

EASING SOLAR DEPLOYMENT GLOBALLY

NEWSLETTER

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FROM DIRECTOR GENERAL'S DESK



It is with great pleasure that I bring you the latest updates from the International Solar Alliance (ISA) as we continue our journey towards a more sustainable and equitable future through solar energy. Our recent Country Mission to Bangladesh marks a significant step towards fostering collaboration and leveraging solar energy to address common challenges. We are committed to strengthening such partnerships for collective progress. Bangladesh's unique topography, characterised by numerous water bodies and high population density, presents both challenges and opportunities for harnessing solar power. In such a scenario, traditional methods of solar installation may

not suffice. Instead, innovative approaches such as floating solar panels on water bodies and rooftop solar installations become imperative. Floating solar technology, for instance, not only utilises otherwise unused water surfaces but also helps to reduce water evaporation and algae growth. Similarly, rooftop solar installations capitalise on available urban spaces, catering to the densely populated areas of the country. Through various initiatives and programs, ISA is dedicated to unleashing the full potential of solar to drive positive change on multiple fronts.

ISA's commitment to empowering solar innovators was showcased through the successful launch of the SolarX Startup Challenge APAC 2024. Entrepreneurship is crucial in the proliferation of solar deployment, significantly impacting economic, social, and environmental spheres. Recognising this, workshops held in Bengaluru and Singapore served as platforms for emerging entrepreneurs, empowering them, and enabling their ideas to propel innovation within the solar sector. Through such initiatives, ISA not only cultivates a culture of entrepreneurship but also catalyses tangible advancements towards sustainable energy solutions, thereby amplifying the global impact of solar technology. Participants of the SolarX Startup Challenge visited India's First Solar Powered Village, Modhera, to experience first-hand sustainable innovation.

ISA participated in the 10th Berlin Energy Transition Dialogue advocating for policies that promote environmentally friendly industry practices. Recognizing the importance of domestic production for resilience, regions globally are boosting manufacturing capacities for renewable energy tech. For instance, the EU aims to meet 40% of its demand by 2030 by ramping up production for eight key technologies. Similarly, the American Recovery and Reinvestment Act allocates \$15 billion for clean manufacturing tax credits, reflecting the United States' commitment to domestic clean energy manufacturing. ISA emphasised manufacturing diversification and global collaborative efforts for sustainable energy transitions on a global scale.

Recognising global gender disparities in labour force participation, especially in renewable energy, ISA is committed to promoting women's involvement through initiatives like Solar for She. Solar PV leads in renewable energy employment with a balanced gender ratio, showing promise as an inclusive sector. Achieving an equitable energy transition goes beyond access, necessitating universal inclusion and fair benefits. Renewable energy offers opportunities for gender equality but requires intensified efforts to empower women in leading the transition for a shared future.

To level the playing field, raising awareness on gender equality, enhancing national and workplace policies, providing comprehensive training, fostering

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networking opportunities, and facilitating access to mentorship programs are indispensable steps. These efforts not only aim to increase women's participation but also strive to diversify the workforce by harnessing the diverse visions, talents, and skills of all stakeholder groups. Through such concerted endeavours, ISA aims to foster an inclusive and sustainable energy transition that leaves no one behind.

In conclusion, I urge all stakeholders to join hands in our collective efforts to harness the power of solar energy for a brighter, cleaner, and more inclusive tomorrow.

Thank you for your continued support and dedication to the cause of solar energy.



