



# The 2021 Virtual Summer Study on Energy Efficiency in Industry

“Decarbonizing Industry”

**PROGRAM**

July 12-15, 2021

Welcome to ACEEE’s 14th biennial **Summer Study on Energy Efficiency in Industry**, “Decarbonizing Industry.” The following pages contain information about the Summer Study program which follow the virtual event being held on the Socio platform.

If you are a registered attendee, you should have received a link to access the platform ahead of time. Here you can plan your schedule for the week, set up your profile to network with other attendees, and have access to conference resources such as presentations, proceedings, the attendee list, and more. Please keep in mind, the Summer Study schedule is based on **Eastern time** hours.

## PLANNING COMMITTEE

### CO-CHAIRS:

Neal Elliott, ACEEE  
Prakash Rao, Lawrence Berkeley National Laboratory

### PANEL LEADERS:

#### **Panel 1**

John Dyck, CESMII  
Steve Schultz, International Energy Consultants, LLC

#### **Panel 2**

Kate Peretti, U.S. Department of Energy  
Perry Stephens, EPRI

#### **Panel 3**

Alberta Carpenter, National Renewable Energy Laboratory  
Sharon Nolen, Eastman  
Bryan Seitz, Frito Lay

#### **Panel 4**

Margaret Hansbrough  
Siddika Pasi, RePowered, Inc.

### ACEEE STAFF:

Neal Elliott, Wendy Koch, Rebecca Lunetta, Lynn Pyle, Ed Rightor, Kim Williams  
**Support:** Mary Robert Carter, Kate Doughty, Andrew Hoffmeister, Rob Kerns, Nick Roper, Emma Runge, Hannah Tsimmerman, and Andrew Whitlock

# PROGRAM

## Monday, July 12

2:15-3:15 PM

### OPENING PLENARY

**Welcome**

Steve Nadel, Executive Director, ACEEE

**Co-Chair Introduction**

Prakash Rao, Research Scientist, Lawrence Berkeley National Laboratory

**Host & Keynote Introduction**

Don Stanczak, VP of Business Planning and Development, DTE

**Keynote**

Kelly Speakes-Backman, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy

3:15-4:45 PM

### WELCOME RECEPTION (Zoom)

[More information to come]

## Tuesday, July 13

11:00 AM-12:30 PM

### PLENARY and SCHOLARS RECOGNITION

#### INDUSTRIAL RENEWABLES PLENARY

Many industrial firms are turning to renewable energy to reduce their carbon footprint. This session will explore energy supply-side dimensions of industrial decarbonization, including renewable generation, transmission, and distribution as well as use of direct solar thermal process heating and energy storage. It will span topics ranging from identifying and supporting research and policy needs to deployment, location, grid, and environmental considerations.

**Introduction**

Neal Elliott, ACEEE

**Moderator**

Diana Bauer, Advanced Manufacturing Office, U.S. Department of Energy

**Panelists**

David Harwood, DTE

Edward Stones, Dow Chemical Company

Colin McMillan, National Renewable Energy Laboratory

#### LINDA LATHAM SCHOLARS RECOGNITION

**Introduction**

Neal Elliott, ACEEE

**Presenter**

Gene Rodrigues, ICF

# Tuesday, July 13 continued

12:30-1:15 PM

BREAK

1:15-2:45 PM

CONCURRENT PANEL SESSIONS

**Panel 1, Session 1: How Agile Manufacturing is Helping Small and Medium Manufacturers become Resilient**

(Moderator: Steve Schultz, International Energy Consultants)

- Enabling Small and Medium Manufacturers to Adopt Smart Manufacturing — *Joy Pixley, UC Irvine*
- Energy Management and Product Sustainability Standards: A Key Link to Sustainable Supply Chains — *Vestal Tutterow, Lawrence Berkeley National Laboratory*
- 3rd Party M&V is Treasure Meant to be Shared — *Peter Kleinhenz, Go Sustainable Energy*

