

Midwest Renewables & Energy Storage Forum

July 12-13, 2022 • Chicago

www.smartgridobserver.com/MW-Renewables

It is projected that the share of renewables on the energy grid will grow from 15% in 2019 to over 76% by 2028. Driving these gains will be important advances in regulation, policy and enabling business models for solar, wind and energy storage, both utility-scale and behind the meter. As the Midwest moves away from coal to become a key adopter of renewable energy, important opportunities and challenges face energy providers, utilities and customers. These issues concern required regulatory and financing developments, enhancements to the transmission and distribution network, sustainable business models for renewables-centric energy systems, cost and trends in enabling technologies, and more.

Organized by the Smart Grid Observer, **Midwest Renewables & Energy Storage Forum**, July 12-13, 2022 in Chicago, brings together project developers, investment and finance professionals, and renewable energy planners to examine key considerations surrounding the further penetration of renewables in the Midwest as a region. This will be a key opportunity to make connections and network with key industry leaders, technology innovators and regulatory professionals driving the future of renewables in the Midwest.

Topics to be Addressed Include:

- Rooftop solar, community and utility-scale solar developments
- Regulatory and policy activity impacting infrastructure for renewables
- Tax equity, financing, and income tax credit issues: building the business case
- Utility perspectives and plans for optimizing and maximizing renewables penetration
- Grid integration, interoperability and interconnection considerations
- Energy storage advances, applications and deployments - and strategies going forward
- Microgrids and the state of distributed renewable energy enabling technologies
- Drivers, trends, challenges and opportunities for renewables in the Midwest

Forum Audience

- Solar and wind project developers
- Finance and investment professionals
- Regulatory and policy representatives
- Electric utility strategists and network planners
- Transmission network operators
- Energy storage and enabling technology innovators
- C&I renewable energy buyers
- Municipal and urban planners
- Researchers, analysts and academic professionals

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Agenda

Tuesday, July 12, 2022

8:00 - 9:00 am

Registration and Welcome Coffee

9:00 - 9:30 am

Opening Keynote Address



Laura Caspari

Vice President and Head of Power Marketing and Commercial Strategy

ENGIE North America

9:30 - 10:00 am

Energy Storage Opportunities, Applications and Deployments

According to the Department of Energy, annual global deployments of stationary storage (excluding pumped hydro) is projected to exceed 300 GWh by 2030, representing a 27% compound annual growth rate (CAGR) for grid-related storage and an 8% CAGR for use in industrial applications such as warehouse logistics and data centers. The largest markets for stationary energy storage in 2030 are projected to be in North America (41.1 GWh), China (32.6 GWh), and Europe (31.2 GWh).* This presentation examines the current opportunities, market drivers and challenges facing stationary energy storage in the U.S., with particular focus on the midwest. We will examine key applications and business opportunities for sector stakeholders in the region going forward.



Pritil Gunjan

Principal Research Analyst

Guidehouse Insights

10:00 - 10:30 am

The Progression and Challenges of Grid Integration of Energy Storage Systems

Energy storage systems (ESSs) can accommodate an extensive variety of functions, rendering them a viable solution to enhance grid resilience and enable further penetration of renewables on the grid. However, the current capital cost, cycle life and efficiency of storage technologies, although improving, remain shy of the threshold of single application use cases making economic sense. At this point, only stacked applications operation can offer economic feasibility. Stacked benefits can be achieved through manipulation of the active

and reactive power capabilities of ESSs to achieve multiple value streams and maximize total benefit while maintaining operational efficiency such that battery life is not being compromised. While control techniques are progressing in strides, the practice of identification of points on the electrical system where the need for such functionality is greatest, remains immature. This presentation provides an overview of the following:

- Methodologies deduced by Duke Energy to identify grid tied BESS needs on the grid
- Accurately modeling performance and degradation of grid-tied BESS projects in the development phase
- New and upcoming BESS architectures Technical Challenges of Islanding



Sherif Abdelrazek, Ph.D.