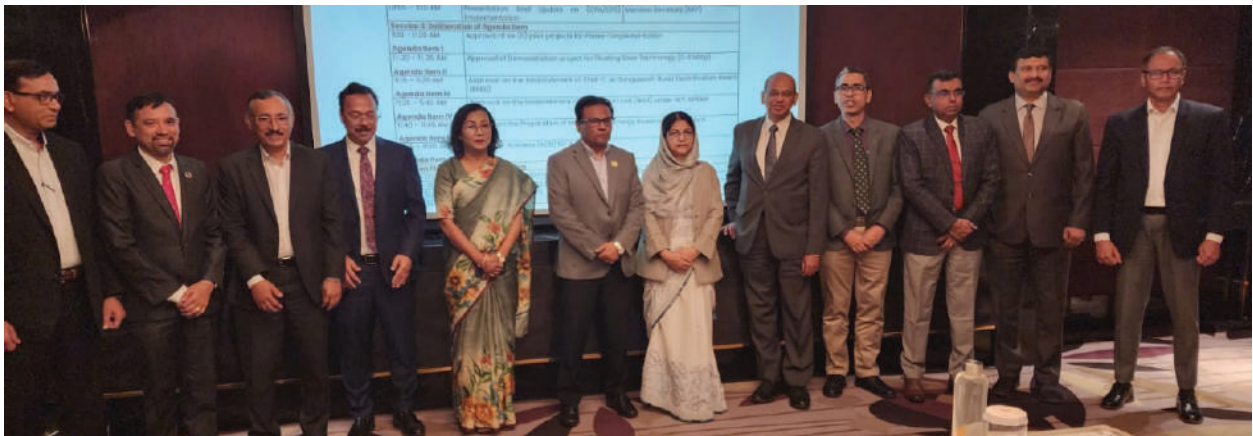
Ajay Mathur

Director General, International Solar Alliance

HIGHLIGHT

COUNTRY MISSION TO BANGLADESH: A PRODUCTIVE STEP TOWARDS SOLAR COLLABORATION

The International Solar Alliance (ISA) recently concluded a high-level country mission to Bangladesh, culminating in significant achievements and promising collaborations in the solar energy sector. Spanning over two days, the mission comprised a series of engagements aimed at fostering cooperation and advancing solar projects in the region.



The mission commenced with a networking dinner hosted by the Power Division of the Ministry of Power, Energy and Mineral Resources, Bangladesh, bringing together representatives from various ministries, secretaries, additional and joint secretaries, chairman, and director generals. This gathering provided an invaluable platform for stakeholders to exchange ideas, discuss challenges, and explore opportunities for solar initiatives.

One of the highlights of the mission was the steering committee meeting, chaired and co-chaired by esteemed dignitaries including Mr Md. Habibur Rahman, Senior Secretary of BPAA, Power Division, Ministry of Power, Energy & Mineral Resources, and Dr Ajay Mathur, Director General of ISA. During this session, crucial discussions took place regarding the approval of seven solar projects, marking a significant step forward in enhancing solar infrastructure and adoption in Bangladesh.

The engagement with key stakeholders, including the Hon'ble Indian High Commissioner Shri Pranay Kumar Verma and HE Nasrul Hamid, State Minister of the Ministry of Power, Energy and Mineral Resources, Bangladesh, further underscored the commitment of both nations towards fostering solar collaborations. These discussions not only solidified existing partnerships but also paved the way for future initiatives aimed

at harnessing solar energy for sustainable development.

The success of the country mission is a testament to the collective efforts of all stakeholders involved. It reflects the dedication and determination of the ISA community to advance the global transition towards renewable energy. As we celebrate these achievements, it is imperative to maintain the momentum and work diligently towards the successful implementation of the approved projects by the end of 2024.

The ISA extends its gratitude to all participants, partners, and stakeholders for their unwavering support and commitment to realising the vision of a sustainable energy future. With continued collaboration and concerted efforts, we are confident that solar energy will play a pivotal role in driving socio-economic growth and mitigating climate change across the globe.



IN FOCUS

UNLEASHING THE ROLE OF SOLAR IN ADVANCING ECONOMIC, SOCIAL, AND ENVIRONMENTAL EQUITY

As countries across the world strive towards a just and sustainable energy transition, there is a need to view these through their developmental challenges amidst exacerbated climate vulnerabilities, and compounding energy needs. Indicators such as access to electricity, for example, remain uneven across the world with most developed regions having almost 100% access to electricity and one of the highest human development indicators (>0.8), and developing nations have HDI less than 0.6 on an average with several African nations having <50% access to electricity. Addressing these in a manner that is conducive to growth which entails economic, social, and environmental progress is imperative.

This requires embracing a people-centric and planet-friendly approach, with a focus on acknowledging the efforts of emerging countries in balancing energy transitions with developmental needs. Solar can enable this. Among all renewables, solar energy has rapidly grown boasting a 21% annual growth rate and becoming the most cost-effective renewable energy source, with the potential to generate 1600-49800EJ annually. Despite its meteoric rise, challenges such as financial constraints, limited network capacity, local opposition, and institutional gaps hinder its widespread adoption.