**Panel 2, Session 1: Examples/Stories**

(Moderator: Kate Peretti, U.S. Department of Energy)

- The Non-Energy Benefits of Industrial Technologies — *Sreenidhi Krishnamoorthy, EPRI*
- From Diesel to Electric: How Energy Efficiency and Electric Utilities can Partner to Electrify Rural Manufacturing Options — *Jonathan Thibeault, VEIC*
- Emerging Technology Concepts to Fully Decarbonize Ironmaking — *Christina Chang, U.S. Department of Energy*

**Panel 3, Session 1: Decarbonization Pathways Using Different Approaches around the World**

(Moderator: Alberta Carpenter, National Renewable Energy Laboratory)

- Reducing Rocky Mountain Emissions — *Genevieve London, Stillwater Energy*
- Decarbonizing Industry through the Adoption of Strategic Energy Management — *Michael Deane, CLEAResult*
- Impacts of Regulatory, Managerial, and Technological Factors on Energy Efficiency: A Novel Study in the Vietnamese Industries — *Luan Nguyen, Griffith University*

2:45-3:15 PM

BREAK

# Tuesday, July 13 continued

3:15-4:45 PM

## CONCURRENT PANEL SESSIONS

### **Panel 4, Session 1: State and Regional Programs/Policy**

*(Moderator: Margaret Hansbrough, Consultant)*

- Industry in the Pandemic: Who's Up? Who's Down? Where to Focus — *James Siegel, Eversource*
- Building Efficiency Codes as a Vehicle for Deep Energy and Carbon Reductions in the Industrial Sector — *Jonathan McHugh, McHugh Energy*
- Statewide Stakeholder Governance and Fostering EE Savings and GHG Reduction through New Regulatory Models — *Rob Neumann, Guidehouse*

### **Panel 1, Session 2: Technology and Business Hurdles in Achieving Agile Manufacturing**

*(Moderator: Steve Schultz, International Energy Consultants)*

- How Manufacturers are Finding New Energy Savings by Engaging On-Site Teams through Crowdsourcing and Gamification — *Clifton Yin, ICF*
- Monetizing Energy Resilience — *Allison Ross, VEIC*
- Viral Content: Lessons Learned from COVID-19 for the Future — *Eric Mullendore, Bonneville Power Administration*

### **Transformative Interactive Session #1 (Zoom): DEI in Industry**

The pollution from U.S. manufacturing has disproportionately hurt low-income households and communities of color — groups that need a voice as we seek to cut harmful emissions, revive the economy, and create jobs. Diversity, equity, and inclusion (DEI) is now, more than ever, essential towards meeting U.S. manufacturing goals. It DEI will bring the best and the brightest to the table to tackle these challenges. Join us for this Transformative Session on DEI, with a focus on what YOU can do today to mobilize your own DEI efforts.

**Moderator** Sandy Glatt

**Panelists** Pamela Fann, Southeast Energy Efficiency Alliance  
Comas Haynes, Georgia Tech Research Institute  
Michael Li, Connecticut Department of Energy and Environmental Protection

# Tuesday, July 13 continued

4:45-5:15 PM

BREAK

5:15-6:30 PM

NETWORKING RECEPTION (Zoom)

Post Panel Debrief and DEI Discussion Breakouts (Zoom):

- **Panel 1 Re-cap/ DEI Discussion 1**  
(Moderator: Steve Schultz, International Energy Consultants)
- **Panel 2 Re-cap/ DEI Discussion 2**  
(Moderator: Kate Peretti, U.S. Department of Energy)
- **Panel 3 Re-cap/ DEI Discussion 3**  
(Moderator: Sharon Nolen, Eastman)
- **Panel 4 Re-cap/DEI Discussion 4**  
(Moderator: Margaret Hansbrough, Consultant)

# Wednesday, July 14

11:00 AM-12:45 PM

PLENARY and AWARDS RECOGNITION

## INDUSTRIAL SUSTAINABILITY PLENARY

Industrial firms are increasingly committing to aggressive sustainability-related goals. This panel will bring together three leaders among Midwest manufacturers to discuss the state of manufacturing sustainability in 2021 and their commitments to decarbonize their operations, supply chains, and the products they produce. Panelists will discuss how these commitments relate to their strategic visions, strengthen their competitiveness, and contribute to the sustainability of their companies more broadly (i.e., environmental equity, energy, water and waste).

