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Join global thought leaders driving green energy and clean transportation.  
 Let's together celebrate the movement that can transform the planet.



**Start-up Pavilion**

DELECTRIK emote ELECTRIC 10log9 nanospan OXTO ENERGY PIXII Santitas SKYCHARGE

**Supporting Partners**

ACMA Alliance for Rural Electrification BEZA Battery Brunch BVES CESA CLEAN CNESA EASA Energy Storage Europe ESA Energy Storage Association EUROBAT FCHEA GREEN HYDROGEN COALITION IESA IESA igof ISGF IEEE SA ILZDA IET Innovation Norway LONDON DURATION ENERGY STORAGE NASEFI NEDO NMIMS AAL INNOVATION CENTRE BSA Chia SEINDIA swissnex wbcscd

75+ industry leaders from around the world

20,000+ international attendees & 30+ global partners

Discussions focussed on Energy Storage, Green Hydrogen and e-mobility

**Start-Up Partners**  
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# Full Program World Energy Storage Day, (WESD) – Global Conference & Expo, 22<sup>nd</sup> September 2021

Australia	Japan	India	Central European Time	US EST	Hall 1	Hall 2	Hall 3	Hall 4
10:30:00	09:30:00	06:00:00	02:30:00	20:30:00				
11:00:00	10:00:00	06:30:00	03:00:00	21:00:00	R1- Stationary			
11:30:00	10:30:00	07:00:00	03:30:00	21:30:00				
12:00:00	11:00:00	07:30:00	04:00:00	22:00:00	Break			
12:30:00	11:30:00	08:00:00	04:30:00	22:30:00	R1 - Emobility			
13:00:00	12:00:00	08:30:00	05:00:00	23:00:00				
13:30:00	12:30:00	09:00:00	05:30:00	23:30:00				
14:00:00	13:00:00	09:30:00	06:00:00	00:00:00	Global Keynote			
14:30:00	13:30:00	10:00:00	06:30:00	00:30:00	R1 - Green Hydrogen	R2- Stationary		
15:00:00	14:00:00	10:30:00	07:00:00	01:00:00				
15:30:00	14:30:00	11:00:00	07:30:00	01:30:00	Break	Break		
16:00:00	15:00:00	11:30:00	08:00:00	02:00:00				
16:30:00	15:30:00	12:00:00	08:30:00	02:30:00	R1-Manufacutring & Innovation	R2 - Emobility	Solar + Storage workshop	
17:00:00	16:00:00	12:30:00	09:00:00	03:00:00				
17:30:00	16:30:00	13:00:00	09:30:00	03:30:00	Break	Break		
18:00:00	17:00:00	13:30:00	10:00:00	04:00:00				
18:30:00	17:30:00	14:00:00	10:30:00	04:30:00	R3- Stationary	R2 - Green Hydrogen	EV Infra Workshop	Cleantech Business Forum
19:00:00	18:00:00	14:30:00	11:00:00	05:00:00				
19:30:00	18:30:00	15:00:00	11:30:00	05:30:00	Break	Break		
20:00:00	19:00:00	15:30:00	12:00:00	06:00:00				
20:30:00	19:30:00	16:00:00	12:30:00	06:30:00	R3 - Emobility	R2-Manufacutring & Innovation	ESS Modelling Workshop	Global Startup Showcase
21:00:00	20:00:00	16:30:00	13:00:00	07:00:00				
21:30:00	20:30:00	17:00:00	13:30:00	07:30:00	Break			
22:00:00	21:00:00	17:30:00	14:00:00	08:00:00				
22:30:00	21:30:00	18:00:00	14:30:00	08:30:00	R3 - Green Hydrogen	Recycling Workshop	Energy Access Workshop	
23:00:00	22:00:00	18:30:00	15:00:00	09:00:00				
23:30:00	22:30:00	19:00:00	15:30:00	09:30:00	Break			
00:00:00	23:00:00	19:30:00	16:00:00	10:00:00				
00:30:00	23:30:00	20:00:00	16:30:00	10:30:00	R3-Manufacutring & Innovation		UL Battery Fire in EV & ESS Workshop	
01:00:00	00:00:00	20:30:00	17:00:00	11:00:00		R4- Stationary		
01:30:00	00:30:00	21:00:00	17:30:00	11:30:00	Break			
02:00:00	01:00:00	21:30:00	18:00:00	12:00:00				
02:30:00	01:30:00	22:00:00	18:30:00	12:30:00	Long Duration ESS Workshop	Break	Women in Energy Roundtable	
03:00:00	02:00:00	22:30:00	19:00:00	13:00:00		R4 - Emobility		
03:30:00	02:30:00	23:00:00	19:30:00	13:30:00	Break			
04:00:00	03:00:00	23:30:00	20:00:00	14:00:00				
04:30:00	03:30:00	00:00:00	20:30:00	14:30:00	UAM - Urban Air Mobility Workshop	Break	ESS Projects workshop	
05:00:00	04:00:00	00:30:00	21:00:00	15:00:00		R4 - Green Hydrogen		
05:30:00	04:30:00	01:00:00	21:30:00	15:30:00				
06:00:00	05:00:00	01:30:00	22:00:00	16:00:00				
06:30:00	05:30:00	02:00:00	22:30:00	16:30:00		Break		
07:00:00	06:00:00	02:30:00	23:00:00	17:00:00				
07:30:00	06:30:00	03:00:00	23:30:00	17:30:00		R4-Manufacutring & Innovation		
08:00:00	07:00:00	03:30:00	00:00:00	18:00:00				