ISA through its report “Unleashing the Role of Solar in Advancing Economic, Social and Environmental Equity”, recognizes this challenge and undertakes an archetype-based analysis to assess the key drivers enabling a transition. Crafting tailored solutions for global solar adoption necessitates understanding the diverse trajectories of countries. Factors such as improving socio-economic indicators, reducing import bills, in addition to reducing emissions and improving environmental benefits, are at play. Variances in electricity access and solar adoption costs highlight the need for bespoke approaches, such as rapid low-carbon transitions for developed countries, increased private financing and differentiated technological solutions for developing nations.

Through four archetypes - high-income, middle-income, low-income and SIDS, the report uses publicly available

data to provide a vantage point to view energy transitions while considering socio-economic and developmental indicators around equity, access, and affordability. Each archetype presents a unique story. High Income Countries need to transition about 57% of their current assets to clean energy, whereas emerging economies, which run the risk of breaching emission budgets very quickly on the back of over 5% growth rates, need immediate low risk enabling environment to facilitate accelerated adoption of RE. Low Income Countries need increased energy access to drive growth but face high costs of debt, ranging from 20-30% compared to 5-20% globally, coupled with the absence of domestic renewable energy supply chains hindering solar asset development. Lastly, Small Island Developing States need to strengthen energy security by lowering dependence on imported fossil fuel from 10-20% of GDP spent on fossil fuel imports vis-à-vis global average of 8-12%.

Based on this in-depth analysis, the report then proposes enablers and solutions—financial, technological, and policy-oriented— which can be adapted to address these unique requirements for each archetype. In line with ISA's vision, it is envisaged that this report will be an annual publication designed to showcase the role of unleashing solar and/or renewables in advancing economic, social, and environmental equity through the use of key data metrics.

Read the complete report here - [ISA - International Solar Alliance \(working.in\)](#)

SPOTLIGHT

ISA EMPOWERS SOLAR INNOVATORS: WORKSHOPS IN BENGALURU AND SINGAPORE MARK THE LAUNCH OF SOLARX STARTUP CHALLENGE APAC 2024

The International Solar Alliance (ISA) continues to pave the way for innovation in the solar energy sector with the inauguration of the SolarX Startup Challenge APAC 2024: India Edition. Held on 1st March in Bengaluru, the event marked the beginning of an exciting journey for startups in India's thriving solar ecosystem.



The SolarX Startup Challenge APAC 2024: India Edition promises to elevate 10 promising startups, providing them with recognition and unparalleled opportunities. With the application deadline set for 30th April 2024, startups are urged to seize this chance to showcase their innovative solutions in solar energy.

In parallel, ISA and Invest India organised a Knowledge Sharing & Handholding workshop in Singapore, catering to the broader APAC region. This workshop served as a platform for venture capitalists, industry groups, and startups to converge, exchange ideas, and explore avenues for collaboration. Held in March, the event was a testament to ISA's commitment to fostering collaboration and innovation on a global scale.

These workshops underscore ISA's dedication to nurturing solar innovators and driving the transition towards sustainable energy solutions. By encouraging participation from Indian startups in the SolarX Startup Challenge APAC 2024, ISA aims to accelerate the development and adoption of transformative technologies in the solar energy domain.

The SolarX Startup Challenge APAC 2024: India Edition and the Knowledge Sharing & Handholding workshops in Bengaluru and Singapore exemplify ISA's mission to catalyse



positive change in the global energy landscape. Through collaboration and knowledge exchange, we are shaping a future powered by clean, renewable energy.

To apply for the SolarX Startup Challenge APAC 2024, visit the official website: <https://t.co/KudWxrJTax>

SNAPSHOTS

ISA ORGANISED A SITE VISIT TO INDIA'S FIRST SOLAR POWERED VILLAGE MODHERA FOR SOLARX STARTUP CHALLENGE PARTICIPANTS

The International Solar Alliance (ISA) recently organised a captivating site visit to Modhera, India's pioneering solar-powered village, for participants of SolarX APAC. Against the backdrop of Modhera's innovative infrastructure, entrepreneurs from across the Asia-Pacific region converged, brimming with determination to confront the clean energy challenges of tomorrow. Amidst the vibrant atmosphere of sustainable progress, participants exchanged ideas, explored technological advancements, and forged collaborations

aimed at accelerating the global transition to renewable energy. Modhera stands as a beacon of inspiration, showcasing the transformative potential of solar energy and underscoring the collective resolve to build a brighter, more sustainable future for generations to come.