Director, Renewables Engineering - Energy Storage & Microgrids

Duke Energy

10:30 - 11:00 am

Networking Coffee Break

11:00 - 12:30 pm

Renewables and Energy Storage System Policies

This session will discuss current regulatory and policy climates for renewables in the Midwest, with an eye toward recent trends and developments that have important implications for energy storage in the region. One such development is Illinois' Climate and Equitable Jobs Act (CEJA) -- a nation-leading clean energy law that provides significant incentives for solar plus energy storage projects. We will also look at forthcoming FERC Order 2222 implementation rules and their anticipated widespread impact on distributed energy resources, including renewables and energy storage.



Jay Marhoefer

Founder & CEO

Intelligent Generation



Michael J. Allen

Partner

Stafford Rosenbaum LLP



John Fernandes

Senior Consultant - Emerging Technologies

Customized Energy Solutions

12:30 - 1:30 pm PDT

Lunch Break

1:30 - 2:15 pm

Advancing Energy Storage Deployment and Integration Through Industry Collaboration

Energy storage is among the fastest growing segments of the electric power industry, with nearly a TWh of storage projected to be deployed this decade. Energy storage technologies continue to advance rapidly and national and state/provincial rules governing the deployment of energy storage systems are still emerging. This rapid development leads to gaps in understanding and procedures, driving the need for accurate and common approaches of how to proceed. The Electric Power Research Institute (EPRI) established the Energy Storage Integration Council (ESIC) to advance the deployment and integration of energy storage systems through open, technical collaboration. ESIC convenes and facilitates discussion among utilities, storage developers, technologies suppliers, researchers, regulators, and other stakeholders to address technical and operational issues associated with deploying energy storage systems. ESIC develops and publishes a variety of publicly available guides that support safe and effective energy storage integration. This presentation will highlight current industry challenges related to deploying energy storage and provide an overview of some of the tools ESIC has developed to help address those challenges.



Erin Minear, P.E.

Principal Project Manager, Energy Storage Program

Electric Power Research Institute (EPRI)

2:15 - 3:00 pm

Critical Industry Standards for DER Communications

Presenting the key industry communications standards: What they are, why they are important and how you can implement them. As the solar + storage industry continues phenomenal growth, distributed energy resources (DER) are moving from pilots to production, as a result, utilities are looking to standardize communications to lower costs, allow repeatability and replaceability of DER units. Gone are the days of a few manufacturers dominating the space. Now grid coordination is key. Also, large solar + storage inverter-based resource plants are interconnecting at the transmission level, deemed "Dispersed Generation" by NERC -- What standards are rising for this marketplace?

Essential communications elements will be covered for these Standards: IEEE 2800, IEEE 1547, UL 1741, MESA-
DER, MESA Device, SunSpec Modbus, IEEE 2030.5, OpenADR and linkages with the international standard IEC
61850.



Mark T. Osborn
Senior Technology Advisor
QualityLogic

3:00 - 3:15 pm

Networking Coffee Break

3:15 - 4:45 pm

Renewable Energy Project Siting Issues and Best Practices

In order to achieve ambitious clean energy goals at the state and federal level, numerous new community solar and other renewable energy projects must be built across the U.S. In siting new projects, it is possible to adopt planning strategies that optimize ecosystem enhancement and conservation -- while delivering economic and community benefits for all stakeholders involved. This session will discuss the various factors and approaches to renewables siting that can lead to win-win scenarios as the ramp-up to increased renewables gains steam in the Midwest and nationally.