**Presenting Partner**



**HALL 1**



**R1**  
**ASIA PACIFIC**



<b>R1 (Australia &amp; New Zealand, Singapore, Philippines, Indonesia, Japan, China, South Korea)</b>	
10:30 - 18:00 ACST    09:30 - 17:00 JST & KST    2:30 - 10:00 CET, Singapore	
<b>Time (ACST)</b> <b>10:30 - 12:00</b>	<b>STATIONARY ENERGY STORAGE SESSION</b>
Moderator	Debi Prasad Dash; Executive Director; India Energy Storage Alliance (IESA)
	Keisuke Torika; Assistant Manager, Energy Storage Group, Energy System Division; Sumitomo Electric
	Matt Stein; Representative; China Energy Storage Alliance (CNESA)
	Hemant Mandal; Upstream Energy Lead, APAC, Infrastructure, International Finance Corporation (IFC)
	Steve Wilson; Technical Director; Aurecon
	Akira Morise; General Manager; Sojitz Corporation
<b>12:00-12.30</b>	<b>BREAK</b>
<b>12:30- 14:00</b>	<b>E-MOBILITY SESSION</b>
Moderator	Dr. Gustav H. Beerel; Country Head-Japan; Customized Energy Solutions
	Peter Tickler; Co-Founder and Head of Product; Grid Cognition
	Zejan Tam; Vice President- Strategy and Business Development; Relectrify
	Gregory Poilasne; Co-Founder, Chairman & CEO; Nuvve
	Kenji Yodese, Manager, Toyota Tusho Co.
<b>14:00 - 14:30</b>	<b>GLOBAL KEYNOTE</b> <b>Dr Rahul Walawalkar, Chair, World Energy Storage Day Global Conference &amp; Expo</b>
<b>14:30 - 16:00</b>	<b>GREEN HYDROGEN SESSION</b>
Moderator	Dr. Satyajit Phadke; Manager R&D; Customized Energy Solutions
	Ohira Eiji; Director NEDO; New Energy and Industrial Technology Development Organization (NEDO)
	Dr. Carsten Schmitt; CEO; thyssenkrupp Uhde Chlorine Engineers (Japan) Ltd.
	Alan Kneisz; Global Business Development Director; Cummins - Hydrogenics
	Attilio Pigneri; CEO; H2U - the Hydrogen Utility™
	Don Owens, CEO of HNO Green Fuels
<b>16:00-16:30</b>	<b>BREAK</b>
<b>16:30-18:00</b>	<b>MANUFACTURING &amp; INNOVATION SESSION</b>
Moderator	Harsh Thacker; Director-Consulting Services; Customized Energy Solutions
	Sanjiva De Silva; Counsellor (Industry, Science, Energy & Resources); Australian High Commission India
	Dr. Avishek Kumar; Co-founder and CEO; V-Flow Tech
	Chris Bandy; Investment and Trade Commissioner South Asia, Government of Western Australia
	Dr. Arvind Muthiah; Strategic Product Specialist; Durapower Holdings Pte Ltd
	Mohan Yellishetty; Co-Founder-Critical Minerals Consortium; Associate Professor, Monash University, Australia