SNAPSHOTS

PROMOTING GENDER INCLUSION IN GREEN JOBS



In a commendable stride towards fostering gender inclusion in the renewable energy sector, the International Solar Alliance (ISA) actively participated in the event “Gender Inclusion through Skill Development & Targeted Policies for Green Jobs,” orchestrated by the Ministry of New and Renewable Energy (MNRE) on International Women’s Day 2024.

Representing ISA, R. Vardhani engaged in a thought-provoking panel discussion during the event. The discussion delved into the imperative role of skill development and the formulation of targeted policies to promote gender diversity in the green job sector. Vardhani’s insightful contributions underscored ISA’s commitment to advocating for equal opportunities and

empowerment within the renewable energy landscape.

The event served as a platform for stakeholders to exchange ideas, strategies, and best practices aimed at bridging the gender gap in the renewable energy workforce. ISA’s active involvement in such initiatives reaffirms its dedication to advancing gender equality and creating a more inclusive environment for all individuals in the pursuit of sustainable energy solutions.



SNAPSHOTS

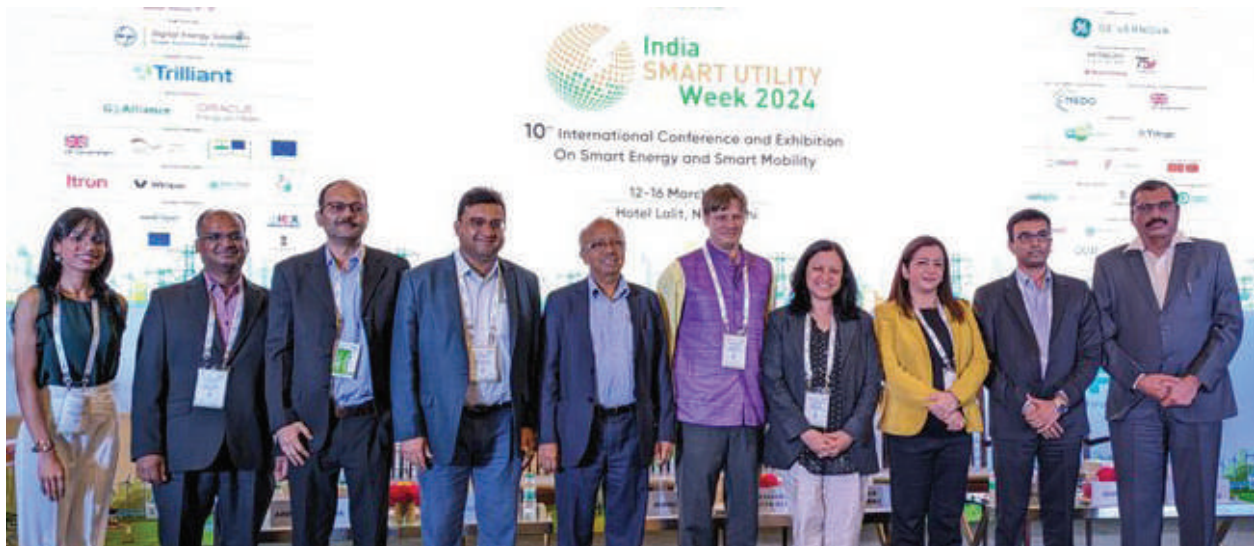
13TH EU-INDIA SMART ENERGY WORKSHOP AT INDIA SMART UTILITY WEEK 2024

In a noteworthy display of international collaboration, the International Solar Alliance (ISA) took centre stage at the 13th EU-India Smart Energy Workshop held during India Smart Utility Week 2024. Mridula Bhardwaj, representing ISA, delivered an insightful presentation on the pivotal role of Standards & Regulations for Green Hydrogen. She also shed light on ISA's pioneering GHIC initiative, aimed at catalysing innovation and fostering collaboration within the Green Hydrogen ecosystem.

