



# THE SOLAR HUB

## BRIDGING THE ENERGY GAP: ACCELERATING SOLAR ADOPTION WITH STORAGE

Co-Host



In collaboration with



11 November 2024 | 3:45 PM - 5:00 PM AZT

Baku, Azerbaijan

**Objective**

The session will discuss the critical role of short and medium duration Energy Storage Systems (ESS) and Long Duration Energy Storage (LDES) with a focus on unique regional context and needs. It will also delve into the key barriers and recommendations to boost solar project deployment in Least Developed Countries (LDCs) and Small Island Developing States (SIDs).

The session will involve discussions on below mentioned topics:

- Analyse the current landscape of ESS, LDES and their integration with solar projects.
- Identify key enablers and barriers for adoption of ESS in different regions and contexts, with a special focus on ISA members.
- Develop and evaluate technology prioritization framework for the deployment of ESS, based on applications.
- Case studies and learnings for technology deployment.

<p><b>Background &amp; Rationale</b></p>	<p>As the global shift towards sustainable energy gains momentum, versatile energy storage solutions are crucial. Solar energy adoption is a prominent global trend, and ESS enable expanded solar utilization. However, the intermittent nature of solar generation necessitates robust storage integration to ensure grid stability, enhance energy access, and optimize the use of renewable resources.</p> <p>The objective of the storage initiatives under ISA’s programme on ‘Scaling Solar E-Mobility &amp; Storage’ is to support the creation of an enabling ecosystem for energy storage and to scale up the uptake of solar energy in ISA member countries. ISA focuses on diverse energy storage technologies, including batteries, compressed air, gravity, and pumped hydro. It assesses common concerns like efficiency, safety, reliability, and recyclability. ISA plans to evaluate the compatibility of these technologies with solar energy under various use case scenarios. It supports member countries in shaping policies and regulatory frameworks for faster energy storage adoption. Going forward, ISA envisages to support pilot projects implementation in member states.</p> <p>Currently, short and medium duration ESS are integrated into global electrical grids and infrastructure. Despite their widespread use, these have scope for improvement in safety, storage duration, and lifespan related aspects.</p> <p>Long-duration energy storage (LDES) offers extended storage capabilities ranging from hours to months or even seasons. For developing nations, deploying LDES technologies, like green hydrogen, pumped hydro etc, is essential for unlocking the full potential of solar energy and facilitating the integration of renewable sources into the grid.</p> <p>The LDCs and SIDs face unique challenges in harnessing solar energy due to grid infrastructure limitations and the need for a reliable power supply. ESS can play a crucial role in addressing these challenges by enabling grid integration, enhancing energy access, and improving energy security.</p> <p>In this context, ISA is conducting a study: ‘Prioritization Framework for Energy Storage System for Accelerating Solar Project Deployment in LDCs and SIDs’. This study will help identify suitable countries for solar-integrated energy storage implementation.</p> <p>The event is organized in collaboration with the Clean Energy Ministerial (CEM) that hosts the CEM Supercharging Battery Storage Initiative (SBSI) launched at COP 28 to boost battery storage deployment, reduce technology cost through international cooperation and to build a diversified, sustainable, responsible, secure and transparent supply chain. The CEM SBSI Initiative is launching at COP29 the Case Study Report “Battery Storage unlocked: Lessons learned from Emerging Economies” that showcases lessons learned and shares best practices for accelerating battery energy storage systems (BESS) in emerging economies.</p>
<p><b>Session Lead</b></p>	<p>Dr Mridula Bharadwaj, Capacity Building Specialist and Programme Lead – Green Hydrogen, Storage, Solar E- Mobility, International Solar Alliance (ISA – ADB TA)</p>

