Welcome to the Energy Exchange and Better Buildings Summit!

As leaders in your communities, agencies, businesses, and organizations, you all bring unique and valuable insights on pursuing affordable energy and economic growth across the country.

That’s why I am delighted you all have come together in Cleveland to share innovative strategies, learn from industry experts, and gain replicable energy management solutions for your organizations. Together, we can spur critical investments in aging infrastructure and bring great benefits to Americans by improving the places where we work and live.

Over the next few days, you will have access to technical trainings, panel sessions, and a network of peers from across the energy community. We hope you leave the conference with the tools you need to further advance your organization’s energy initiatives.

From the U.S. Department of Energy, we are proud to feature your leadership and recognize your innovation, energy savings progress, and commitment to America’s energy independence. Keep up the good work!

Sincerely,

Rick Perry
SECRETARY, U.S. DEPARTMENT OF ENERGY
# TABLE OF CONTENTS

Summary Schedule ................................................................. 1
General Conference Information ........................................... 2
Daily Agendas At-a-Glance: Tuesday - Thursday ....................... 4
Opening Plenary, Keynote, Roundtables, and Recognition Events. ........................................ 10
Special Events and Ask-an-Expert Lounge ................................ 11
Showcase Building Tours ...................................................... 12
Training Themes Overview ................................................... 14
Tuesday Session Details ....................................................... 16
Wednesday Session Details .................................................. 25
Thursday Session Details ..................................................... 43
Friday Better Buildings Post-Conference Workshops .................. 61
Event Map — Huntington Convention Center of Cleveland ........... 62

---

*Please help us make the Energy Exchange and Better Buildings Summit better every year.*

*Use the mobile app to evaluate sessions — your feedback is important to us!*
SUMMARY SCHEDULE

Monday, August 20, 2018
Pre-Conference

8:00 AM–5:30 PM  FEMP Workshops
5:30 PM–7:00 PM  Federal Meetings

Trade Show

Tuesday, August 21, 2018
Sessions & Trade Show

8:30 AM–10:00 AM  OPENING PLENARY
10:00 AM–12:00 PM  Energy Exchange Sessions
10:30 AM–12:00 PM  Better Buildings Workshops
9:00 AM–11:30 AM  Ask-An-Expert Lounge
2:00 PM–5:30 PM  Energy Exchange Sessions
2:00 PM–5:30 PM  Better Buildings Workshops
2:00 PM–5:30 PM  Showcase Building Tours
2:00 PM–5:30 PM  Ask-An-Expert Lounge

LUNCH: 12:00 PM – 2:00 PM

Wednesday, August 22, 2018
Sessions & Trade Show

8:30 AM–12:00 PM  Energy Exchange Sessions
8:30 AM–12:00 PM  Better Buildings Sessions
8:30 AM–12:00 PM  Showcase Building Tours
8:30 AM–12:00 PM  Ask-An-Expert Lounge
8:30 AM–12:00 PM  Buildings and the Grid Roundtable

12:30 PM–2:00 PM  KEYNOTE ADDRESS
2:00 PM–5:30 PM  Energy Exchange Sessions
2:00 PM–5:30 PM  Better Buildings Sessions
2:00 PM–5:30 PM  Ask-An-Expert Lounge
2:00 PM–5:30 PM  Resilience Roundtable
5:30 PM–6:30 PM  RECOGNITION EVENT: 2018 FEDS SPOTLIGHT
6:00 PM–7:30 PM  ENERGY EXCHANGE AND BETTER BUILDINGS SUMMIT RECEPTION

Thursday, August 23, 2018
Sessions & Trade Show

8:30 AM–12:00 PM  Energy Exchange Sessions
8:30 AM–12:00 PM  Better Buildings Sessions
8:30 AM–12:00 PM  Ask-An-Expert Lounge

12:30 PM–2:00 PM  Federal Meetings
2:00 PM–5:30 PM  Better Buildings Sessions
2:00 PM–5:30 PM  Ask-An-Expert Lounge

LUNCH: 12:00 PM – 2:00 PM

Friday, August 24, 2018
Post-Conference

8:00 AM–6:00 PM  Federal Meetings
8:00 AM–6:00 PM  Better Buildings Workshops

JOIN AND FOLLOW THE DISCUSSION
#EnergyExchange2018
#BBSummit2018
Session Presentations and Speaker Information

2018 Energy Exchange and Better Buildings Summit presentations will be posted online shortly following the event. Biographies for hundreds of public and private sector industry experts leading this year’s Energy Exchange training sessions have been posted online.

Learn more at: 2018energyexchange.com/training/ and betterbuildingssolutioncenter.energy.gov/summit

Photography and/or Videotaping in Progress

By attending this event, you understand that you may be photographed, audio recorded, filmed, or videotaped, and you hereby give Energy Exchange and Better Buildings Summit the unqualified right to take pictures and/or recordings of you and grant the perpetual right to use your likeness, image, photo (collectively, “image”), without compensation, for broadcast or exhibition in any medium and to put the finished pictures/recordings to any legitimate use without limitation or reservation.

You hereby waive, release, and forever discharge Energy Exchange and Better Buildings Summit from and against any and all claims or actions arising out of or resulting from any use of your image.

Fun Run

Join fellow attendees Thursday, August 23 at 6:30 am for a fun run. Choose either the 5K or 10k route along Cleveland’s scenic waterways. Beginners and non-athletes are welcome to participate. This is a casual and non-competitive affair. Route info is available at: 2018energyexchange.com/agenda/off-site-events

Event Guidelines

- An Energy Exchange and Better Buildings Summit event badge is required to access all training sessions, workshops, meet-ups, meals, and the trade show
- Session seating is first come, first serve
- Please silence all electronic devices while attending all Energy Exchange and Better Buildings sessions, workshops, and meet-ups
- Energy Exchange and Better Buildings Summit is open to the press
- Some sessions may be recorded

Food and Gift Rules

Federal employees are reminded of the legal limitation on the acceptance of refreshments/gifts provided by a non-federal (private sector) entity. The refreshments/gifts must have a value of $20 or less, including taxes and gratuity, and the total value of the individual gifts, including refreshments, from any one entity cannot exceed $50 in a calendar year (5CFR 2635.204[a]). Federal employees should contact their agency’s ethics office for further guidance.

Provided Lunches

Lunch will be provided on Tuesday, August 21; Wednesday, August 22; and Thursday August 23. The value of each lunch is $17; federal employees and national laboratory staff attending the Energy Exchange and Better Buildings Summit should deduct this amount from their travel vouchers.
Continuing Education Units

International Association for Continuing Education and Training (IACET) continuing education units (CEUs) are available for the majority of the Energy Exchange training sessions. This year, CEU tests can be taken after sessions end. This year’s training will offer 0.2 CEUs for a 1.5-hour training session.

1. Attend a CEU-designated session. The majority of sessions are eligible; see the session descriptions on pages 16-61 to determine which ones.

2. Pass a session-specific quiz. For attendees who preregistered for Energy Exchange, quizzes will be available at the end of each business day. For those who registered on-site, quizzes will be available shortly after the end of the 2018 Energy Exchange and Better Buildings Summit. The minimum passing score is 80%.

Attendees should use the following link to access their quizzes on the Whole Building Design Guide course portal: wbdg.org/energy-exchange-2018

Session quizzes will be available through October 31, 2018.

3. Complete the session evaluation administered through the Whole Building Design Guide course portal. Session moderators will discuss CEU requirements at the beginning of each training session.

FBPTA Credits

The Federal Buildings Personnel Training Act (FBPTA) of 2010 requires all federal personnel providing building operations and maintenance services to demonstrate competencies necessary to effectively operate government facilities. In general, this will apply to personnel performing facility management, building operations, and energy management roles. The U.S. General Services Administration (GSA) and the Facilities Management Institute (FMI) have developed an online tool for assessment and monitoring of professional development called Accelerate FM.

Where you see the GSA FBPTA symbol or notation in the Agenda At-a-Glance or the session descriptions on pages, you’ll know that:

► This session has been aligned with at least one FBPTA performance.
► This session will be automatically uploaded in to AccelerateFM, the FBPTA compliance reporting tool, for all attendees with an account in AccelerateFM.
► If you do not have an account in AccelerateFM, if you create one within 30 days, this session will be uploaded for you.
► If you want to learn more about FBPTA, visit fmi.gov or acceleratefm.us
► Sessions that have been archived will be available for future viewing and can be added to your profile in Accelerate FM for FBPTA credit.

CEU  Look for this identifying tag in sessions descriptions.