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HALL 2



R2

INDIA, SAARC,  
RUSSIA



<b>IST 9:30-10:00</b>	<b>Welcome note by Ashok Thakur, Chief Editor, ETN, Customized Energy Solutions</b> <b>SPECIAL ADDRESS by Hon'ble Shri Narendra Modi, Prime Minister of India</b> <b>GLOBAL KEYNOTE Dr Rahul Walawalkar, Chair, WESD Global Conference &amp; Expo</b>
<b>10:00 - 11:30</b>	<b>STATIONARY ENERGY STORAGE SESSION</b>
Moderator	Netra Walawalkar; Director; Customized Energy Solutions
	Shri Ghanshyam Prasad; Joint Secretary, Ministry of Power, Government of India
	Praveer Sinha; CEO & MD; The Tata Power Company Limited
	Sumant Sinha; Founder, Chairman & CEO; Renew Power
	Kiran Kumarswamy; VP- Growth; Fluence
<b>11:30-12:00</b>	<b>BREAK</b>
<b>12:00 - 13:30</b>	<b>E-MOBILITY SESSION</b>
Moderator	Pawan Mulukutla; Director-Clean Mobility & Energy Tech; WRI India
	Sadaf Siddiqui; Marketing Manager (IoT, Automotive), Keysight Technologies
	Martin Zierer; Application Manager; Schaltbau GmbH
	Anant Nahata; Managing Director, Exicom
	Vikram Gulati; Country Head & Sr V. P (EA, PR, CSR & CG); Toyota Kirloskar Motor
	Dr. Ashok Saraswat; Head, Advance Battery Engineering; Ola Electric
	Polash Das; Head-EV; CESL (part of The EESL Group of Companies)
<b>13:30 - 14:00</b>	<b>BREAK</b>
<b>14:00 - 15:30</b>	<b>GREEN HYDROGEN SESSION</b>
Moderator	Frank Wouters; Senior Vice President-Energy Transition; Reliance Industries
	Tarun Kapoor; Secretary; Ministry of Petroleum; Government of India
	Kowthamraj V.S.; FEL, World Energy Council
	DMR Panda; General Manager; NTPC
	Manoj Upadhyay; Founder & MD; ACME
<b>15:30-16:00</b>	<b>BREAK</b>
<b>16:00 - 17:30</b>	<b>MANUFACTURING &amp; INNOVATION SESSION</b>
Keynote Speaker	Shri Amitabh Kant; CEO; NITI Aayog
Moderator	Dr Rahul Walawalkar; President & MD; CES & IESA
	Stefan Louis; Chief Executive Officer and Chief Technical Officer; Nexcharge
	Vijayanand Samudrala; President - New Energy; Amara Raja
	Emin Askerov; CEO; RENERA (part of Rosatom)
	Arvind Balaji; Joint Managing Director; Lucas TVS

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**HALL 1**



**R3**

**EUROPE, MIDDLE EAST AND AFRICA**



<b>R3 (Europe, Russia, UK, MEA (Middle East, Africa))</b>	
10:30 - 18:00 CEST    11:30 - 16:00 SAST    12:30 - 17:00 MSK    13:30 - 18:00 UAE    10:30- 15:00 BST	
<b>Time (CEST)</b> <b>10:30 - 12:00</b>	<b>STATIONARY ENERGY STORAGE SESSION</b>
Moderator	Vinayak Walimbe; VP – Emerging Technologies; Customized Energy Solutions
	Gauthier Dupont; Director-Energy Infrastructure; NGK Europe GmbH
	Jacopo Tosoni; Policy Officer; EASE
	Michele Pissarello; Energy Storage Solutions Group, Enel X
	Emanuele Taibi; Power Sector Transformation Strategies; IRENA
<b>12:00 - 12:30</b>	<b>BREAK</b>
<b>12:30 - 14:00</b>	<b>E-MOBILITY SESSION</b>
Moderator	Avanthika Satheesh; Industry Research Manager- Emerging Technologies; CES
	Lars Carlstrom; Founder & Executive Chairman; Italtvolt
	Dr.-Ing. Georg Angenendt CTO; ACCURE Battery Intelligence GmbH
<b>14:00-14:30</b>	<b>BREAK</b>
<b>14:30 - 16:00</b>	<b>GREEN HYDROGEN SESSION</b>
Moderator	Peter Kelly-Detwiler; Consultant ; NorthBridge Energy Partners
	Cornelius Matthes; CEO; Dii Dessert Energy
	Thierry Lieperq; Founder & CEO DH2 energy, President; Soladvent
	Dr. Angela Kruth, Leiterin Materialien für die Energietechnik, Sprecherin und Koordinatorin CAMPFIRE
	Emanuele Taibi; Power Sector Transformation Strategies; IRENA
<b>16:00-16:30</b>	<b>BREAK</b>
<b>16:30-18:00</b>	<b>MANUFACTURING &amp; INNOVATION SESSION</b>
Moderator	Manish Dua, Sr. Analyst, Benchmark Mineral Intelligence
	Bård Karlsen; EVP Operations & Innovation, Morrow Batteries
	Mikhail Nikomarov; Chairman, South African Energy Storage Association (SAESA), Co-founder, Bushveld Energy
	Nechan Naicker; Founder & CEO; The Megamillion Energy Group