The workshop served as a platform for robust discussions, emphasising the imperative of global cooperation and knowledge sharing in propelling the adoption of green hydrogen technologies. Through ISA's active participation and contributions, the event underscored the organisation's

commitment to advancing sustainable energy solutions on a global scale.

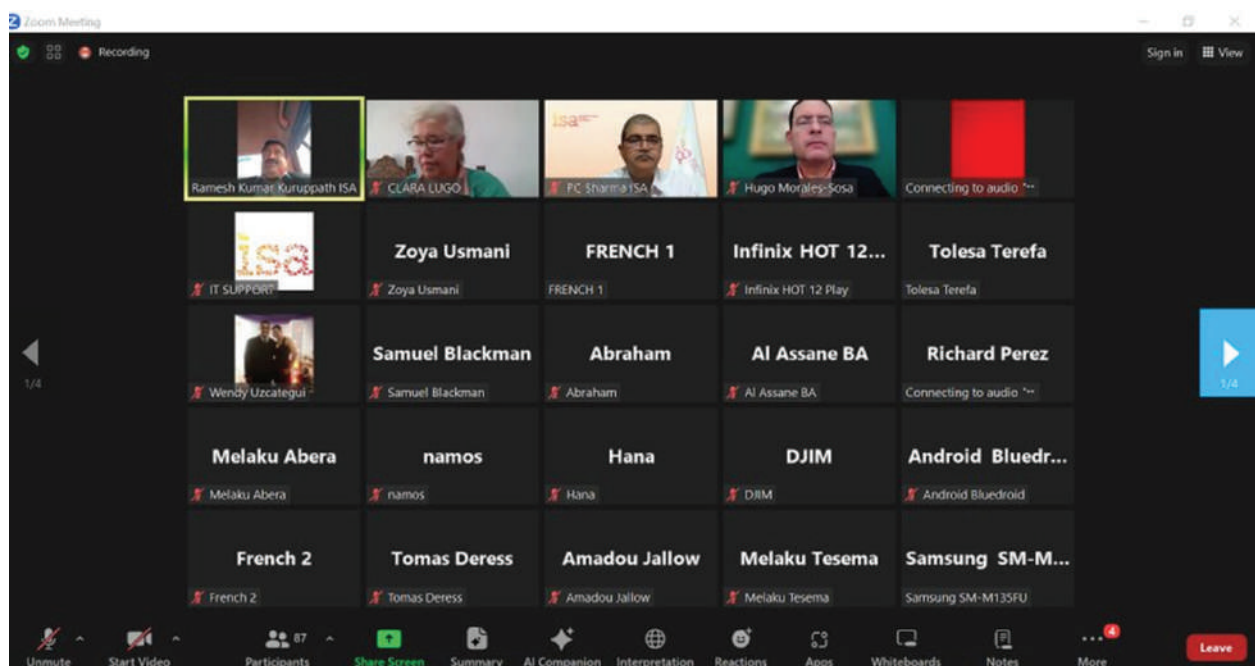
The engagement at the 13th EU-India Smart Energy Workshop not only highlighted the significance of international partnerships but also showcased ISA's dedication to driving positive change in the realm of renewable energy. As the world navigates towards a greener future, initiatives like GHIC and collaborative workshops serve as beacons of hope, guiding us towards a more sustainable and resilient energy landscape.



SNAPSHOTS

EMPOWERING COMMUNITIES: ISA'S SUCCESSFUL 5-DAY ONLINE TRAINING ON SOLAR WATER PUMPING SYSTEMS

In March, the International Solar Alliance (ISA) successfully conducted a transformative 5-day online training program on Solar Water Pumping Systems. The event, held from 18th to 22nd March, attracted over 400 participants from more than 25 countries, marking a significant global collaboration towards sustainable energy solutions.



Throughout the training sessions, participants delved into crucial aspects of solar technology implementation, gaining essential knowledge and skills to harness solar energy effectively. The program emphasised the empowerment of individuals and communities, highlighting the potential for solar technologies to drive positive change on a local and global scale.

By fostering peer-to-peer learning and promoting best practices, the ISA endeavoured to build a vibrant



community of solar energy advocates and practitioners. Together, participants contributed to the advancement of sustainable development goals, illustrating the collective commitment to creating a brighter and more sustainable future powered by solar energy.