FBPTA  Look for this identifying tag in sessions descriptions.
# Agenda at-a-Glance: Tuesday, August 21, 2018

## Opening Plenary

<table>
<thead>
<tr>
<th>8:30 AM–10:00 AM</th>
<th>Workforce, Management, and Policy Drivers</th>
<th>Resilience and Energy Contingency Planning Implementation</th>
<th>Optimized Design, Operations, and Maintenance for Smarter Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Themes:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce Development and Engagement</td>
<td>Workforce Development and Engagement</td>
<td>Planning for Mission-Driven Resilience</td>
<td>Distributed Generation: Contribution to Resilience</td>
</tr>
<tr>
<td>Policy and Strategies</td>
<td>Policy and Strategies</td>
<td>Continuity of Operations: Resilience and Contingency Solutions</td>
<td>Building Optimization Essentials</td>
</tr>
<tr>
<td>Partnering Strategically with FEMP</td>
<td>Partnering Strategically with FEMP</td>
<td>What Keeps You Up at Night? Today’s Threats to Critical Infrastructure</td>
<td>Data Literacy</td>
</tr>
</tbody>
</table>

### 10:30 AM–12:00 PM

- **Workforce Development and Engagement**
  - Energy Manager: Workforce Development Requirements and Credentialing
  - Legislative Developments Affecting Energy Policy and Funding
  - FEMP Cybersecurity Program for Facility Related Controls
- **Policy and Strategies**
  - Legislative Developments Affecting Energy Policy and Funding
- **Partnering Strategically with FEMP**
  - FEMP Cybersecurity Program for Facility Related Controls
  - What Keeps You Up at Night? Today’s Threats to Critical Infrastructure
- **Planning for Mission-Driven Resilience**
  - Continuity and Contingency: What is Needed When?
  - Transforming Business Models for Alternative Energy
- **Continuity of Operations: Resilience and Contingency Solutions**
  - Energy 101: Lighting
  - Data Analytics 101

### LUNCH: 12:00 PM–2:00 PM

### 2:00 PM–3:30 PM

- **Workforce Development and Engagement**
  - Hiring, Training, and Sustaining the Energy Management Community
  - Executive Order 13834, Efficient Federal Operations: Updates on Implementation
- **Policy and Strategies**
  - Executive Order 13834, Efficient Federal Operations: Updates on Implementation
- **Partnering Strategically with FEMP**
  - Building Critical Teams for Critical Buildings
  - Planning for Resilience
- **Planning for Mission-Driven Resilience**
  - Contingency Energy: What’s My Plan B?
  - Energy Storage and Back-up Generation
- **Continuity of Operations: Resilience and Contingency Solutions**
  - Energy 101: HVAC
  - Energy Modeling
- **Distributed Generation: Contribution to Resilience**
  - Energy 101: Controls Data

### 4:00 PM–5:30 PM

- **Tools and Training Resources for Professional Development**
  - Understanding the Administration’s Priorities (CEQ)
  - Energy Project Implementation Insights: Sharing Critical Lessons Learned
  - Assessment Processes Across Agencies
  - Integrated Solution Sets: Microgrids
  - Hybrid Energy Systems
- **Building Optimization Essentials**
  - Energy 101: Controls Data
- **Data Literacy**
  - Energy Modeling

---

See page [16, 17, 18, 19, 20, 21, 22, 23]
<table>
<thead>
<tr>
<th>HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS</th>
<th>FINANCING, PERFORMANCE CONTRACTING, AND UTILITY PARTNERSHIPS</th>
<th>INTEGRATED KEY SECTORS: WATER, FLEET, ETC.</th>
<th>BETTER BUILDINGS PEER EXCHANGE AND LEARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
</tr>
</tbody>
</table>

**OPENING PLENARY**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>See page 17</td>
<td>See page 17</td>
<td>See page 18</td>
<td>See page 18</td>
<td>See page 18</td>
<td>See page 18</td>
<td></td>
</tr>
</tbody>
</table>

**LUNCH: 12:00 PM – 2:00 PM**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>See page 20</td>
<td>See page 20</td>
<td>See page 21</td>
<td>See page 21</td>
<td>See page 21</td>
<td>See page 21</td>
<td>See page 21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>See page 23</td>
<td>See page 23</td>
<td>See page 24</td>
<td>See page 24</td>
<td>See page 24</td>
<td>See page 24</td>
<td>See page 24</td>
</tr>
</tbody>
</table>

**ALL SESSIONS**

- Better Buildings Summit track / session
<table>
<thead>
<tr>
<th>TRACKS:</th>
<th>WORKFORCE, MANAGEMENT, AND POLICY DRIVERS</th>
<th>RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION</th>
<th>OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS</th>
<th>HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM – 10:00 AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
</tr>
<tr>
<td>10:30 AM – 12:00 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
</tr>
<tr>
<td>12:30 PM – 2:00 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
</tr>
<tr>
<td>2:00 PM – 3:30 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 PM – 5:30 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
<td>1 session</td>
</tr>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:00 PM – 7:30 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LUNCH: 12:00 PM – 2:00 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KEYNOTE ADDRESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018energyexchange.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>SESSIONS</td>
<td>TRACKS</td>
<td>THEMES</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>9:00 AM - 12:00 PM</td>
<td>Better Buildings Roundtable, Meet-Ups, and Workshops</td>
<td>Data Centers, Manufacturing</td>
<td>Better Buildings Peer Exchange and Learning</td>
<td></td>
</tr>
<tr>
<td>LUNCH: 12:00 PM - 2:00 PM</td>
<td>Multifamily Meet-Up Part 1</td>
<td>1 session</td>
<td>6 sessions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M&amp;V and Performance Assurance/Utility Partnerships</td>
<td>Water Management &amp; Resilience, Fleet</td>
<td>Manufacturing Partner Meet-Ups and Workshops</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consolidate or Improve? The Small Data Center Question</td>
<td>Consolidate or Improve? The Small Data Center Question</td>
<td>Water, Fleet, Etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MANUFACTURING: CHP TAPs Talk and the Grid Roundtable</td>
<td>MANUFACTURING: CHP TAPs Talk and the Grid Roundtable</td>
<td>Water, Fleet, Etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial Real Estate Sector Meet-Up</td>
<td>Commercial Real Estate Sector Meet-Up</td>
<td>Water, Fleet, Etc.</td>
<td></td>
</tr>
</tbody>
</table>

**LUNCH**: 12:00 PM – 2:00 PM

**KEYNOTE ADDRESS**

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSIONS</th>
<th>TRACKS</th>
<th>THEMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM - 12:00 PM</td>
<td>Better Buildings Roundtable, Meet-Ups, and Workshops</td>
<td>Data Centers, Manufacturing</td>
<td>Better Buildings Peer Exchange and Learning</td>
</tr>
<tr>
<td>LUNCH: 12:00 PM - 2:00 PM</td>
<td>Multifamily Meet-Up Part 1</td>
<td>1 session</td>
<td>5 sessions</td>
</tr>
<tr>
<td></td>
<td>M&amp;V and Performance Assurance/Utility Partnerships</td>
<td>Water Management &amp; Resilience, Fleet</td>
<td>Manufacturing Partner Meet-Ups and Workshops</td>
</tr>
<tr>
<td></td>
<td>Consolidate or Improve? The Small Data Center Question</td>
<td>Consolidate or Improve? The Small Data Center Question</td>
<td>Water, Fleet, Etc.</td>
</tr>
<tr>
<td></td>
<td>MANUFACTURING: CHP TAPs Talk and the Grid Roundtable</td>
<td>MANUFACTURING: CHP TAPs Talk and the Grid Roundtable</td>
<td>Water, Fleet, Etc.</td>
</tr>
<tr>
<td></td>
<td>Commercial Real Estate Sector Meet-Up</td>
<td>Commercial Real Estate Sector Meet-Up</td>
<td>Water, Fleet, Etc.</td>
</tr>
</tbody>
</table>

**RECOGNITION EVENT**: 2018 FEDS SPOTLIGHT

**ENERGY EXCHANGE AND BETTER BUILDINGS SUMMIT RECEPTION**
<table>
<thead>
<tr>
<th>TIME</th>
<th>TRACKS:</th>
<th>THEMES:</th>
<th>RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION</th>
<th>OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM – 10:00 AM</td>
<td>1 session</td>
<td>Workforce Development and Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 session</td>
<td>Policy and Strategies</td>
<td>Planning for Mission-Driven Resilience</td>
<td>Building Optimization Essentials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organizational Strategies</td>
<td>Continuity of Operations: Resilience and Contingency Solutions</td>
<td>Data Literacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy is Everyone’s Job: Harnessing the Human Power of Your Organization</td>
<td>Distributed Generation: Contribution to Resilience</td>
<td>Data Driven Results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Department of Defense Deputy Assistant Secretary Panel (DoDEA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM – 12:00 PM</td>
<td>3 sessions</td>
<td>Workforce Development and Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 session</td>
<td>Policy and Strategies</td>
<td>Planning for Mission-Driven Resilience</td>
<td>Building Optimization Essentials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organizational Strategies</td>
<td>Continuity of Operations: Resilience and Contingency Solutions</td>
<td>Data Literacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy is Everyone’s Job: Harnessing the Human Power of Your Organization</td>
<td>Distributed Generation: Contribution to Resilience</td>
<td>Data Driven Results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Department of Defense Deputy Assistant Secretary Panel (DoDEA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 session</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LUNCH: 12:00 PM – 2:00 PM