(\* ) - Invited

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HALL 2



**R4**  
**UNITED STATES,  
 LATIN AMERICA  
 AND CANADA**



<b>R4 (USA, Canada, Latin America (Brazil, Chile, Argentina))</b>	
11:00 - 15:30 EDT    10:00 - 14:30 CDT    8:00 - 12:30 PDT	
<b>Time (EST) 11:00-12:30</b>	<b>STATIONARY ENERGY STORAGE SESSION</b>
Moderator	Jason Burwin; CEO; ESA Patricia Hoffman; Acting Assistant Secretary; DOE, Office of Electricity Stephen Fernands; President; CES Judith Judson; VP-Regulatory; National Grid Chandrasekhar Govindrajalu; Lead Energy Specialist, Energy Climate Finance; The World Bank
<b>12:30-13:00</b>	<b>BREAK</b>
<b>13:00-14:30</b>	<b>E-MOBILITY SESSION</b>
Chair	Robert Galyen; SAE International Fellow and Battery Standards Steering Committee Chairman NAATBatt International Chairman Emeritus & CTO
Moderator	Steve LeVine; Steve LeVine, Editor; The Electric Vinayak Walimbe; VP – Emerging Technologies; CES Melissa Chan; Director-Grid Solutions and Strategic Partnerships; Fermata Energy Paul Beach; CEO; Octilion Power Systems Oliver Gross; SME Energy Storage; Stellantis
<b>14:30 - 15:00</b>	<b>BREAK</b>
<b>15:00 - 16:30</b>	<b>GREEN HYDROGEN SESSION</b>
Moderator	Frank Wolak; President & CEO; Fuel Cell and Hydrogen Energy Association Fernando De Sisternes; Senior Energy Specialist; The World Bank Rob Harvey; Director-Energy Infrastructure; Hydrogenics/ Cummins Tony Leo; CTO; FuelCell Energy Chris Ball; Head-Product Marketing; Bloom Energy Dr. Sunita Satyapal; Director-EERE's Hydrogen & Fuel Cell Technologies Office, DoE; DOE Pashupathy Gopalan; Director; Ohmium
<b>16:30 - 17:00</b>	<b>BREAK</b>
<b>17:00 - 18:30</b>	<b>MANUFACTURING &amp; INNOVATION SESSION</b>
Moderator	Venkat Srinivasan; Director-Argonne Collaborative Center for Energy Storage Science (ACCESS); ANL Diana Bauer; Acting Deputy Director-Adv Manufacturing; US DOE Tim Holme; Co-founder & CTO; Quantumscope Jim Cushing; General Manager- Energy Storage Solutions; Applied Materials Shirley Meng; Professor- Materials Science & NanoEngineering; University of California San Diego (UCSD) Ash Lazenby; Cobalt Trading / Marketing; Glencore



## WORLD ENERGY STORAGE DAY

Virtual Global Conference and Expo

22 September, 2021  
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HALL 3



# WORKSHOP

# Solar + Energy Storage

## About the Workshop

With the rise of renewable energy, specifically solar the demand for storage solutions is growing rapidly. The future of the energy infrastructure lies in smart storage solutions for diverse market applications including solar shifting, smoothing, and ramp control and grid stability seamlessly combining premium hardware, advanced software and reliable services. With the fast development of mechanical and electro-chemical energy storage technologies, storage can strongly support the transition to solar energy. Energy storage is the missing piece of the energy transition puzzle. As the energy industry warms up to these technologies, utilities, developers, consumers, and power producers across the globe adopting and installing energy storage systems from kW-level to GW level.

In this workshop, global thought leaders and industry stalwarts will present and discuss about technology, applications, and market for solar + energy storage integration. The workshop will cover case studies from rooftop solar to grid scale project and pumped hydro technologies to advanced li-ion and emerging electro-chemical batteries.

## Who Should Attend

- » Renewable energy professionals (solar, wind)
- » Energy storage companies
- » Technology provider, power electronics companies
- » Regulators, policymakers and think-tank

Zones	Australia	Japan	India	Central European time	US EST
Start time	16:30:00	15:30:00	12:00:00	08:30:00	02:30:00
End time	18:00:00	17:00:00	13:30:00	10:00:00	04:00:00

Convenor	Subrahmanyam Pulipaka; CEO; National Solar Energy Federation of India (NSEFI)
Keynote	Ajay Mathur; Director General; International Solar Alliance (ISA)
Moderator	Pranav Mehta; Founder Chairman; National Solar Energy Federation of India
	S.K. Mishra; Director (Power System); Solar Energy Corporation of India
	Kushagra Nandan; Co-Founder and Managing Director; SunSource Energy
	Máté Heisz; Director-Global Affairs; Solar Power Europe
	ISES /APVIA (*)



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HALL 3

**WORKSHOP**

**Electric Vehicle Infrastructure**



**About the Workshop**

In the past decade, global automakers and component manufacturers have shifted their focus to electric mobility and EV charging infrastructure. Charging infrastructure is the backbone of EV adoption in the country. The availability of user-friendly public charging infrastructure is one of the key requirements to drive the electric vehicles market in India. In this regard, the government of India has taken several initiatives to expedite the development of public charging infrastructure across the country. The policies and initiatives such as National Electric Mobility Mission Plan, FAME-I and II, National Mission for Transformative Mobility and Battery Manufacturing, Phased Manufacturing Program, Advanced Chemistry Cell Production Linked Incentive Scheme have been devised to give the required boost to the sector.

WESD Electric Vehicle Infrastructure workshop will be bringing together global experts and practitioners in this exciting area to share their experience and vision for a sustainable future.