SNAPSHOTS

10TH BERLIN ENERGY TRANSITION DIALOGUE: EMBRACING GREEN INDUSTRY POLICIES



The 10th Berlin Energy Transition Dialogue (BETD) 2024 witnessed the active participation of the Director-General of the International Solar Alliance (ISA). Engaging in a thought-provoking panel discussion titled 'How to Make Industry Policy Green and Sustainable?', the Director-General underscored a crucial shift in strategy—emphasising the necessity of generating demand for Green Energy through guarantees rather than solely relying on subsidies.

Amidst the overarching theme of 'Accelerating the Global Energy Transition,' this year's BETD 2024 conference served as a rallying point for global stakeholders, reflecting a resolute international commitment to embracing renewable energy sources. Concrete steps were outlined, signaling a collective determination to pave the way towards a sustainable and greener future.

The ISA's active involvement in the dialogue not only highlighted its dedication to advancing solar energy initiatives but also underscored its role as a key player in fostering international cooperation towards a more sustainable energy landscape.

DG ISA PRESENTS AWARD TO CLINGSYSTEMS AT SET AWARDS 2024

At the esteemed SET Awards 2024 organised by StartUpGET, the Director-General of the International Solar Alliance (ISA) had the honor of presenting an award to ClingSystems. This recognition, bestowed in the category of Clean Energy & Storage, celebrates ClingSystems' remarkable efforts in propelling sustainable energy solutions forward.

The SET Awards stand as a pivotal platform for start-ups and budding enterprises worldwide, providing them with the opportunity to spotlight their pioneering concepts and endeavors. ClingSystems' dedication to advancing clean energy and storage technologies exemplifies the innovative spirit crucial for shaping a more sustainable future for generations to come. Through this accolade, the ISA reaffirms its commitment to supporting and acknowledging initiatives that drive impactful change in the realm of renewable energy. ClingSystems' achievement serves as inspiration for the global



community, demonstrating the profound potential of collaborative efforts in fostering a greener, more sustainable world.

SNAPSHOTS

ISA AND INSIC WEBINAR EXPLORES CARRINGTON EFFECT'S IMPACT ON REGIONAL GRIDS



In a collaborative effort between the International Solar Alliance (ISA) and the International Solar Innovation Council (InSIC), a pioneering webinar shed light on the 'Carrington Effect and its impact on the Regional Grids'. Esteemed experts gathered virtually to dissect the potential implications of Carrington Storms on regional power grids, aiming to bolster preparedness and resilience in the face of solar disturbances.

Distinguished representatives from NASA and Finnish Space Weather Scientists spearheaded the event, presenting their cutting-edge research findings. Their insights delved into the nature and potential impacts of Carrington Storms, offering a comprehensive understanding of this solar phenomenon.

The webinar provided a crucial platform for stakeholders to engage with leading authorities in the field, fostering dialogue and knowledge exchange. Participants gained invaluable insights into the complexities of solar disturbances and their ramifications on regional energy infrastructure.

Stay tuned to ISA channels for updates on future initiatives aimed at advancing solar innovation and resilience on a global scale.

Catch the replay of the webinar here:

<https://youtu.be/LgsZhVwcO9w>



Geomagnetically induced currents: impacts and the U.S. geomagnetic disturbance standards

Antti Pulkkinen
Director, Heliophysics Science Division
NASA Goddard Space Flight Center



#IDEASTHATHAVEWORKED: SOLAR IMPACT STORIES FROM AROUND THE GLOBE

A BANGLADESHI START-UP IS REVOLUTIONISING SOLAR PEER-TO-PEER ELECTRICITY SYSTEMS IN THE COUNTRY



The Bangladesh-based startup, SOLshare is revolutionising the solar peer-to-peer electricity trading system in the country through an ICT-enabled network. Their efforts have enabled over 25 million people across Bangladesh to avail electricity and lead better lives.

In the early 2010s, a sizable proportion of Bangladesh's population had no access to the utility grid, and some of these communities had limited electricity supply from standalone home system installations or mini-grid networks. While many homes had individual solar house systems (SHS), they were of limited capacity and could not power large devices like televisions.