12:30 PM – 2:00 PM

BETTER BUILDINGS CHALLENGE PARTNER RECOGNITION AND SWAP 4 PANEL

<table>
<thead>
<tr>
<th>TIME</th>
<th>TRACKS:</th>
<th>THEMES:</th>
<th>RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION</th>
<th>OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM – 3:30 PM</td>
<td>4 sessions</td>
<td>Organizational Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Driven Results</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Planning: State, Local, Utility, and Private Sector Perspectives</td>
<td>Building Optimization Essentials</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Strategies for Rural Communities</td>
<td>Data Literacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saving Energy Cleans Up the Air: Tales from the Trenches</td>
<td>Data Driven Results</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Power of the Pen: Leasing Best Practices for Energy Efficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 PM – 5:30 PM</td>
<td>4 sessions</td>
<td>Organizational Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Driven Results</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A Level Playing Field: New Tools and Programs for Energy Affordability</td>
<td>Building Optimization Essentials</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building a Next Generation Workforce for Next Generation Buildings</td>
<td>Data Literacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>More Affordable Energy Upgrades for America’s Families</td>
<td>Data Driven Results</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>We’re Engaged! Building Relationships that Lower Energy Intensity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5:30 PM – 7:00 PM

BETTER BUILDINGS SECTOR NETWORKING EVENTS
HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session</td>
<td>1 session</td>
<td>2 sessions</td>
<td>1 session</td>
<td>1 session</td>
<td>2 sessions</td>
<td>1 session</td>
<td>1 session</td>
</tr>
</tbody>
</table>

Dynamic Facades and Daylight Integration See page 46

Leveraging New Enterprise IT Technologies See page 46

De-energize the Workplace: Zero Energy Office Buildings See page 46

Real RTU AFDD Performance - Stories From the Field See page 46

Risk Management/ Sharing: What’s in Your Contract? See page 47

Utility Market Engagement & Trends See page 47


Water’s Impact on Energy Cost and Consumption See page 48

Electric Vehicles and the Federal Fleet See page 48

Innovations in Residential Financing Workshop See page 47

Sustainable Water/ Wastewater Infrastructure: “Selling” Your Facility Upgrades See page 54

BETTER BUILDINGS CHALLENGE PARTNER RECOGNITION AND SWAP 4 PANEL

Notes from the Field: Using High Impact Technologies See page 52

Advanced Auditing Solutions See page 52

Facility Related Control System Assessment See page 52

Follow the Sun: Successful Strategies for Solar Adoption See page 52

All Roads Point Home: Where Residential Energy and Real Estate Meet See page 52

Performance Contracting: Government and Industry Perspectives See page 53

‘T’ll Term Do We Part See page 53

Emerging Trends in Green Banks See page 53

Leveraging Commercial PACE to Drive Economic Development and Resiliency See page 53

Water Risk Case Studies See page 54

New Mobility Options for Fleets (AFVs and Beyond) See page 54

Financial Ally Roundtable See page 53

BETTER BUILDINGS SECTOR NETWORKING EVENTS

Notes from the Field: Using High Impact Technologies

Cooling Tower Water Management Best Practices See page 56

New Innovations in Energy Efficiency and Smart Home Technology See page 56

Promising Practices in Energy Resilience See page 56

Making Smart Investments: How Banks and Investors Think about Energy Efficiency See page 57

Spotlight on Energy Efficiency Funding Models for School Facilities See page 57

Rethinking Traditional Finance: How Efficiency-as-a-Service Unlocks New Potential for Businesses See page 60

Water Reuse: Successful Outcomes and Innovative Strategies See page 60

Building Futures: Providing Sustainable Career Pathways for Residents See page 60

BETTER BUILDINGS SECTOR NETWORKING EVENTS

LUNCH: 12:00 PM – 2:00 PM

Energy & Water Nexus Strategies

Manufacturing

Multifamily

Making a Splash: Targeting Water Saving Measures for Maximum Impact See page 48

Shooting for the Moon: Planning and Execution Towards a Big Energy Goal See page 48

From the Bottom to the Top: Institutionalizing Efficiency in Multifamily Organizations See page 48

Not Just for Energy: Repurposing an Energy Management System for Water Efficiency See page 54

Get a Running Start: Tools to Build Capacity for Measurable Progress See page 54

Risky Business: New Tools for Addressing Disaster Risk in Multifamily Housing See page 57

The Future is Now: Emerging Manufacturing Technologies See page 57

Swimming in the Fast Lane: Next-level Strategies for Improving Water Efficiency See page 57

Preparing the Next Generation: Transition Planning for Energy Managers See page 60

Building Futures: Providing Sustainable Career Pathways for Residents See page 60

BETTER BUILDINGS SECTOR NETWORKING EVENTS
Opening Plenary  
**TUESDAY: 8:30 - 10:00 AM**  
Room: Exhibit Hall A  
- **Leslie Nicholls**  
  Acting Director of Federal Energy Management Program, DOE  
- **Hon. Lucian Niemeyer**  
  Assistant Secretary of Defense for Energy, Installations, and Environment, DOD

**Chip Fulghum**  
Deputy Undersecretary for Management, DHS  

**Dr. Martin Keller**  
Director, National Renewable Energy Laboratory  

**Dr. Teresa Pohlman**  
Executive Director, Sustainability and Environmental Programs, DHS

Keynote Address  
**WEDNESDAY: 12:30 - 2:00 PM**  
Room: Exhibit Hall A  
- **Dr. Kathleen Hogan**  
  Deputy Assistant Secretary for Energy Efficiency, DOE  
- **Frank G. Jackson**  
  Mayor, Cleveland, OH  
- **Jason Hartke**  
  President, Alliance to Save Energy  

**John Selldorf**  
Chief Executive Officer and President, Legrand  

**Bill Peacock**  
Chief Operating Officer, Cleveland Clinic Foundation

**Asim Haque**  
Chairman, Ohio Public Utilities Commission

Thought Leadership Roundtables

**Look Who’s Talking: Buildings and the Grid Roundtable**  
**WEDNESDAY: 10:30AM - 12:00PM  See page 33 for details**  
Room: Grand Ballroom A  
**MODERATOR:** David Nemtzow, DOE  
**PANELISTS:** Asim Haque, Ohio Public Utilities Commission; Douglas Rath, Marriott International; Janice Berman, Pacific Gas & Electric Company; Clay Nesler, Johnson Controls

**Resilience Roundtable**  
**WEDNESDAY: 2:00PM - 3:30PM  See page 35 for details**  
Room: Grand Ballroom A  
**MODERATOR:** Dr. Kathleen Hogan, DOE  
**PANELISTS:** Sandy Morgan, USDA; Alison Silverstein, Consultant; John Scott, Colliers International; Matthew Lynch, University of Hawaii; Ryan Halsey, Pacific Gas & Electric Company

Recognition Events

**2018 FEDS Spotlight**  
**WEDNESDAY: 5:30 PM**  
Room: Grand Ballroom A  
The 2018 FEDS Spotlight Ceremony recognizes agency champions, nominated by their individual agencies, who have gone above and beyond typical day-to-day responsibilities to help implement exceptional projects and programs that help agencies achieve missions and meet energy, water, and fleet management goals. Posters featuring the selected champions will be displayed next to the DOE Ask-an-Expert Lounge in Exhibit Hall C throughout the week.

**Better Buildings Challenge Partner Recognition and SWAP 4 Panel**  
**THURSDAY: 12:30 - 2:00 PM**  
Room: Exhibit Hall A  
Better Buildings recognizes Challenge partners and allies for their exemplary leadership in meeting energy, water, or financing goals. Join us for a behind the scenes look at the making of SWAP 4 and meet the energy efficiency teams who made it happen.