Zones	Australia	Japan	India	Central European time	US EST
Start time	18:30:00	17:30:00	14:00:00	10:30:00	04:30:00
End time	20:00:00	19:00:00	15:30:00	12:00:00	06:00:00

Convenor	Dr. Srinu Venu Uppuluri; Vice President; SB Energy
	Sandeep Bangia; Head - EV, HA & ESCO Business; Tata Power
	Awadhesh Jha, Executive Director; Fortum Charge & Drive India Pvt. Ltd.
	P. Manikandan; Chief Technology Officer; Hero Lectro Mobility
	Dr. Sajid Mubashir, Scientist G, (EV_R&D Mission   EV_Charging_Standards), Dept. Science & Technology (DST), Govt. of India
	Reji Pillai; President, ISGF; Chairman, Global Smart Energy Federation



*Leading Together The CleanTech Decade!*



## CleanTech Business Forum

at World Energy Storage Day

22 September 2021 / 14:00 – 15:30 (IST), 10:30 - 12:00 (CEST)

RSVP: [claudia@cleantechbusiness.club](mailto:claudia@cleantechbusiness.club)



*Honorary Chair* - Prof. Eicke R. Weber, Chairman at European Solar Manufacturing Council; Former Director, Fraunhofer ISE, Freiburg; CBC Chair of World CleanTech Awards

*Chair* - Mani Khurana, Senior Energy Specialist and Task Team Leader at the World Bank; Head the World Bank's Battery Storage Program in India

*Lead Moderator* - Dr. Rashi Gupta, Managing Director at Vision Mechatronics; CBC Vice-Chair for India & Chair of CBC Energy Storage Hub

*Thought-Leader Panelists*

- Zineb Seghrouchni, Hydrogen Origination Manager at John Cockerill Group; CBC Chair of Upstream Hub
- Jean-Pascal Pham-Ba, Co-founder and CEO, SCALE.NGO & Mentors; CBC Chair of Financial & Investor Hub
- Harsh Chhaajer, Renewable Energy Industry Leader at Marsh India Insurance Brokers
- Sandeep Chopra, Founder, CEO at Metafin Cleantech Finance Pvt Ltd (invited)
- Tomasz Slusarz, CleanTech Business Club Founder & Vision Streamliner

*#TogetherWeAreStronger*



HALL 4

Australia	Japan	India	Central European Time	US EST
6:30:00 PM	5:30:00 PM	2:00:00 PM	10:30:00 AM	4:30:00 AM
8:00:00 PM	7:00:00 PM	3:30:00 PM	12:00:00 AM	6:00:00 AM



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HALL 3



# WORKSHOP

## Energy Storage Modeling: From Planning to Operations



**About the Workshop**

As more and more renewables are getting integrated grid operations are becoming complex. Energy storage is a versatile technology that can bring needed flexibility. Storage can serve as peaking capacity, can provide ancillary services as well as operate as a transmission and distribution asset. However, energy storage is an energy-limited resource that creates a need for careful modeling to optimize the operation and maximize the value of the asset. Powered by CES' proprietary modeling platform CoMETS, this workshop brings practitioners approach to modeling and share examples of energy storage modeling for planning, investment decisions as well as operations.

**The workshop will cover**

- » Planning with production cost modeling:
- » Modeling for investment decisions:
- » Optimization in storage daily operations:

**Who should Attend?**

Electric industry professionals with experience in system planning processes, project developers, investors as well as financial analysts considering storage as an investment option.



**Workshop Structure**

Zones	Australia	Japan	India	Central European time	US EST
Start time	20:30:00	19:30:00	16:00:00	12:30:00	06:30:00
End time	22:00:00	21:00:00	17:30:00	14:00:00	08:00:00

Moderator	Vinayak Walimbe; VP – Emerging Technologies, Customized Energy Solutions
	Jatin Sarode; Senior Analyst; Customized Energy Solutions
	Vijay CS; Senior Analyst; Customized Energy Solutions



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# GLOBAL START-UP SHOWCASE



SMART ENERGY



ENERGY STORAGE



ELECTRIC MOBILITY



ENERGY ACCESS



GREEN HYDROGEN



IOT

## Global Start-up Showcase Program

16:00 – 20:30 IST || 20:00 – 12:30 ACST || 19:00 - 11:30 JST & KST || 12:30 – 17:00 CET

Welcome Remarks by Mr. Debi Prasad Dash; Executive Director; India Energy Storage Alliance (IESA)