Douglas Goaley
Founder, CEO & Chief Business Development Strategist
Precision Data Systems



Brian Ross
Vice President, Renewable Energy
Great Plains Institute



Joe Pallardy
Water and Natural Resource Specialist / Renewable Energy Specialist
Emmons and Olivier Resources (EOR)



Timothy Kim
CEO
ibV Energy Partners

4:45 - 5:45 pm **Drink Reception**

Wednesday, July 13, 2022

8:00 - 9:00 am
Morning Coffee

9:00 - 9:30 am
Deploying Energy Storage as Transmission Assets

This session will cover the topic of using energy storage as transmission assets, including the characteristics that make the technology a promising tool for addressing grid issues and the policy that enables this. As an example of this application, the conversation will include a review the development of the first "Storage as Transmission Only Asset" in the Midcontinent Independent System Operator footprint - American Transmission Company's Waupaca Area Storage Project in Wisconsin -- and efforts to enable storage as transmission to also possibly provide market services.



Bob McKee
Strategic Projects Director
American Transmission Co.

9:30 - 10:00 am
Advances in Organic Redox Solid-Flow Battery Technology

Currently, the energy storage market is dominated by lithium ion batteries, supported by scale-up of portable electronics and electric vehicle markets. While valuable, lithium ion has limitations in large-scale energy storage, specifically its cost structure, safety risks, supply chain vulnerabilities, and environmental impacts. This session discusses progress in commercializing organic solid-flow battery technology for medium and long duration energy storage applications. The use of organic molecules is inspired by nature's evolution to store energy most efficiently, and the result is energy storage with high performance, low cost, and superior safety, which uses abundantly available and recyclable organic materials.

- Drivers of energy storage technology needs

- Key performance attributes of organic solid-flow technology
- Technology and commercial readiness
- Target applications



Ben Kaun
President
CMBlu Energy

10:00 - 10:30 am

New Opportunities and Potential for Pumped Storage Hydro in the Midwest

Pumped Storage Hydro can work in the Midwest if we use underground voids as the lower reservoir -- like Abandoned Underground Mines, or PSHAUM. This Midwest-specific grid-scale energy storage tech has been studied at the IUPUI's Lugar Center for Renewable Energy since 2016. This work was a winner of a F.A.S.T. Award by DOE. Last year, the Center joined with Carbon Solutions, LLC (Bloomington) on a DOE-funded SBIR Phase 1 techno-economic study. Learn how this clever re-use of low-value land can provide energy arbitrage, plus grid voltage services. It is cheaper than batteries, and greener besides.



Peter Schubert, Ph.D., P.E.
Director, Richard G. Lugar Center for Renewable Energy (LCRE)
Professor of Electrical & Computer Engineering
Indiana University-Purdue University Indianapolis (IUPUI)

10:30 - 11:00 am

Networking Coffee Break

11:00 - 12:30 pm

Storage Technology Advances and Business Models



Parag Nathaney
Senior Market Fundamentals Analyst
Constellation



Steve Nieland
Vice President, Innovation
EnTech Solutions



Douglas Goaley
Founder, CEO & Chief Business Development Strategist
Precision Data Systems

12:30 - 1:30 pm

Lunch Break

1:30 - 2:30 pm

Community Solar in the Midwest: Directions Forward

Community Solar is one of the fastest growth sectors of the renewable energy industry. According to the Solar Energy Industries Association, 4.6 gigawatts of community solar have been installed in the U.S. through 2021, and the next five years will see the U.S. community solar market add more than 4.3 gigawatts of total capacity. Not only is it popular with consumers who want access to affordable renewable energy but also with regulators and policymakers, as it gives access to renewable energy to low and middle income consumers who might not otherwise have access to sustainable clean energy. In addition, Community Solar can usually be deployed much more rapidly than utility scale solar due to its smaller footprint, and a more streamlined approval and interconnection process. This session will discuss the growth of Community Solar in the Midwest and how it fits into the broader vision for decarbonization of the electricity industry.



Ross Malme
President and CEO
Malme Energy Consulting. LLC



Andrew Kvaal
COO & Board Member
Ampion



Maria Redomond
Director
Wisconsin Office of Sustainability and Clean Energy

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Sponsorship and Exhibition Opportunities



Sponsorship of the Forum ensures that your technology solutions and expertise are positioned prominently to a range of energy professionals furthering the adoption of renewable energy in the Midwest.