**Carlos Ruiz Rabago**  
Senior VP, Manufacturing North America, L’Oréal

**Al Hildreth**  
Global Energy Manager, General Motors

**Eric Fox**  
Manager, L’Oréal USA

**Erin Lawrence**  
Associate Energy Engineer, General Motors

**Danielle Azoulay**  
Head of CSR & Sustainability, L’Oréal USA

**Brian Wilger**  
Senior Environmental Engineer, General Motors

**Maria Vargas**  
Director of Better Buildings Challenge, DOE

**Lauren Paige**  
VP, Public Affairs & Strategic Initiatives, L’Oréal USA

**Bryan Cohen**  
Partner, C+C
**Special Events**

**Trade Show**  
*MONDAY - THURSDAY*  
Room: Exhibit Hall C

**Ask-an-Expert Lounge**  
*TUESDAY - THURSDAY*  
Room: Exhibit Hall C

**Showcase Building Tours**  
*BY RESERVATION; WALK-ON IF SPACE PERMITS*  
See page 12 for details

*TUESDAY: 2:00 PM*  
Meet in Grand Ballroom C

**WEDNESDAY: 7:30 AM**

**Speed Dating with Financial Allies**  
*BY APPOINTMENT ONLY*  
*TUESDAY: 10:00-10:30 AM*  
Room: Exhibit Hall C

**WEDNESDAY: 10:00-10:30 AM**  
Room: Grand Ballrooms B and C

**Energy Exchange and Better Buildings Summit Reception**  
*TUESDAY: 5:30 PM*  
Locations: Contact your sector lead

---

**Ask-an-Expert Lounge**

Technical experts from national laboratories and the Department of Energy, whose expertise span a wide range of efficiency topics, are available to answer questions and discuss energy performance trends in technology, process, data, and tools. Attendees will have the opportunity to ask about emerging technologies, discuss strategies from their respective fields, and learn how to better approach projects within their own organizations.

<table>
<thead>
<tr>
<th>TIME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TUESDAY</strong></td>
<td></td>
</tr>
<tr>
<td>10:00-10:30 AM</td>
<td>- Space Conditioning – Better Buildings Expert: Michael Deru, NREL</td>
</tr>
<tr>
<td></td>
<td>- Specialty Facilities (Federal Labs and Data Centers) – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Federal Agency Reporting &amp; Accountability – Expert: FEMP</td>
</tr>
<tr>
<td>3:30-4:00 PM</td>
<td>- Plug &amp; Process Loads – Better Buildings Experts: Kim Trenbath, NREL;</td>
</tr>
<tr>
<td></td>
<td>Sormeh Konijav, Waypoint Building Group</td>
</tr>
<tr>
<td></td>
<td>- Federal Agency Reporting &amp; Accountability – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Federal Workforce Development &amp; Engagement – Expert: FEMP</td>
</tr>
<tr>
<td><strong>WEDNESDAY</strong></td>
<td></td>
</tr>
<tr>
<td>10:00-10:30 AM</td>
<td>- Space Conditioning – Better Buildings Expert: Michael Deru, NREL</td>
</tr>
<tr>
<td></td>
<td>- Energy Data Management – Better Buildings Expert: Adam Guzzo, DOE</td>
</tr>
<tr>
<td></td>
<td>- ESPC, UESC, ENABLE and Appropriations Project Development – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Distributed Energy and Energy Procurement – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Portfolio Resilience Planning and Implementation – Expert: FEMP</td>
</tr>
<tr>
<td>3:30-4:00 PM</td>
<td>- Building Envelope – Better Buildings Expert: Melissa Voss Lapsa, ORNL</td>
</tr>
<tr>
<td></td>
<td>- Portfolio Resilience Planning and Implementation – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Specialty Facilities (Federal Labs and Data Centers) – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Facility Related Control Systems Security – Expert: FEMP</td>
</tr>
<tr>
<td><strong>THURSDAY</strong></td>
<td></td>
</tr>
<tr>
<td>10:00-10:30 AM</td>
<td>- Plug &amp; Process Loads – Better Buildings Experts: Kim Trenbath, NREL;</td>
</tr>
<tr>
<td></td>
<td>Sormeh Konijav, Waypoint Building Group</td>
</tr>
<tr>
<td></td>
<td>- Federal Agency Reporting &amp; Accountability – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Federal Workforce Development &amp; Engagement – Expert: FEMP</td>
</tr>
<tr>
<td>3:30-4:00 PM</td>
<td>- DOE’s Energy Assessment and Management Software – Better Buildings Expert: Thomas Wenning, ORNL</td>
</tr>
<tr>
<td></td>
<td>- Federal Agency Reporting &amp; Accountability – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- Federal Workforce Development &amp; Engagement – Expert: FEMP</td>
</tr>
<tr>
<td></td>
<td>- ESPC, UESC, ENABLE and Appropriations Project Development – Expert: FEMP</td>
</tr>
</tbody>
</table>
SHOWCASE BUILDING TOURS

TUESDAY: 2:00 PM (Meet in Grand Ballroom C) and WEDNESDAY: 7:30 AM
BY RESERVATION; WALK-ON IF SPACE PERMITS

As part of this year’s Energy Exchange and Better Buildings Summit, Better Buildings partners and other Cleveland-area properties are hosting Showcase Building Tours on August 21 and 22. Organizations will open up their buildings and share energy savings insights with Energy Exchange and Better Buildings Summit attendees. Tour hosts will highlight the energy and water efficiency measures and actions that have helped them achieve their energy reduction goals and save money.

Cleveland Clinic
COMMERCIAL
The Tomsich Pathology Lab offers state-of-the-art diagnostic services in microbiology, special chemistry, immunopathology, and molecular pathology, as well as expert diagnosis to patients institutionally, regionally and nationally. The lab is LEED Gold certified. Attendees will hear about the strategies the Cleveland Clinic Foundation employed to reduce energy use in the facility, including daylighting, LED installation, advanced and responsive high-efficiency heating and cooling systems, and a combination of solar and vegetative roofing.

Great Lakes Brewing Company
COMMERCIAL
Located 2 miles from the shores of Lake Erie, Great Lakes Brewing was founded in 1988 and has been dedicated to sustainability since the start. Attendees will get a tour of the brewery and restaurant, which includes a radiant heat floor, straw bale wall, and other green building techniques. After walking through the green projects in the pub, attendees will walk through the brewery to understand energy and water conservation practices, including the brewery’s solar PV array.

GSA Building - Metzenbaum U.S. Courthouse
PUBLIC
The Metzenbaum U.S. Courthouse opened in 1910 and has been listed on the National Register of Historic Places since 1974. The building is 227,000 square feet, comprised of 5 floors above grade and a basement. It was LEED-EBOM Certified in 2013 and has an ENERGY STAR score of 91. In 2014 GSA entered into an energy savings performance contract (ESPC) for the courthouse that included the construction of on-site chilled water and gas fired heating water plants. In addition, interior lighting retrofits and controls were installed. The courthouse also has a robust single stream recycling program and the 2018 year-to-date waste diversion rate is 63%.

Metropolitan at The 9
COMMERCIAL
This luxurious downtown hotel is a Marcel Breuer-designed high-rise office converted into a hotel and apartments. To preserve the historical character of the site, the owners implemented an interesting mechanical solution using the design of the original concrete facade panels. As part of a 2012 redevelopment of 3 city blocks, 3 historic buildings were renovated into a mixed-use space. In addition to the hotel and residences, there is retail, theatre, and dining space, as well as a newly-constructed LEED Gold county government headquarters.
Cuyahoga Metropolitan Housing Authority

The Cuyahoga Metropolitan Housing Authority (CMHA) will showcase different sites, each demonstrating CMHA’s sustainability mission and how strategic investment and partnerships can enhance community efforts. Attendees will see the CMHA Solar Field & Urban Agriculture/Employee Gardening Program, a LEED Silver Certified CMHA Campus, and Multifamily Estate Heritage View.

Forest City - Key Tower

Forest City Realty Trust, a Better Buildings Partner, recently relocated their Corporate Headquarters to the Key Tower building. Occupying five newly renovated floors, come and explore the energy efficiency and health and wellness features of their new space. Meet the team who coordinated the ENERGY STAR Tenant Space application.

Lakewood Waste Water Treatment Plant

See the “before and after” of waste water energy efficiency improvements and get an advanced look at a city’s plan for the future! Lakewood, Ohio is making tremendous investments in its waste water treatment facility over the next 5-10 years. Tour attendees get a guided walkthrough of operating and planned improvements, including high-efficiency aeration blowers and a methane-powered generator.

Northeast Re-Integration Center (correctional facility)

A representative from the Ohio Department of Rehabilitation and Correction and the Facility Manager will lead a tour of this correctional facility and its various energy elements, including the mechanical, kitchen, laundry, electrical, lighting, and HVAC features. During a Q&A, they will discuss an upcoming energy savings performance contract (ESPC) for the facility as well as the state’s recently launched correctional facilities competition, as well as other energy efficiency efforts.