**Introduction** Prakash Rao, Lawrence Berkeley National Laboratory

**Moderator** Ed Rightor, ACEEE

**Panelists** Kristen Siemen, CSO, GM

Traci Forrester, Executive Vice President Environmental and Sustainability, Cleveland-Cliffs

Brooke Beebe, Vice President of External Affairs, Hemlock Semiconductor

## CHAMPIONS OF ENERGY EFFICIENCY AWARDS RECOGNITION

**Introduction** Ed Rightor, ACEEE

**Comments by Award Recipients**

12:45-1:15 PM

BREAK

# Wednesday, July 14 continued

1:15-2:45 PM

## CONCURRENT PANEL SESSIONS

### **Panel 2, Session 2: Analysis**

(Moderator: Perry Stephens, EPRI)

- Systems- and Technology-Level Analysis of Electrification Potential in 13 U.S. Manufacturing Subsectors — *Ali Hasanbeigi, Global Efficiency Intelligence*
- One of These Things IS Like the Other: A New Taxonomy of Industry for Improved Energy System Modeling — *Elizabeth Wachs, National Renewable Energy Laboratory*
- Carbon Management Requires Energy Management — *Peter Therkelsen, Lawrence Berkeley National Laboratory*

### **Panel 3, Session 2: Technologies and Equipment Choices to Reduce GHG Emissions**

(Moderator: Sharon Nolen, Eastman)

- How Chill is Carbon? Evaluating Industrial Process Cooling Options — *Daniel Jordan, VEIC*
- Simulating a Manufacturing System Including an Air Compressor for Reducing Energy Costs — *Vansh Vyas, Louisiana State University*
- Not Just Hot Air: Low-Cost Decarbonization through Heat Recovery — *Joel Zahlan, Cadmus*

### **Panel 4, Session 2: Out of the Box or Innovative Policies and Programs aka “Big Challenges & Big Solutions”**

(Moderator: Siddika Pasi, RePowered Inc.)

- The Role of State Policy in Furthering Industrial Decarbonization via Energy Efficiency — *Andrew Hoffmeister, ACEEE*
- Low Carbon Steel Production Transition through the Lens of the Oil and Gas Industry — *Caitlin Swalec, Global Energy Monitor*
- To Co-digest or Not to Co-digest - *Sabarish Vinod, Lincus, Inc.*

# Wednesday, July 14 continued

2:45-3:15 PM

BREAK

3:15-4:45 PM

CONCURRENT PANEL SESSIONS

## Panel 1, Session 3: How Agile Manufacturing Helps Achieve Sustainability

(Moderator: John Dyck, CESMII)

- Stellantis Drives Operational Savings During COVID — Peter Bassett, Energy Performance Services
- Three California Industries under the Energy Efficiency Microscope — Christopher Dyson, DNV GL
- Turn It Off: Decarbonizing Your Manufacturing Operation with a Push of a Button — Taka Kokabu, VEIC

## Panel 2, Session 3: Alternate Fuels

(Moderator: Perry Stephens, EPRI)

- Determining the Ideal Mix: (Finding Out) What Range of Measures are Best for One's Business? — Stefan Buettner, Institute for Energy Efficiency in Production
- Pathways and Challenges to Adoption of Decarbonized Hydrogen in Industrial Processes — Richard Shandross, Guidehouse
- Beneficial CHP: Is That a Thing? Considering CHP in the Context of Beneficial Electrification — Bruce Hedman, Entropy Research

## Transformative Interactive Session #2 (Zoom): Role of Industrial Decarbonization RD&D

DOE Advanced Manufacturing Office (AMO) has recently been developing a report on that discusses the role of RD&D in achieving industrial decarbonization and the challenges faced in meeting the administration's aggressive climate change commitments. Authors of the report will discuss the research findings.