This is a unique opportunity to target a key group of decision-makers, project developers, network managers, utility executives, investors, and energy providers who will be in attendance.

Sponsors receive a range of valuable exposure opportunities for highlighting their involvement in the Forum and maximizing their interaction with attendees. Tabletop display space, a page in the Virtual Exhibit, prominent logo positioning on event website and an opportunity to distribute corporate information to attendees are just a few benefits of sponsorship.

To arrange your participation, contact Daniel Coran at dcoran@smartgridobserver.com or +1-815-310-3343

- Tabletop exhibit space
 - Speaking opportunity (subject to editorial approval and availability)
 - 4 complimentary passes
 - White paper or executive interview published on event website
 - Attendee list
 - Special introductions and one-to-one meetings facilitated by SGO
 - Top-level logo visibility on event website and in all marketing communications
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 - Corporate description with link on "Sponsors" page
 - Post-conference communication with attendees
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Platinum - \$4,000

- Tabletop exhibit space
 - 3 complimentary passes
 - Attendee list
 - White paper or executive interview published on event website
 - Special introductions and one-to-one meetings, facilitated by SGO
 - Top-level logo visibility on event website and in all marketing communications
 - Top-level logo recognition throughout the conference, during breaks and session introductions
 - Corporate description with link on "Sponsors" page
 - Post-conference communication with attendees
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Gold - \$3,000

- Tabletop exhibit space
 - 2 complimentary passes
 - Attendee list
 - Prominent logo visibility on event website and in all marketing communications
 - Prominent logo recognition throughout the conference, during breaks and session introductions
 - Corporate description with link on "Sponsors" page
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Silver - \$2,000

- 1 complimentary passes
 - Attendee list
 - Prominent logo visibility on event website and in all marketing communications
 - Prominent logo recognition throughout the conference, during breaks and session introductions
 - Corporate description with link on "Sponsors" page
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Bronze - \$1,000



Event Venue:

Chicago Conference Center

205 W. Wacker Drive, Chicago, Illinois 60605

Located in downtown Chicago's Loop, the Chicago Conference Center is steps away from the city's magnificent lakefront with world-renowned Millennium and Grant Parks, marvelous museums, restaurants and retail shopping.

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AES Corporation	Energyworx	Open Access Technology International, Inc.
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American Renewable Energy	Gehrs Consulting	POWER Engineers
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California Public Utilities Commission	Illinois Commerce Commission	Schweitzer Engineering Labs
CB&I	Illinois Institute of Technology	Smart Grid Interoperability Panel (SGIP 2.0)
CEIVA Energy	Intelligent Generation	Sandia National Laboratory
Central Hudson Gas & Electric	IPERC	SMUD
Chicago Booth School of Business	Joule Assets	SoCal Gas
Cisco	Kisensum	Southern California Edison
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CPS Energy	Market Strategies Intl.	Tennessee Valley Authority
Customized Energy Solutions	Michaels Energy	Union of Concerned Scientists
DataCapable	Microgrid Institute	U.S. Commercial Service - Chicago
DataInsights	Mitsubishi Electric	U.S. Department of Energy
DCPSC	Modern Grid Solutions	University of Illinois – Chicago
Deloitte Consulting	Midcontinent ISO (MISO)	University of Minnesota
Department of Energy and Environment, District of Columbia	Midwest Energy News	Utilidata
Columbia	Midwest Energy Research Consortium	UtiliWorks Consulting
DePaul University	National Grid	WECC
Duke Energy	Natural Resources Defense Council	West Monroe Partners
E9 Insight	NEMA	WindyCitySDR
Eaton	Network Perception	WIPRO
EDF Renewables	Nexant	Woolpert Inc.
Edison Electric Institute	NextEnergy	Xcel Energy
Electric Power Research Institute (EPRI)	New York State Smart Grid Consortium	XON
	Nord Strategy Group	

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Academic and Non-Profit Organizations	\$495

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