PPG Automotive Coatings Plant

PPG’s Cleveland, Ohio, plant is the company’s largest manufacturing and technical center for automotive coatings in North America. The plant has more than 500 employees and is situated on a 42-acre site in the city’s West Park area. PPG purchased the facility in 1947 from Forbes Varnish Company, which began operations there in 1907. The plant produces a full spectrum of coatings products for automotive original equipment manufacturers, including electrocoat, primers, basecoat, clearcoat, waterborne, and solvent-based products. The tour will focus on the automotive OEM coatings lines and the systems that support production.

ArcelorMittal Steelmaking Facility

The ArcelorMittal Cleveland facility covers more than 950 acres and the plant’s buildings total 7 million square feet. The plant operates 2 blast furnaces which feed 2 steelmaking facilities. Products made at this location are hot-rolled, cold-rolled, and hot-dipped galvanized sheet and semi-finished (slabs). Markets served by this plant include automotive, converters, construction, and distribution. The tour will focus on the finishing operations as well as cross-cutting systems in the mill such as compressed air, fan, and pumping.

Ford Motor Company - Cleveland Engine Plant No. 1

Ford built the Cleveland Engine plant on a 365-acre site in Brook Park in 1951. It was the center of production for Ford’s first overhead valve engine, the Lincoln V8. Engines from this plant have been used in cars from the Edsel to the Mustang, and in trucks like the F-100 and the F-150. The plant has produced over 34 million engines in its lifetime. After a $350 million investment in 2009, Ford overhauled the plant. The 1.6 million-square-foot plant employs 1,570 people building the Eco Boost and Duratech engines. The tour will focus on the engine machining, assembly lines, and compressed air systems serving them.
TRAINING THEMES OVERVIEW

Workforce, Management, and Policy Drivers
Federal agencies, state and local governments, and industry face a number of goals, often executively and legislatively driven, aimed at reducing their energy and water consumption. Enhancing the agility, skills, and knowledge base of the building workforce is a crucial component for accomplishing these goals. Tracks within this theme will explore the strategies and workforce development efforts that have been used to successfully meet these goals – and updates on the policies that drive them.

Technical Tracks:
▶ Workforce Development and Engagement (ENERGY EXCHANGE)
▶ Policy and Strategies (ENERGY EXCHANGE)
▶ Partnering Strategically with FEMP (ENERGY EXCHANGE)
▶ Organizational Strategies (BETTER BUILDINGS SUMMIT)

Resilience and Energy Contingency Planning Implementation
Federal agencies, state and local governments, and industry face a number of goals, often executively and legislatively driven, aimed at reducing their energy and water consumption. Ensuring continuity of operations in federal buildings is key to mission assurance. The energy management community is increasingly called to enhance energy and water resilience and security through energy-savings projects and infrastructure investments while keeping overall grid reliability and cybersecurity in mind. Tracks within this theme will explore successful strategies, projects, business models, and planning efforts used to mitigate these threats.

Technical Tracks:
▶ Achieving Mission Driven Resilience (ENERGY EXCHANGE)
▶ Continuity of Operations: Resilience and Contingency Solutions (ENERGY EXCHANGE)
▶ Distributed Generation: Contribution to Resilience (ENERGY EXCHANGE)

Optimizing Design, Operations, and Maintenance for Smarter Buildings
Through cost-effective design, operation, and maintenance of buildings and campuses, building owners and operators can reduce costs and lower stress on the grid. Increasingly, the building energy management community must consider holistic approaches to facility planning, technology integration, and power supply to ensure individual project success. Tracks within this theme will explore the technologies, tools, strategies, and quality assurance processes for optimized, smarter, buildings.

Technical Tracks:
▶ Building Optimization Essentials (ENERGY EXCHANGE)
▶ Data Literacy (ENERGY EXCHANGE)
▶ Data Driven Results (BETTER BUILDINGS SUMMIT)

High Impact and Secure Technology Applications
Technology changes rapidly, but once installed it can have energy and water impacts that last for decades. Tracks within this theme will explore both fundamental and emerging high impact building technologies and systems; from the fundamentals of energy management topics to the technologies currently being piloted by innovators and early adopters. Successful deployment strategies, lessons learned, and implementation models will be discussed.

Technical Tracks:
▶ Emerging Technologies (ENERGY EXCHANGE)
▶ Cybersecurity Technologies and Control Systems (ENERGY EXCHANGE)
▶ Notes From the Field: Using High Impact Technologies (BETTER BUILDINGS SUMMIT)

Financing, Performance Contracting, and Utility Partnership
Energy efficiency is a powerful way to reduce operating costs, improve the reliability of buildings, and enhance grid reliability. Upfront costs, however, can be a major barrier to implementation. Tracks within this theme will explore different financing models, strategies, and partnership options for energy-saving projects and infrastructure investments – many of them without up-front capital costs.

Technical Tracks:
▶ Financing and Performance Contracting (ENERGY EXCHANGE)
▶ M&V and Performance Assurance / Utility Partnerships (ENERGY EXCHANGE)
▶ Financing for Efficiency and Renewables Projects (BETTER BUILDINGS SUMMIT)
**Integrated Key Sectors: Water, Fleet, Etc.**

Energy management can face significantly different challenges and solution sets based on specific technology areas or economic sectors. Tracks within this theme will explore the latest in energy management topics from specific sector perspectives, including water and manufacturing.

**Technical Tracks:**
- Water Management and Resilience *(ENERGY EXCHANGE)*
- Fleet *(ENERGY EXCHANGE)*

**Better Buildings Peer Exchange and Learning**

Building owners and managers working with Better Buildings are transforming the market of energy and water efficiency in real estate across public and private sectors. Tracks within this theme represent a variety of opportunities to hear from Better Buildings partners, affiliates, and other industry experts about the strategies, technologies, and solutions that inform successful energy and water efficiency policies and practices.

**Technical Tracks:**
- Better Buildings Workshops *(BETTER BUILDINGS SUMMIT)*
- Data Centers *(BETTER BUILDINGS SUMMIT)*
- Energy & Water Nexus Strategies *(BETTER BUILDINGS SUMMIT)*
- Manufacturing *(BETTER BUILDINGS SUMMIT)*
- Multifamily *(BETTER BUILDINGS SUMMIT)*
- Partner Meet-Ups *(BETTER BUILDINGS SUMMIT)*

---

**SUSTAINABILITY INITIATIVES AT THE HUNTINGTON CONVENTION CENTER OF CLEVELAND**

A LEED® Gold Facility, the Global Center for Health Innovation (Global Center) and the Huntington Convention Center of Cleveland are working to reduce environmental impact. In tandem with social responsibility and industry trends, the complex conserves resources, implements recycling initiatives both internally and for organizations hosting meetings and utilizes environmentally friendly products and practices.

**CHICKENS, BEES, AND PIGS — PRODUCING FOOD IN-HOUSE:**
The Huntington Convention Center of Cleveland has teamed up with a sustainability farm to help produce food in-house for catering purposes. The farm is home to several animals and plants, such as chickens, bees, pigs, vegetables and herbs, producing honey, eggs, and locally-grown produce utilized in on-site recipes and menus.

**REDUCE, REUSE, RECYCLE:**
In 2015, the complex recycled over 120 tons of trash, with cardboard accounting for almost 80 tons. Due to increased on-site recycling initiatives, including attendee-accessible recycling containers, more than 67 percent of the waste was recycled and reused.

**ECO-FRIENDLY DESIGN:**
The complex has several environmentally friendly design elements to reduce its footprint, including: programmable lighting that takes advantage of extensive natural light, low flow water systems, water re-fill station, and a green rooftop.
### TUESDAY: 10:30 AM – 12:00 PM

**WORKFORCE, MANAGEMENT, AND POLICY DRIVERS**

<table>
<thead>
<tr>
<th>Room 19</th>
<th>Room 6</th>
<th>Room 21</th>
<th>Room 7</th>
<th>Room 25A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy Manager Workforce Development Requirements and Credentialing</strong>&lt;br&gt;T1S1</td>
<td><strong>Legislative Developments Affecting Energy Policy and Funding</strong>&lt;br&gt;T2S1</td>
<td><strong>FEMP Cybersecurity Program for Facility Related Controls</strong>&lt;br&gt;T3S1</td>
<td><strong>What Keeps You Up at Night? Today’s Threats to Critical Infrastructure</strong>&lt;br&gt;T4S1</td>
<td><strong>Transforming Business Models for Alternative Energy</strong>&lt;br&gt;T6S1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CEU</strong></th>
<th><strong>CEU</strong></th>
<th><strong>CEU</strong></th>
<th><strong>CEU</strong></th>
<th><strong>CEU</strong></th>
</tr>
</thead>
</table>

#### ROOM 19

What does the law say you need to know in your job? This session reviews requirements for Energy Managers under the National Defense Authorization Act (NDAAA) and Federal Buildings Personnel Training Act (FBPTA) and how to comply using existing credentials and training programs. Learn more about the laws and how to make the case for training in an Individual Development Plan.