Time	Session 1
16:00 – 16:10 IST	Opening Keynote: John Wood, Director, NOAB Ventures
16:10 – 17:00 IST	Start-up Pitch: <ul style="list-style-type: none"> <li>Emote Electric Private Limited</li> <li>Log 9 Materials Scientific Private Limited</li> <li>Nanospan India Pvt Ltd</li> <li>NavAlt Solar and Electric boats Pvt. Ltd.</li> </ul>
Time	Session 2
17:00 – 17:10 IST	Keynote: Rakesh Malhotra, Founder, SAR Group
17:10 – 18:00 IST	Start-up Pitch: <ul style="list-style-type: none"> <li>Sand Bird</li> <li>Delectrik Systems Pvt Ltd</li> <li>Indigenous Energy Storage Technologies Pvt. Ltd .</li> <li>KleanHeat</li> </ul>
Time	Panel Discussion:
18:00 – 18:30 IST	Topic: “Creating an enabling environment to support clean tech and mobility start-ups” <ul style="list-style-type: none"> <li>Sandeep Tandon, National Programme Manager, FLCTD, UNIDO</li> <li>Anupam Jalote, CEO, iCreate</li> <li>Karthik Chandrashekhar, Partner, Sangam Venture</li> </ul>
Time	Session 3
18:30 – 19:20 IST	Start-up Pitch: <ul style="list-style-type: none"> <li>OXTO Energy</li> <li>Chargetrip</li> <li>Skycharge</li> <li>Pixii AS</li> </ul>
Time	Session 4
19:20 – 19:30 IST	Keynote: Danny Kennedy, CEO, New Energy Nexus
19:30 – 20:30 IST	Start-up Pitch – Session 4 <ul style="list-style-type: none"> <li>Helix Power Corporation</li> <li>Solaires Enterprises Inc</li> <li>Storworks</li> <li>ElectricFish Energy Inc.</li> <li>Storage Power Solutions Inc</li> </ul>
20:30 – 20:40 IST	Keynote: Robert Pedraza, Ex-President, EnerBlu
<b>Closing Remarks by Dr Rahul Walawalkar, President &amp; MD, India Energy Storage Alliance (IESA)</b>	

\*Joining by invitation only



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HALL 3

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Alliance for Rural Electrification  
Giving's Light for Progress

# WORKSHOP

## Energy Access: Energy Storage Linked Challenges in Clean Energy Mini-grids



### About the Workshop

Clean energy mini-grids are paving the way for development in remote areas and helping achieve the critical goal of Universal Electricity Access across the world. Due to their compact nature and innovative service models, mini-grids are the preferred model of rural electrification in most parts of the world. But the very reason that they are suitable for remote and far-flung areas for electrification also puts additional thrust on technology, in terms of the challenges mini-grid technology must address while providing 24x7 clean electricity to local communities. Every mini-grid geography brings up its unique challenges. Therefore, at the World Energy Storage Day 2021, we are presenting a unique opportunity for the mini-grid developers to share the key challenges they face on the energy storage front – both at the time of commissioning and during its operation of the energy storage systems in their mini-grids.

### The workshop will cover

- » Energy storage technology compatibility with inverter technology, battery management system, and overall mini-grids system compatibility
- » Energy storage technology sulphation issues (in case of lead-acid technology) and managing heat dissipation (in case of lithium-ion)
- » After-sales services issues
- » Operational issues related to coupling productive loads with mini-grids solutions
- » Innovative financial models for lithium-ion battery energy storage solutions
- » Environmental sustainability of energy storage systems after their usage

**Free to attend**

Australia	Japan	India	Central European Time	US EST
10:30:00 PM	9:30:00 PM	6:00:00 PM	2:30:00 PM	8:30:00 AM
12:00:00 AM	11:00:00 PM	7:30:00 PM	4:00:00 PM	10:00:00 AM

Convenor	Nitin Akhade, Manager, Micro, Customized Energy Solutions
Opening Remarks	Claudio Pedretti, President, Alliance for Rural Electrification (ARE)
Keynote	Dr Imre Gyuk, Director, Energy Storage Research, Office of Electricity, DOE
	Manoj Sinha; Founder and CEO, Husk Power Systems
	Jens Jaeger, Director of Policy &, Business Development, Alliance for Rural Electrification
	Benjamin Dumond; Head-Operation & Technical; ENGIE PowerCorner



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HALL 2

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**WORKSHOP**

**Advancing the Nexus of Energy Access and Circularity**



**About the Workshop**

This workshop will cover need of battery recycling, recycling technologies and global practices. The workshop will also present the conclusions of the report “Closing the Loop on Energy Access in Africa” to address energy access and end of life management in Africa based on analysis and consultation with stakeholders in Africa and globally. The report was a product of collaboration between the Global Battery Alliance (GBA) - World Economic Forum and the Faraday Institution within the framework of the World Bank’s Energy Storage Partnership and with the support of Vivid Economics and Öko Institut, Berlin.