**Moderator:** Joe Cresko, US DOE AMO

**Panelists:** Ed Rightor, ACEEE

Alberta Carpenter, National Renewable Energy Laboratory

Sachin Nimbalkar, Oak Ridge National Laboratory

William Morrow, Lawrence Berkeley National Laboratory



# Wednesday, July 14 continued

4:45-5:15 PM

BREAK

5:15-6:30 PM

NETWORKING RECEPTION (Zoom)

## Post Panel Debrief Breakouts (Zoom)

- **Panel 1 Re-cap**  
(Moderator: John Dyck, CESMII)
- **Panel 2 Re-cap**  
(Moderator: Perry Stephens, EPRI)
- **Panel 3 Re-cap**  
(Moderator: Alberta Carpenter, National Renewable Energy Laboratory)
- **Panel 4 Re-cap**  
(Moderator: Siddika Pasi, RePowered, Inc.)

# Thursday, July 15

11:00 AM-12:00 PM

**INDUSTRIAL POLICY PLENARY**

This moderated roundtable will explore how the challenges facing industrial decarbonization vary with location but are influenced by policies outside of a region. The session will explore industrial decarbonization across different geographic locations and examine how they interact within the US and at the global scale, as well as the policy options available to governments.

**Introduction** Neal Elliott, ACEEE

**Moderator** Tom Dower, Lanza Tech

**Panelists** Michael Kelly, Natural Resources Canada

Clemens Rohde, Fraunhofer

Steve Nadel, ACEEE

12:00-12:45 PM

**Transformative Interactive Session #3 (Zoom): Developments in Industrial Strategic Energy Management (SEM)**

The leaders of the North American SEM Collaborative together with U.S. DOE and U.S. EPA leaders will discuss the current state of SEM and engage with attendees on the benefits and challenges associated with SEM implementation in industrial sector companies.

**Moderator** Wendy Gibson, Energy Trust of Oregon

**Panelists** Ethan Rogers, U.S. DOE AMO

Walt Tunnessen, U.S. EPA ENERGY STAR® Manufacturing

Tamara Berger, BC Hydro

Glenda Towns, SoCalGas

# Thursday, July 15 continued

12:45-1:15 PM

BREAK

1:15-2:45 PM

CONCURRENT PANEL SESSIONS

## **Panel 3, Session 3: Relying on Resource Efficiency to Build Decarbonization Pathways**

(Moderator: Alberta Carpenter, National Renewable Energy Laboratory)

- The Impact of Strategic Energy Management Practices on Energy Efficiency: Statistical Evidence from Plant-Level Data — *Gale Boyd, Duke University*
- Analytical Tools to Achieve Deep Decarbonization Pathways for Industries — *Amit Kanungo, DNV GL*
- Holistic Evaluation of Decarbonization Pathways of Energy-Intensive Industries Based on Exergy Analysis — *Matthias Leisin, Stuttgart University*

## **Panel 4, Session 3: Innovative Industry Case Studies**

(Moderator: Margaret Hansbrough, Consultant)

- Bringing Innovation into the Mainstream: Overcoming Challenges in Funding Unique Projects through Standard Program Offerings — *Jon Feldman, IESO*
- Reducing Energy Use and GHG Emissions in California's Food Processing Sector through Innovative Program Design — *Kevin Uy, California Energy Commission*
- A Transmission Critical Peak Pricing Pilot for Manufacturers in Ohio — *John Seryak, Go Sustainable Energy*

## **Panel 1, Session 4: Using Sustainability Strategies to Create Business Value**

(Moderator: John Dyck, CESMII)

- Pursuing Perpetual Project Performance Persistence: Lessons from the Field — *Todd Amundson, Bonneville Power Administration*
- SEM at Scale: OMG, My Cohort has 142 Facilities! - *Zach Podell-Eberhardt, Cascade Energy*
- The Facility Performance Index (FPI) — *Phillip Thomas, CoreWatts, (A RealDecoy Company)*