**PANELISTS**

- Walter Ludwig, U.S. Dept. of Defense
- Brian Gilligan, U.S. General Services Administration
- April Davis, U.S. Office of Personnel Management

#### ROOM 6

This session will provide an overview of the current status of legislation and budgets supporting energy policy and what it means for the energy management community.

**PANELISTS**

- Mark Wagner, Johnson Controls
- Ashley Patterson, Ameresco
- Jennifer Schafer, Cascade Associates

#### ROOM 21

FEMP & Cybersecurity: Integrating FEMP cybersecurity developments for operational technologies into the Federal facilities arena.

**PANELISTS**

- Hayes Jones, U.S. Dept. of Energy
- Michael Mylrea, Pacific Northwest National Laboratory

#### ROOM 7

Our assured access to energy and other critical utilities is at risk from a broad spectrum of emerging and unprecedented threats. This session presents, for the first time at Energy Exchange, unclassified briefings and discussion from leading experts in national security and critical infrastructure on the current threat environment.

**PANELISTS**

- Jon Monken, PJM Interconnection
- Caitlin Durkovich, Tofler Associates
- Matthew Rhoades, Aspen Institute
- Puesh Kumar, U.S. Dept. of Energy

#### ROOM 25A

Explore the integration of mission assurance, continuity of operations, and contingency planning for energy and water disruptions. Subject matter experts from DHS and DOD discuss processes for energy resilience, the ability to identify events/conditions and develop systems that can anticipate, avoid, adapt, withstand and recover from unanticipated events.

**PANELISTS**

- Michael Scarola, U.S. Dept. of Homeland Security
- Crystall Merlino, U.S. Dept. of Homeland Security
- John Baxter, U.S. Dept. of Defense

#### ROOM 5

The cost of alternative energy systems and battery energy storage solutions continues to moderate, allowing for their increased deployment as a resilience strategy. Learn more about how lower prices and market-specific value streams create opportunities allowing federal agencies to leverage these systems for energy assurance in support of mission assurance.

**PANELISTS**

- Bill Sheedy, U.S. Navy
- Dave Robau, National Energy USA
- Tom Hattery, Oak Ridge National Laboratory
- John Bradley Dukes, FESCO Energy
Lighting and lighting controls are currently evolving as fast as any time in the history of electricity. This lightning-paced lighting evolution is creating confusion. This session will be presented without slides in a “coffee-talk” style with audience participation. The discussion topics may start with fact and fiction about LEDs and what to look for, the efficiency battle, and the race to the bottom for marketing. Controls capabilities and lighting horror stories may also show up. This is the audience's track, so come prepared for provocative discussions and how a real LED ROI shows up.

Optimizing buildings to ensure resilience, efficiency and security is best achieved by leveraging the many data sources now available. Learn how to develop and execute a measurement and data collection strategy that will provide the data needed for a variety of applications. This session will cover techniques that can be applied to process and analyze the collected data. A number of data representation best practices, fault detection examples and data resources will be also be shared.

This session will introduce attendees to HVAC technologies that are commercially available and have demonstrated performance significantly better than their peers, but which have not achieved significant visibility or market penetration. At the end of this session, attendees will have a suite of ideas that they can take back to their facilities and, if so desired, purchase through their agency’s normal process.

Operating technologies (OT) pose a unique challenge to cybersecurity. Legacy systems, IoT integration, and OT architecture priorities require a different approach relative to traditional IT cybersecurity. This session will provide a high-level overview of controls systems cybersecurity, priming the attendee for the rest of this essential track.

PANELISTS
E.W. Dovel, Orion Lighting
Mike Myer, Pacific Northwest National Laboratory

PANELISTS
Ryan Stroupe, PG&E Pacific Energy Center
Bill McMullen, Dewberry

PANELISTS
Scott McDonough, Carrier Corporation
Jim Miller, U.S. Army Corps of Engineers
Curt Phillips, U.S. Army
Dave Underwood, U.S. Army

PANELISTS
Daryl Haegley, U.S. Dept. of Defense
Doug Clifton, Ernst & Young
Marianne Meins, Parsons Cyber
Matt Lemma, Mythics Inc.
This session will share information to help federal facility and energy managers and contracting officers match project requirements to the appropriate third party financing vehicle. Session speakers will explain and provide case studies about third party vehicle contract options, including traditional ESPCs, ESPC ENABLE, PPAs, and UESCs.

This introductory session will explain measurement and verification (M&V) and performance assurance in performance contracts, and their differences. Requirements for each within ESPCs and UESCs will be shared.

This session will provide briefings from federal leadership on the latest water related policies including: resilience requirements, reduction mandates, sub-metering requirements, and proper terminology.

Operating your fleet within the Federal legal framework can be challenging, but understanding the relevant laws can help. Gain clarity at this session on what it takes to comply. We will focus an update on Executive Order 13834 and plans to streamline reporting requirements in the coming year.

**PANELISTS**

Doug Culbreth, Oak Ridge National Laboratory
Karen Thomas, National Renewable Energy Laboratory
Chandra Shah, National Renewable Energy Laboratory
Ted O’Shea, ABM

**PANELISTS**

Tracy Niro, U.S. Dept. of Energy
Phil Coleman, Lawrence Berkeley National Laboratory
Michael Goodrum, NORESCO

**PANELISTS**

Saralyn Bunch, U.S. Dept. of Energy
Laura Montoya, U.S. Dept. of Defense
Dee Siegel, White House Council on Environmental Quality

**PANELISTS**

Cabell Hodge, National Renewable Energy Laboratory
Ted Sears, National Renewable Energy Laboratory

**MODERATOR**

Elizabeth Stuart, Lawrence Berkeley National Laboratory
TUESDAY: 2:00 PM – 3:30 PM

WORKFORCE, MANAGEMENT, AND POLICY DRIVERS

- Workforce Development and Engagement
  - Hiring, Training, and Sustaining the Energy Management Community
    - T1S2
- Policy and Strategies
  - Executive Order 13834, Efficient Federal Operations: Updates on Implementation
    - T2S2
- Partnering Strategically with FEMP
  - Building Critical Teams for Critical Buildings
    - T3S2

ROOM 19

How do position requirements help the energy management community meet its performance goals? How do we recruit and keep people in those positions? This session covers broad initiatives designed to strengthen America’s workforce and strategies individuals, installations, and HR professionals can use to build the skills needed to achieve agency energy efficiency and security goals.

CEU

PANELISTS
Bill Kent, Association of Energy Engineers
Ryan Colker, National Institute of Building Sciences
Alison Diehl, Pennsylvania College of Technology

RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION

- Planning for Mission-Driven Resilience
  - Planning for Resilience
    - T4S2
- Continuity of Operations: Resilience and Contingency Solutions
  - Contingency Energy: What’s My Plan B?
    - T5S2
- Distributed Generation: Contribution to Resilience
  - Energy Storage and Backup Generation
    - T6S2

ROOM 6

In this session, an overview of the new Executive Order 13834 will be provided, along with a discussion on the development of metrics and implementation guidance.

CEU

PANELISTS
Dee Siegel, White House Council on Environmental Quality
Cynthia Vallina, Office of Management and Budget

ROOM 21

This session showcases two types of critical buildings, laboratories and data centers, and how organizations have achieved deep energy savings by forming a strong team. Participants will gain insight on the perspectives of an environmental, health, and safety (EHS) manager and an information technology (IT) manager in working with their facility counterparts on laboratory and data center energy efficiency projects.

CEU

PANELISTS
Suzanne Belmont, National Renewable Energy Laboratory
Steve Greenberg, Lawrence Berkeley National Laboratory
Sarah Terrill, Los Alamos National Laboratory
Robert Dydrek, U.S. Army
Terry DeWitt, U.S. Army

ROOM 7

This session focuses on Federal and DOD requirements for energy and water resilience plans. Before you can build a plan, you need to know what your requirements are and learn how to work with different mission stakeholders to understand them. Review best practices for developing good resilience plans, and how they integrate into broader installation plans.