**Key findings to be presented**

- » Why batteries are critical to supporting sub-Saharan Africa’s energy access goals
- » Why meeting the growing battery demand at a lower economic, environmental, and human cost will require high-quality recycling and repurposing (currently, non-existent across most African countries)
- » Why high-quality recycling and repurposing also create additional benefits, through employment and upskilling opportunities and
- » Key recommendations

**Free to attend**

Australia	Japan	India	Central European Time	US EST
11:00:00 PM	10:00:00 PM	6:30:00 PM	3:00:00 PM	9:00:00 AM
12:30:00 AM	11:30:00 PM	8:00:00 PM	4:30:00 PM	10:30:00 AM

Convenor	Tarek Keskes, Energy Specialist - Energy Sector Management Assistance Program (ESMAP), The World Bank
	Alan Ferguson, Commercial VP, Battery Supply, North America – Li-Cycle
	Jeff Spangenberg, Director, Recell Center And Materials Recycling Group Leader, Argonne National Laboratory, USA
	Mathy Stanislaus, Director, Public Policy and Engagement, Global Battery Alliance Secretariat



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HALL 3



# WORKSHOP

## Battery Fires in Electric Vehicles and Energy Storage Systems



### About the Workshop

This workshop will focus on addressing a few different aspects related to battery fire safety in electric vehicles (EVs) and stationary grid energy storage systems (ESS). In the past decade, the growth in the EV and ESS sectors has been exponential. The availability of various battery chemistries and the awareness in reducing the carbon footprint and increasing environmental cleanliness has led to the large investments in these two sectors. However, due to the nature of the battery chemistries being used, the challenges with respect to safety still exist.

Speakers at this workshop will discuss the growth of the EV and ESS sectors and the safety challenges faced by these sectors globally as well as in regional contexts. References to existing standards and research carried out in the area of characterizing fire and thermal runaway experimentally and with modeling methods will be presented.

Australia	Japan	India	Central European Time	US EST
00:30:00-02:00:00	23:30:00-01:00:00	20:00:00-21:30:00	16:30:00 - 18:00:00	10:30:00 -12:00:00

Topic	Speaker
Welcome & Introduction to the Workshop	Dr. Judy Jeevarajan, Vice President, Research Electrochemical Safety Research Institute Underwriters Laboratories Inc.
Growth of EV and ESS globally and in India	James Trudeau, Manager, Market Development Underwriters Laboratories
Challenges of Stationary ESS and gaps in Standards – U.S. Perspective	Leo Subbarao Fire Department City of New York (Retired)
Challenges for Fire Services in India	Dr. D. K. Shami, Fire Advisor Government of India
Experience, learnings and challenges with EV battery fires	Chetan Maini, Co-Founder and Chairman SUN Mobility
Modeling and simulation of thermal runaway and fire in lithium-ion batteries	Dr. O.A. ('DK') Ezekoye, W.R. Woolrich Professor Dept. of Mechanical Engineering University of Texas, Austin
Research studies on lithium-ion battery fire characterization	Dr. Judy Jeevarajan, Vice President, Research Electrochemical Safety Research Institute Underwriters Laboratories Inc.
Brief about UL Study: 'Battery Fires: Study of Response Strategy of Indian Fire Services'	Kanarindhana Kathirvel (Rindhu) , Senior Project Management Specialist Electrochemical Safety Research Institute Underwriters Laboratories Inc.
Final Thoughts, Comments and Wrap-up	Panel



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# WORKSHOP

## Long Duration Energy Storage



### About the Workshop

From materials to markets, innovations at all stages will be required to deploy the next generation of long-duration energy storage systems. The Department of Energy (DOE) representatives along with industry leaders will hold mini panels on foundational innovations, technologies beyond lithium-ion, and the process from scaling to commercialization. This workshop will serve as a guide to the next generation of energy storage.

This workshop will include:

- » Understanding of battery fire safety, especially in the EV and ESS sectors
- » Safety hazards and challenges of lithium-ion batteries
- » Modeling and simulation of lithium-ion battery fires
- » Battery fire characterization

Australia	Japan	India	Central European Time	US EST
02:30:00-04:00:00	01:30:00-03:00:00	22:00:00-23:30:00	18:30:00-20:00:00	12:30:00-14:00:00

Topic	Speaker Name
Storage Earthshot and Need for Long Duration Energy Storage	<ul style="list-style-type: none"> <li>• Eric Hsieh, Director- Grid Systems and Components, U.S. Department of Energy</li> </ul>
Foundational Innovations to Accelerate Long Duration Storage	<ul style="list-style-type: none"> <li>• Dr. John S. Vetrano, Program Manager, Mechanical Behavior And Radiation Effects Technology Coordination Program, U.S. DoE</li> <li>• Kristin Persson, Lead Scientist, Liquid Solvation Science Thrust, JCESR, LBNL</li> </ul>
Long Duration Technologies Beyond Lithium	<ul style="list-style-type: none"> <li>• Dr. Scott Litzelman, Program Director, Advanced Research Projects Agency-Energy (ARPA-E)</li> <li>• Or Yogev, CEO &amp; Founder, Augwind LTD.</li> <li>• Scott Burger, Sr. Manager, Analytics, Form Energy</li> </ul>
Scaling to Deploy the Next Generation of Storage	<ul style="list-style-type: none"> <li>• Dr. Avi Shultz, Program manager, Solar Energy Technologies Office (SETO), U.S. DoE</li> <li>• Lara Pierpoint, Director of Climate, Actuate Innovation</li> <li>• Curt Graham, Vice President- Office of Technology Lead, Fluor Corporation</li> </ul>
Panel Discussion –	<ul style="list-style-type: none"> <li>• how far does DOE need to advance things before the commercial sector will commit to a utility scale project</li> <li>• how a first-of-a-kind commercial or demo project becomes successful when deployed at scale</li> </ul> <p>Priorities and Way Forward</p>