The deployment of mini grids was limited by the need for large upfront capital expenditures. In 2014, SOLshare, a Bangladesh-based start-up company entered a joint venture with German consulting company MicroEnergy International GmbH to address the issue. SOLshare introduced an Information and Communication Technology (ICT)-enabled peer-to-peer electricity trading network that connects houses with SHS to other houses in the vicinity that do not have electricity. The system spreads the costs of the SHS over larger use volumes, increases the capacity utilisation of SHSs by 30%, and reduces the annual energy access cost by at least 25% compared to a business-as-usual scenario while providing more people access to electricity.

SOLshare implemented a pilot project at Shariatpur village in Bangladesh, with the help of its implementation partner, the NGO UBOMUS, the financing partner IDCOL, and the research partner United International University-Centre for Energy Research. The company installed a bi-directional DC electricity meter called a "SOLbox" in every household in the village, which measures power inflows and outflows and enables peer-to-peer electricity trading with mobile money payments.

The meters also help SOLshare with smart grid management, remote monitoring, and data analytics.

SOLbox has created a DC smart grid by connecting a solar home system or battery through the SOLbox with other SOLboxes in nearby homes or businesses. Users can even monitor their electricity trading portfolio through a mobile application called the SOLapp, enabling them to connect to hundreds of other households.

With the success of their pilot project, SOLshare implemented the system in other villages across Bangladesh. As of 2022, the system had been implemented to serve six million households and has impacted as many as 25 million people. SOLshare is expected to operate more than 20,000 nano grids by the end of the year 2030, supplying electricity to more than 1,000,000 customers in Bangladesh and interconnecting them with the national utility grid network through a single point of common coupling.

In recognition of such efforts, SOLshare won several awards, including 'World's Best Energy Startup' by the Free Electrons energy accelerator programme in 2018, the 2020 Global Final at innoEnergy's 'The Business Booster', and 'MIT Solver' under SOLVE's 2020 Global Challenges for Good Jobs and Inclusive Entrepreneurship+.

#IDEASTHATHAVEWORKED: SOLAR IMPACT STORIES FROM AROUND THE GLOBE

SCALING ROOFTOP SOLAR IN VIETNAM

According to the 2018 Vietnam Electricity (EVN) Annual Report, energy demand was predicted to increase by 8% per annum between the years 2021 and 2030. To meet this demand, the country had to install 60,000MW of electricity generation capacity by 2020, 96,500MW by 2025, and 129,500MW by 2030 to meet such projected demand.

The Vietnamese Government decided to promote renewable energy installations in the country through attractive feed-in-tariffs, especially in the roof-top solar segment. Many investors also focused on the rooftop solar segment, since this segment offered flexible installation time frames and availability of investment capital options. Further, rooftop installations attracted the attention of industries due to self-consumption and trade alternatives, especially since the average power price in Vietnam rose by 8% in 2019, as compared to the previous year.² Rooftop solar PV was considered a viable investment option due to a confluence of factors working in its favor.

The government had offered a feed-in-tariff (FIT) of 8.38 US cents/kWh, for a tenure of 20 years, for projects commissioned by 31 December 2020. The installation companies had to comply with the EVN grid codes, and to obtain required licenses prior to installation. EVN was responsible for signing the Power Purchase Agreements (PPAs), supplying and installing 2-way meters, calculating the power production and export and making periodic payments.

The optimal financing model for Vietnam was considered to be equity for the first 5-10MW, and then getting lenders involved once scalability and track record of the project developer was proven, Vietnam installed more than 9.0GW

of rooftop solar in year 2020, of which 6.1GW was commissioned in December 2020 alone, shortly before the feed-in-tariff scheme was set to end. According to the state-owned Electricity of Vietnam (EVN), approximately cumulative 10GW of rooftop solar was installed by September 2021, accounting for 10% of the total renewable energy capacity installed in the country.

Following this accomplishment, the German Development Cooperation Agency (GIZ) and the Electricity and Renewable Energy Authority (EREA) of the Ministry of Industry and Trade (MoIT), Vietnam, partnered to implement the “Commercial and Industrial Rooftop Solar” (CIRTS): a rooftop solar project in Vietnam’s commercial and industrial sectors, which was to be completed by year-2025. Through the CIRTS project, the partners aimed to conduct a gap analysis for technical rules and standards for the grid integration of rooftop solar, strengthen EVN’s

operational capacity for technical and administrative adaptation of power supply activities, and improve access to knowledge for stakeholders concerned.