# Thursday, July 15 continued

2:45-3:15 PM

BREAK

3:15-4:45 PM

CONCURRENT PANEL SESSIONS

## **Panel 2, Session 4: Technology Development**

(Moderator: *Kate Peretti, U.S. Department of Energy*)

- Industrial Heat Pumps: Electrifying Industry's Process Heat Supply — *Ed Rightor, ACEEE*
- Manufacturing an Extremely Efficient Transistor for Decarbonization — *Tina Kaarsberg, U.S. Department of Energy*
- How Much Focus Should Go Towards Optimizing Inherently Inefficient Compressed Air Systems vs. Phasing Them Out — *Chris Wagner, Go Sustainable Energy*

## **Panel 3, Session 4: Innovative Solutions to Climate Complexities**

(Moderator: *Sharon Nolen, Eastman*)

- Improving Power Resilience and Reliability for Industry: A Novel Decision Framework to Assess Microgrid Resilience Benefits Under Different Physical Climate Risk Scenarios — *Carlos Gamarra, HARC*
- Prioritizing Relationships During the Pandemic — *Andrea McKenna, Cascade Energy*
- Benchmarking Energy and Sustainability: How Do Your Corporate Programs Stack Up? - *Danny Macri, U.S. EPA*

## **Panel 4, Session 4: National/Global Government Policies & Programs**

(Moderator: *Siddika Pasi, RePowered, Inc.*)

- Assessment for a Federal Buy Clean Policy for Carbon-Intensive Construction Materials in the United States — *Dinah Shi, Global Efficiency Intelligence*
- Modernizing the U.S. Building Stock through the Advanced Building Construction Initiative — *Cheryn Metzger, Pacific Northwest National Laboratory*
- Green Public Procurement and Buy Clean Policies and Programs around the World — *Cecelia Springer, Boston University*
- The Potential to Decarbonize the U.S. Manufacturing Sector by 2050 — *Betsy Dutrow, U.S. EPA*

4:45-5:15 PM

BREAK

# Thursday, July 15 continued

5:15-6:30 PM

NETWORKING RECEPTION (Zoom)

Post Panel Debrief Breakouts (Zoom):

- **Panel 1 Re-cap**  
(Moderator: John Dyck, CESMII)
- **Panel 2 Re-cap**  
(Moderator: Kate Peretti, U.S. Department of Energy)
- **Panel 3 Re-cap**  
(Moderator: Sharon Nolen, Eastman)
- **Panel 4 Re-cap**  
(Moderator: Margaret Hansbrough, Consultant & Siddika Pasi, RePowered, Inc.)

---

## Accepted “Alternate” Papers

Alternate papers are papers that have been selected for publication in the proceedings but may not be presented during the Summer Study.

### Panel 1:

- Is It a Magic Trick? Energy Efficiency Low/No Cost Measures in Industry — *Dustin Bailey, Guidehouse*

### Panel 4:

- Initial Assessment of ISO 50001 Efficiency Improvements in Energy and Carbon Intensive Industrial Subsectors — *Douglas Nelson, Clemson University*
- Best Practices for Helping Governments Prioritize Equity in the Siting of Electric — *James Schroll, ABT Associates*

# Tuesday, July 20-21

1:00-4:00 PM SEM SUMMIT (Zoom)

Hosted by the North American SEM Collaborative for the 5th Annual SEM Summit, The 2021 SEM Summit will provide a unique opportunity to virtually connect with the growing SEM community. This two-day event will offer live presentations, cutting-edge research, and special breakout sessions. Join utility professionals, program administrators, evaluators, and other energy efficiency professionals to hear customer perspectives, get updates from regional SEM collaboratives, and interact with the SEM experts.

# SPONSORS

HOST

# DTE

GOLD



EVERSOURCE AND NATIONAL GRID  
ARE A PROUD SPONSOR OF



SILVER



BRONZE