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HALL 3



## ROUNDTABLE

# Women in Energy



### About the Workshop

Women have an important role to play in sustainable energy development as energy professionals, energy decision makers and energy consumers. Renewable energy industry has a good participation from women. Energy storage and e-mobility are next cleantech sectors in the clean energy transition where tremendous growth will be witnessed. It will be important not to miss the important part of the workforce. The session will focus on Connecting, Educating, Inspiring, Networking and Empowering women in clean energy transition.

Australia	Japan	India	Central European Time	US EST
2:30:00 AM	1:30:00 AM	10:00:00 PM	6:30:00 PM	12:30:00 PM
4:00:00 AM	3:00:00 AM	11:30:00 PM	8:00:00 PM	2:00:00 PM

Chair & Moderator	Jacque Derosa, Vice President-Energy Storage, Ameresco
Co-Chair	Christine Lins, Executive Director, Global Women's Network for the Energy Transition
	Netra Walawalkar, Director – India Markets, Customized Energy Solutions
	Mani Khurana, Sr. Energy Specialist, The World Bank
	Patricia Tatto; VP; ATA Renewables, Mexico
	Silvia Zumarraga; Market Development Manager-Latin America & Caribbean; Wärtsilä
	Laurence Keke, Managing Director, ENGIE PowerCorner Benin
	Sarah Griffiths, Director, Head of Regulatory Affairs, Enel North America





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HALL 1

# WORKSHOP

# Urban Air Mobility



## About the Workshop

Imagine reducing an hour-long stop-and-go commute from sub-urban area to your office in the central city to minutes. That future is coming closer as many commercial companies, multiple cities, and several startups are pivoting into Urban Aerial Mobility (UAM) aka the “flying vehicles” to capture a slice of a huge market.

On-demand aviation has the potential to radically improve urban mobility, giving people back the productivity lost in their commutes. Just as skyscrapers allowed cities to use limited land more efficiently, urban air transportation will use three-dimensional airspace to combat transportation congestion. The radical technological developments in batteries and fuel cells have made advanced and sustainable aviation a near-term possibility. WESD-UAM workshop is bringing together global experts and practitioners in the exciting areas to share their experience and their vision for a flying future.

Australia	Japan	India	Central European Time	US EST
4:30:00 AM	3:30:00 AM	12:00:00 AM	8:30:00 PM	2:30:00 PM
6:00:00 AM	5:00:00 AM	1:30:00 AM	10:00:00 PM	4:00:00 PM

Chair	Davis Hackenberg, Advanced Air Mobility Project Manager, NASA Aeronautics Research Mission Directorate
Moderator	Venkat Viswanathan; Associate professor; Carnegie Mellon University (CMU)
	Varon Felipe, Founder & CEO, Varon Vehicles
	Christian Eschmann, Acting Head of Lab, German Aerospace Center
	Akshay Kumar; Analyst, India Energy Storage Alliance (IESA)
	Ajit Mate; Lead System Engineer A T M, Boeing Research and Technology
	Val Miftakhov; Founder & CEO; ZeroAvia



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HALL 3

**WORKSHOP**

# ESS Project

**(Government-Sponsored Energy Storage Opportunities in Emerging Markets)**



**About the Workshop**

The team of Customized Energy Solutions, Delphos International, and POWER Engineers have recently executed hybrid energy storage feasibility studies in countries new to storage as a grid-scale supply platform. The core application of storage in these instances was energy shift from wind and solar facilities. In addition to plant optimization, site design, and project financing, the team was responsible for identifying pathways to enable the mass deployment of energy storage. The team focused on regulatory structures, market design, and investment pathways that were proven as best-practices around the world while also being tenable for emerging markets. CES, Delphos, and POWER will discuss these projects, common approaches to execution, and challenges that appear to be consistent across these types of opportunities.

Zones	Australia	Japan	India	Central European time	US EST
Start time	04:30:00	03:30:00	00:00:00	20:30:00	14:30:00
End time	06:00:00	05:00:00	01:30:00	22:00:00	16:00:00

Moderator	John Fernands; Senior Consultant - Emerging Technologies; Customized Energy Solutions
	Todd Haynes; Renewable Energy Project Manager; Power Engineers
	Utsav Dhoj Adhikari; VP; Delphos International
	Juliet Pumpuni; Co-lead - the Energy Storage Partnership Program; World Bank