CEU

PANELISTS
John Baxter, U.S. Dept. of Defense
Chris Cimento, U.S. Navy
Keith Benson, U.S. Navy

ROOM 25A

Learn about Contingency Energy, the plan to address power and water systems restoration and implement alternative power, water resources and processes when systems are compromised. This “Plan B” strategy session explores differences between short and long-term outages, internal community requirements, and external community needs (like utility systems).

CEU

PANELISTS
Sandrine Schultz, U.S. Dept. of Energy
Sam Alvard, U.S. Coast Guard
Walter Ludwig, U.S. Dept. of Defense

ROOM 5

Energy storage and backup generation technologies allow agencies to continue operations without power interruption. These systems also generate savings via peak-shaving, maximizing renewable power asset value, time-of-use optimization and “energy arbitrage.” Learn about energy storage, backup generation, and how to leverage these technologies for resilience.

CEU

PANELISTS
Rob Rouse, AECOM
Scott Clark, U.S. Army-Ft Carson
Emma Elgqvist, National Renewable Energy Laboratory
### OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Energy 101: HVAC</td>
<td>Nearly half the energy consumed by government buildings is used for heating, ventilation, and air conditioning (HVAC) systems. Efficient, cost effective HVAC designs leverage a blend of tried and true design practice, a systems-based approach, and leading edge integration and technology solutions. This session will explore HVAC technologies and how balance can be achieved to deliver maximum lifecycle value and minimize maintenance requirements.</td>
</tr>
<tr>
<td>20</td>
<td>Energy Modeling</td>
<td>This session will explore various energy modeling tools, technologies, and best practices. It will discuss basic and advanced modeling techniques for existing buildings using popular tools such as building simulation software, spreadsheet analysis, and computational fluid dynamics. Additionally, the session will demonstrate the pros and cons of different tools and models and how to apply best practices.</td>
</tr>
<tr>
<td>26B</td>
<td>Solutions for Improving Package HVAC Performance</td>
<td>Package rooftop units may be the last frontier for true low-hanging fruit in the energy reduction arena. This session will highlight strategies for improving the efficiency of existing equipment by 20% or more through innovative diagnostics and repairs. Also explored will be after-market technologies that can further improve the efficiency of this equipment by as much as 35%.</td>
</tr>
<tr>
<td>4</td>
<td>Dancing with Risk Management Framework</td>
<td>Continuing from Session 1, but going further into the Department of Defense’s Risk Management Framework (RMF), panelists at this session will go into the basics of RMF, its process, and the role that energy managers play. This session will also provide an overview of the new DFAR.</td>
</tr>
</tbody>
</table>

### PANELISTS

**Energy 101: HVAC**
- David Shutler, Utility System Solutions
- Rusty Friend, Wood PLC

**Energy Modeling**
- Ramin Rezaei, Southland Energy
- David Goldwasser, National Renewable Energy Laboratory
- Bill Sommer, Sain Engineering Associates

**Solutions for Improving Package HVAC Performance**
- Tom Lowery, Wood PLC
- Erik Larson, ECM Holding Group
- Chris Cook, AdvanTek

**Dancing with Risk Management Framework**
- Gabriel Daniels, Chinook Systems
- Eric Lynch, U.S. Army Corps of Engineers
- Raj Rajendran, U.S. Navy
Session speakers will discuss the leveraging of traditional energy saving contracting vehicles in novel ways to provide energy resilience. Both agency and contractor experiences will be shared.

This session will explore requirements, challenges and opportunities for M&V and performance assurance during the project development phase of performance contracts. It will address M&V and performance assurance at three successive levels of complexity (basic/non-technical, moderate, and advanced). This is the first of three complementary sessions that address M&V and performance assurance throughout the life of a performance contract.

This session will provide information on water technologies that are emerging in the market. It is intended for attendees that want to learn how to move beyond the typical "restroom plumbing retrofit" and stretch into advanced water technologies. Industry leaders will share salient information on technologies, such as reclaimed wastewater (direct potable reuse), cooling tower water optimization solutions, and more.

The Federal Automotive Statistical Tool (FAST) launched the capability to accept asset-level data (ALD) in 2016, and in 2018, it becomes the required form of submission. Learn from the FAST management team, GSA Fleet, and agencies with experience how they managed to input their ALD in 2017 and how to avoid common pitfalls. The panel will also feature updates to business rules for the fall submission.

Interest in the Better Buildings Initiative has spread worldwide, with China launching its own Better Buildings program last year. Like the U.S. Initiative, China Better Buildings is designed to accelerate large-scale adoption of energy efficiency approaches in buildings. Learn how this new program is growing and creating opportunities for American companies to demonstrate U.S. expertise and advanced technologies in one of the largest building markets in the world.
### WORKFORCE, MANAGEMENT, AND POLICY DRIVERS

<table>
<thead>
<tr>
<th>Room</th>
<th>Session Topic</th>
<th>Panelists</th>
</tr>
</thead>
</table>
| 19   | Tools and Training Resources for Professional Development | Steven Webster, U.S. Navy  
Mike Bethuy, U.S. Army  
Patrick Dale, U.S. General Services Administration  
Kyle Barry, National Institute of Building Sciences |
| 6    | Understanding the Administration’s Priorities (CEQ) | Gerald Robinson, Lawrence Berkeley National Laboratory  
Amy Pevzner, U.S. General Services Administration  
Renée Jewell, U.S. Forest Service  
Stacy Russ, Western Area Power Administration |
Kate Anderson, National Renewable Energy Laboratory  
Crystall Merlino, U.S. Dept. of Homeland Security  
Nick Judson, MIT Lincoln Laboratory |
| 25A  | Workforce Development and Engagement | Philip Barton, Schneider Electric  
Emily LeJeune, S&C Electric Company  
Stephanie Pine, IPERC  
Ron Durfey, U.S. Marine Corps |
| 5    | Policy and Strategies | Andy Walker, National Renewable Energy Laboratory  
Dan Ingold, Jacobs  
Steve Mapes, U.S. Dept. of Defense  
Scott Greenwood, Oak Ridge National Laboratory |

### RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION

<table>
<thead>
<tr>
<th>Room</th>
<th>Session Topic</th>
<th>Panelists</th>
</tr>
</thead>
</table>
| 19   | Planning for Mission-Driven Resilience | Philip Barton, Schneider Electric  
Emily LeJeune, S&C Electric Company  
Stephanie Pine, IPERC  
Ron Durfey, U.S. Marine Corps |
| 6    | Assessment Processes Across Agencies | Andy Walker, National Renewable Energy Laboratory  
Dan Ingold, Jacobs  
Steve Mapes, U.S. Dept. of Defense  
Scott Greenwood, Oak Ridge National Laboratory |
| 21   | Integrated Solution Sets: Microgrids | Philip Barton, Schneider Electric  
Emily LeJeune, S&C Electric Company  
Stephanie Pine, IPERC  
Ron Durfey, U.S. Marine Corps |
| 25A  | Distributed Generation: Contribution to Resilience | Andy Walker, National Renewable Energy Laboratory  
Dan Ingold, Jacobs  
Steve Mapes, U.S. Dept. of Defense  
Scott Greenwood, Oak Ridge National Laboratory |

---

**PANELISTS**

Steven Webster, U.S. Navy  
Mike Bethuy, U.S. Army  
Patrick Dale, U.S. General Services Administration  
Kyle Barry, National Institute of Building Sciences  
Gerald Robinson, Lawrence Berkeley National Laboratory  
Amy Pevzner, U.S. General Services Administration  
Renée Jewell, U.S. Forest Service  
Stacy Russ, Western Area Power Administration  
Dan Herway, Idaho National Laboratory  
Kate Anderson, National Renewable Energy Laboratory  
Crystall Merlino, U.S. Dept. of Homeland Security  
Nick Judson, MIT Lincoln Laboratory  
Philip Barton, Schneider Electric  
Emily LeJeune, S&C Electric Company  
Stephanie Pine, IPERC  
Ron Durfey, U.S. Marine Corps  
Andy Walker, National Renewable Energy Laboratory  
Dan Ingold, Jacobs  
Steve Mapes, U.S. Dept. of Defense  
Scott Greenwood, Oak Ridge National Laboratory
TUESDAY: 4:00 PM – 5:30 PM

OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS

<table>
<thead>
<tr>
<th>Room</th>
<th>Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Energy 101: Controls Data (T7S3)</td>
</tr>
<tr>
<td></td>
<td>Metering (T8S3)</td>
</tr>
<tr>
<td>20</td>
<td>Energy 101: Controls Data (T7S3)</td>
</tr>
<tr>
<td></td>
<td>Metering (T8S3)</td>
</tr>
<tr>
<td>26B</td>
<td>Energy 101: Controls Data (T7S3)</td>
</tr>
<tr>
<td></td>
<td>Metering (T8S3)</td>
</tr>
<tr>
<td>4</td>
<td>Energy 101: Controls Data (T7S3)</td>
</tr>
<tr>
<td></td>
<td>Metering (T8S3)</td>
</tr>
</tbody>
</table>

In this session, attendees will learn the basics of how to plan for and use control systems software to evaluate energy use. Attendees will also learn about using control systems to analyze a variety of commercial systems such as lighting, fire-life-safety, and renewables. Finally, attendees will become familiar with modules and electronics commonly used to implement building automation.