<b>Agenda</b>	
<b>Time 75 mins</b>	<b>Speakers</b>
<b>Welcome Address</b> (3 mins)	Joshua Wycliffe, Chief of Operations, ISA
<b>Inaugural Address</b> (3 min)	Jiwan Sharma Acharya, Principal Energy Specialist, ADB
<b>Special Address</b> (5 mins)	Member Country Representative (TBD)
<b>Keynote Address</b> (5 mins)	Jean-François Gagné, Head of CEM Secretariat <i>'Lessons learned from the CEM's Collaborative Efforts on Battery Storage'</i>
<b>ISA Energy Storage Programme Updates</b> (6 mins)	Dr Mridula Bharadwaj, Programme Lead – Storage
<b>ISA Report Launch</b> (2 mins)	<i>Framework for energy storage prioritization to boost solar deployment in LDCs and SIDS</i>
<b>Panel Discussion</b> (45 mins) <b>Moderator:</b> Julia Souder, Executive Director, Global Long Duration Energy Storage Council	<b>Panellists</b> <ol style="list-style-type: none"> <li>1. Dr. Rashi Gupta, Founder and Managing Director, Vision Mechatronics Private Ltd (<i>in-person</i>)</li> <li>2. Dr Arunabha Ghosh, Founder-CEO, Council on Energy, Environment and Water (<i>in-person</i>)</li> <li>3. Dr. Amit Jain, Senior Energy Specialist, World Bank (<i>virtual</i>)</li> <li>4. Ayush Misra, CEO and Co-founder, Amperehour (<i>virtual</i>)</li> <li>5. Qingyu Zhao, Energy Specialist (Energy Storage), Asian Development Bank (<i>virtual</i>)</li> <li>6. Colin Steley, Founder and Chief Sustainability Officer, Stratcon (<i>virtual</i>)</li> </ol>
<b>Audience interaction and way forward</b> (5 mins)	<b>Moderator</b>
<b>Vote of Thanks</b> (1 min)	Ramesh Kumar Kuruppath, Chief of Unit - PPIC, ISA

## Speaker Bio

### 1. Jean-François Gagné, Head of CEM Secretariat



Jean-François Gagné has been appointed as the new Head of the Clean Energy Ministerial Secretariat, supporting international collaboration to promote policies and programmes that advance clean energy technology, to share lessons learned and best practices, and to encourage the transition to a global clean energy economy.

Upon his appointment, Jean-François said “I am greatly honoured to have the opportunity to contribute to the CEM’s mission, and look forward to working with CEM members and our international partners to accelerate the transition to a clean energy future”.

A Masters of Mechanical and Aerospace Engineering graduate, Jean-François has over 20 years of experience in varying fields touching transportation, energy and environment protection.

He started his career in the aerospace industry, and then moved to the public sector to lead transportation, energy and environmental technology programmes. He provided technical and policy advice to the Canadian Armed Forces, the Canadian Coast Guard, the Department of Natural Resources, and managed multiple programmes supporting the sustainable development objectives of the Canadian Government. He then spent 5 years leading the International Energy Agency’s collaborative work programme on sustainable energy technologies, policies and strategies.

Before coming to the CEM Secretariat, JF was executive Director of International Affairs for Natural Resources Canada, developing and implementing Canada’s global energy engagement strategy, managing bilateral and multilateral collaboration mechanisms, and representing Canada as lead energy negotiator.

### 2. Dr Mridula Bharadwaj, Programme Lead – Storage



Dr. Mridula Dixit Bharadwaj is a Capacity Building Specialist at the International Solar Alliance under the ISA-ADB Technical Assistance Program. She is currently leading ISA Programs related to Green Hydrogen, Solar Electric Mobility, and Storage. Dr. Bharadwaj holds a Post Doctorate in Materials Science and Engineering from the University of Pittsburgh, USA, and a doctorate in rechargeable battery systems from Bangalore University. She has more than 28 years of research experience in batteries, EV, and materials science domains. Some of the academic recognitions include the Best Research Paper Award in the Material Science Category by the Microscopy Society of America. Prior to ISA, she worked with the United States Steel Corporation, General

Motors (R&D), and a technology-policy think tank as lead researcher and Section Head. She has participated in several government committees on EV and storage including the National Rare Earth Expert Committee of NITI Aayog, India. Dr. Bharadwaj has several research publications in international journals including a US patent related to automotive corrosion prevention.

### 3. **Julia Souder, Executive Director, Global Long Duration Energy Storage Council**



Julia Souder is a strategic executive with over 20 years of expertise in the energy and environmental sectors as a coalition builder, change maker, and motivator for inclusive implementation. She is a long-time advocate of clean energy technologies and equitable transitions. Souder is the Chief Executive Officer (CEO) of the LDES Council, a global non-profit working to accelerate decarbonization through the acceleration of long-duration energy storage (LDES). As CEO, she leads strategy and vision to enable the advancement and scale of LDES deployment in the energy transition worldwide. In addition, she serves as the Chair of the Global Renewables Alliance, of which the LDES Council is a founding member, and sits on the Board of the Keystone Policy Center.

