperation for solar power promotion

[United News of Bangladesh](#)



Solar power to be expanded further in char areas: Nasrul Hamid

[The Business Standard](#)



Bangladesh has huge prospect in solar energy: Nasrul

[Bangladesh Sangbad Sangstha](#)



Bangladesh has bright potential in solar power: Nasrul Hamid

[Dhaka Post](#)



Bangladesh wants to import 9,000MW electricity from neighbours: Nasrul

[The Daily Star](#)



Calls for tripling of global renewable energy capacity at ETEnergyworld Middle East Leadership Summit

[ET Energy World](#)



Panama becomes 97th member of International Solar Alliance: MEA

[ANINEWS](#)



Panama becomes 97th member of International Solar Alliance

[Etemaad](#)

ISA IN NEWS

March & April 2024



Keynote Address by Ajay Mathur, Director General of ISA at the Solar Power Congress

[ET Energy World](#)



Solar Solutions for Resilient Healthcare Systems

[Energyworld](#)



Global Collaborations Needed for Accelerating Solar Power Deployments

[Renewable Watch](#)



ISA joins hands with Bhutan to spur growth of solar energy

[The Times of India](#)



International Solar Alliance to help boost Bhutan's Solar Initiatives

[MOENR, Bhutan](#)



Paro's National Post Harvest Centre opens new solar-powered cold storage facility

[BBS Bhutan](#)



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