Previously, Souder was the President and Founder of JAS Energies, a clean energy and grid planning consultancy. She was also a director at the Natural Resources Defense Council, where she oversaw energy policy creation and implementation with a focus on grid operations and transmission planning. She has also worked in multiple roles at the U.S. Department of Energy and served as Director of Intergovernmental Relations for the North American Electric Reliability Corporation and as a Project Developer for Clean Line Energy Partners.

Souder earned a Masters of Public Administration from the University of Southern California and a Bachelor's in Political Science and International Relations from Oregon State University.

### 4. **Dr. Rashi Gupta, Founder and Managing Director, Vision Mechatronics Private Ltd**



Dr. Rashi Gupta embarked on a transformative journey with a revolutionary vision to reshape the energy technology landscape, particularly in the realm of energy storage applications. A pioneering force in the domain of Advanced Cell chemistry within the Lithium Storage Batteries sector, she has emerged as an indomitable presence. Her voyage toward innovation led her to conceptualize and produce the "World's Smartest Lithium Battery" right here in India, a feat that earned her the endearing moniker 'Batterywali of India'. As the visionary Founder and Managing Director of Vision Mechatronics Private Ltd, she remains steadfast in her commitment to steer the vanguard of Renewable Energy, Robotics, and Energy Storage technology.

Dr. Gupta has not only pioneered technological advancement but has also etched her name prominently within India's Renewable Energy Sector. Recognized as Asia's Most Influential Woman in Renewable Energy (2020) and bestowed with the "Corporate Guru World Award 2021" for her outstanding contributions to SDG5 & SDG7, she is an unwavering advocate of Gender Equality and Women Empowerment on a global scale. Her resolute dedication to sustainable development, with a focal point on SDGs 5, 7, and 13, has earned her accolades such as the "Global Women Leadership 2021" and her inclusion among the inaugural "First 50 Women in STEM by CII 2021".

Dr. Gupta's ascendancy continues to soar as she secures her place among the "Top 40 Global Women leaders in Energy Storage 2022". Her profound impact on the CleanTech arena has been recognized with the prestigious "Visionary CleanTech Disruptor (Tony Seba Distinction) Award 2022". Technology Trailblazer 2024 by World Resources Institute, & Women in Power 2024 by India Smart Grid Forum 2024 for her contributions in Energy Storage Sector.

Her influence reverberates on an international scale as a Council Member of the Council of Engineers on the Energy Transition (CEET), United Nations. Dr. Gupta champions "Energy justice" and "Energy equality" through pioneering initiatives like rural electrification, thereby ensuring equitable access to clean and sustainable energy for rural schools in India. A standout example is the transformation she has brought to a primary school in Katavaram, Andhra Pradesh.

Beyond her visionary achievements, Dr. Gupta is actively involved in a multitude of strategic roles:

- Committee Member of the Bureau of Indian Standards (BIS) for Batteries, Energy Storage, and E-Mobility.
- Member of the International ElectroTechnical Commission (IEC).
- Committee Member of UL (Underwriters Laboratory).
- Committee Member of the National Energy Storage Committee at FICCI.
- Chairperson for the Energy Storage Theme at the International Solar Energy Society e.V. (ISES) for SWC2021.
- Chair of the Task Force for Energy Storage & Smart Energy at the CleanTech Business Club.
- Chairperson of the Women's India CleanTech Business Club.
- Vice Chair for India at the CleanTech Business Club.
- Advisor for Energy Storage at the India Smart Grid Forum (ISGF).
- Committee Member of IEEE-GESI (Gender Equality and Social Inclusion).
- Committee Member for Women in Renewable Energy at the Ministry of New & Renewable Energy (MNRE).
- A Rajyoga Practitioner for more than a decade.

Dr. Rashi Gupta's journey is a testament to her unwavering commitment to innovation, sustainability, and transformative change. Through her endeavors, she has not only propelled her company but also contributed significantly to the global pursuit of sustainable energy solutions, as exemplified by her association with the United Nations-CEET.

## 5. Dr Arunabha Ghosh, Founder-CEO, Council on Energy, Environment and Water



Dr Arunabha Ghosh is an internationally recognised public policy expert, author, columnist, and institution builder. He is the founder-CEO of the Council on Energy, Environment and Water, and has led CEEW to the top ranks as one of Asia's leading policy research institutions and among the world's 20 best climate think-tanks. He played a formative role in creating the International Solar Alliance, and was a founding board member of the Clean Energy Access Network. Co-author/editor of four books and with experience in 52 countries, he previously worked at Princeton, Oxford, UNDP (New York), and WTO (Geneva). The Asia Society honoured him with the 2022 Asia Game Changer Award, for his and CEEW's "incredible work, which is making a real difference for India and for the planet".

Arunabha advises governments, industry, civil society, and international organisations around the world. He co-convoked the Our Common Air Commission. He served on Government of India's G20 Finance Track Advisory Group and advised the Sherpa Track for India's G20 Presidency in 2022-23. In 2022, the UN Secretary-General appointed him to the High-level Expert Group on the Credibility and Accountability of Net-Zero Announcements by Non-State Actors. Dr Ghosh is currently Vice-Chair of the UN Committee for Development Policy, having been first nominated to the UNCDP by the UN Secretary-General in 2018. Arunabha is a member of several international expert advisory groups: Global Commission on the Economics of Water; High-Level Group of Economists, constituted by the French president for the One Planet Lab; and the Senior Consultative Group for the U.S. Department of State's Energy Transition Accelerator. In 2020, the Government of India appointed him Co-Chair of the energy, environment and climate change track for India's Science, Technology and Innovation Policy (STIP2020). He sits on the Oversight Committee of the Exploring Climate Cooling Options programme of the UK's Advanced Research and Invention Agency.

He co-chaired the World Economic Forum's Global Future Council on Clean Air, having previously served on the Global Future Council on Energy. He serves on the Board of ClimateWorks Foundation. A frequent speaker and adviser to governments, industry and international organisations, he writes monthly columns across various platforms, has hosted or featured in several documentaries, and his 2019 TED Talk on air quality (Mission 80-80-80) has crossed 270,000 views. He was a World Economic Forum Young Global Leader. He holds a D.Phil. from Oxford.

## 6. Dr. Amit Jain, Senior Energy Specialist, World Bank



Amit has a Ph.D. in solar, Fulbright Scholar at NREL, USA and Chevening Fellow at King's College, London. He works with the World Bank and is leading a \$2 billion renewable portfolio in India, Bangladesh and Maldives. It includes REWA and Charanka solar park, integrated by PM Shri Narendra Modi. The project has received the

World Bank Group President Award for innovation and excellence and included in the Prime Minister's book 'A Book of Innovation: New Beginnings'.

His previous assignments include the International Renewable Energy Agency (IRENA), Asian Development Bank (ADB) and the Clinton Foundation. Amit has authored two books on climate change policy and waste to energy and has several international peer-reviewed journal publications. His hobbies include scuba diving, badminton, and outdoor sports.

#### **7. Ayush Misra, CEO and Co-founder, Amperehour**



Ayush is the Co-founder and CEO of AmpereHour Energy, a leading Energy storage technology provider currently deploying ~1 GWh in South Asia, Middle East and Africa. He is an IIT-Bombay graduate with a specialisation in Li-ion batteries. Prior to founding AmpereHour, he was part of the initial team at one of India's leading Solar developers pioneering Solar power under an opex model for Corporate clients.

#### **8. Qingyu Zhao, Energy Specialist (Energy Storage), Asian Development Bank**



Qingyu Zhao is responsible for knowledge product in BESS in ADB, which focuses on the most cutting-edge battery technologies on the market. He also supports in ADB BESS projects, establishing dialogues with customers' technical executives and responsible for BESS related internal training.

#### **9. Colin Steley, Founder and Chief Sustainability Officer, Stratcon**



With over 20 years of experience in the development, energy, and sustainability sectors, Colin is the founder and Chief Sustainability Officer at Stratcon.ph, an energy transition services and solutions company and registered ESCO in the Philippines. As the only Board of Trustee on the Philippines Solar and Storage Energy Alliance and the Philippine Energy Alliance, Colin has developed partnerships with key energy clients covering different market segments delivering advanced cost effective solutions to see a stable, resilient and cost effective energy transition.



**Address: Location of the session**

The Solar Hub - ISA Pavilion

H7, Blue Zone

Baku Stadium

The Blue Zone is within the Baku Stadium. You can find Baku Stadium on the map.

Within the Blue Zone, our pavilion is in the H Aisle – H7.