This session will illustrate how to extract useful data from smart meters and utility invoices to identify actionable energy efficiency measures. It will also provide insights on suitable sub-metering placement on critical assets.

The latest fault detection and optimization systems will be discussed for their use in on-going or continuous commissioning. A commissioning plan should identify which faults to monitor, define the tolerance level of the data being measured, and optimize performance of a system and its components. Software analyzes all available information to detect and predict faults in equipment and ensures performance is maximized while minimizing energy consumption.

This session will delve into ‘approved’ and ‘conceptual’ control system architectures, including both civilian and Department of Defense agencies. Attendees will gain an understanding of the design intent for specific architectures and learn how to apply these configurations. Attendees will gain an understanding of network and control system architecture to better understand how their project fits into broader cybersecurity security solution.

PANELISTS

Jay Santos, Facility Dynamics
Garry Goddard, Los Alamos National Laboratory
Andy Knox, U.S. Navy

Dale Sartor, Lawrence Berkeley National Laboratory
Christopher Barker, Pepco Holdings
Jeffrey Johnson, U.S. Navy

Madeline McCormick, Carrier Corporation
Harry Sim, Cypress Envirosystems
Jeremy Malnar, U.S. Postal Service

Tapan Patel, U.S. Army Corps of Engineers
Jacob Morris, U.S. Navy
Tim Nauman, U.S. Air Force
<table>
<thead>
<tr>
<th>ROOM</th>
<th>Session Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26A</td>
<td>Explore requirements, challenges and opportunities for M&amp;V and performance assurance during the implementation and construction phase of performance contracts. Addresses three successive levels of complexity (basic/ non-technical, moderate and advanced). This is the second of three sessions addressing M&amp;V and performance assurance throughout the life of a performance contract.</td>
</tr>
<tr>
<td>26C</td>
<td>This session introduces attendees to water resilience planning. Receive an overview of process steps to assess a facility’s water resilience and actionable measures to ensure vital water needs are met. In addition, hear an agency example of how the Army is approaching water resilience planning and technical solutions that can help.</td>
</tr>
<tr>
<td>25C</td>
<td>Moving beyond Fleet Management 101, this session will focus on the difficult aspects of fleet management, including fleet certification, vehicle optimization, and securing management approval for progressive initiatives.</td>
</tr>
<tr>
<td>16</td>
<td>DOE and Pacific Northwest National Laboratory developed a list of top 10 energy-efficient technologies for the building sector that represent good cost value and are innovative, reliable and accessible. Manufacturers will discuss the benefits to both domestic and international consumers. Participants will hear the consumer perspective on the benefits of including energy-efficient technologies in buildings.</td>
</tr>
<tr>
<td>11</td>
<td>Learn about organizations that have implemented campus-wide programs to improve laboratory efficiency and safety, a.k.a Smart Labs Programs. Presenters will discuss how they assessed their labs and the Smart Lab impact on energy savings and safety protocols. Hear their techniques for engaging with research staff and building occupants to achieve energy savings.</td>
</tr>
</tbody>
</table>

**PANELISTS**

- **Randy Monahan**, U.S. Marine Corps
- **Jermaine Hector**, U.S. Army
- **Sam Smith**, U.S. Dept. of Veterans Affairs
- **Ashley Haugo**, Concurrent Technologies Corporation
- **Jonathan Belivakici**, Federal Bureau Of Prisons
- **Deb Vasquez**, National Renewable Energy Laboratory
- **Trey Lewis**, Pacific Northwest National Laboratory
- **Mike Callahan**, National Renewable Energy Laboratory
- **Kate McMordie Stoughton**, Pacific Northwest National Laboratory
- **Patrick McConnell**, U.S. General Services Administration
- **Linda Jeng**, Dow Building Solutions
- **Trey Lewis**, Pacific Northwest National Laboratory
- **Mike Callahan**, National Renewable Energy Laboratory
- **Linda Jeng**, Dow Building Solutions
- **Trey Lewis**, Pacific Northwest National Laboratory
- **Mike Callahan**, National Renewable Energy Laboratory
- **Mark Lessans**, Ingersoll Rand
- **Linda Jeng**, Dow Building Solutions
- **Robert King**, Target
- **Wendell Brase**, University of California, Irvine
- **Samuel Paulsen**, Pacific Northwest National Laboratory
- **Sonia Ballesteros**, Los Alamos National Laboratory
- **Lindsay Parker**, U.S. Dept. of Energy
- **Deb Vasquez**, National Renewable Energy Laboratory
- **Robert King**, Target
- **Mike Callahan**, National Renewable Energy Laboratory
- **Lindsay Parker**, U.S. Dept. of Energy
- **Rachel Shepherd**, U.S. Dept. of Energy
**WEDNESDAY: 8:30 AM – 10:00 AM**

**ALL SESSIONS**

<table>
<thead>
<tr>
<th>Panel</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workforce, Management, and Policy Drivers</strong></td>
<td>Facility-Related Cybersecurity Workforce Requirements and Credentialing <strong>T1S4</strong></td>
</tr>
<tr>
<td></td>
<td>Workforce Development and Engagement</td>
</tr>
<tr>
<td></td>
<td>Policy and Strategies</td>
</tr>
<tr>
<td></td>
<td>Partnering Strategically with FEMP</td>
</tr>
<tr>
<td></td>
<td>Measuring Program Performance: Reporting and Scorecards <strong>T2S4</strong></td>
</tr>
<tr>
<td></td>
<td>FEMP-DHS Partnership <strong>T3S4</strong></td>
</tr>
<tr>
<td><strong>Resilience and Energy Contingency Planning Implementation</strong></td>
<td>Planning for Mission-Driven Resilience</td>
</tr>
<tr>
<td></td>
<td>Continuity of Operations: Resilience and Contingency Solutions</td>
</tr>
<tr>
<td></td>
<td>Distributed Generation: Contribution to Resilience</td>
</tr>
<tr>
<td></td>
<td>Planning Examples <strong>T4S4</strong></td>
</tr>
<tr>
<td></td>
<td>Integrated Solutions Sets: Generation and Fuel Diversity <strong>T5S4</strong></td>
</tr>
<tr>
<td></td>
<td>Optimizing Energy and Water Resources to Support Distribution Systems <strong>T6S4</strong></td>
</tr>
</tbody>
</table>

**ROOM 19**

Energy Managers must rely on experts to cyber secure facility-related control systems and critical facility energy. This session will discuss the knowledge, skills and abilities, and certifications and accreditations required of the cyber professional working with the Energy Manager to ensure cyber secure systems.

**ROOM 6**

Get the latest results and updates on the OMB Sustainability and Energy Scorecards and federal agency Strategic Sustainability Performance Plans. Panelists will provide updates on the next end-of-year scorecard, sustainability planning, reporting cycles and new changes. Ask the experts about their own reporting challenges during Q&A.

**ROOM 21**

This session will highlight the Federal Energy Management Program’s (FEMP) partnership with the U.S. Department of Homeland Security, demonstrating the successful outcome of the partnership a replicable systematic framework approach to prioritizing projects and measures to reduce energy use and strengthen resilience in Federal facilities.

**ROOM 25A**

Hear from agencies and industry who have completed actual installation energy and water plans, with a specific emphasis on resilience. This will be a participation-based session with panelists talking about the processes they undertook to develop their installation energy and water plans, with input on what needs to go into them and other advice for how to develop them.

**ROOM 5**

System optimization goes beyond energy and water equipment efficiency. To maintain and enhance the distribution system, facility managers must optimize both load efficiency and maintenance requirements to support operations. Learn how to optimize energy and water resources to support distribution systems.

**PANELISTS**

**Clarence Williams**, National Institute of Standards and Technology

**Wanda Lenkewich**, Chinook Systems

**Michael Schroeder**, 3 Territory Solutions

**Cynthia Vallina**, Office of Management and Budget

**Chris Tremper**, U.S. Dept. of Energy

**Crystall Merlino**, U.S. Dept. of Homeland Security

**Jerry Davis**, National Renewable Energy Laboratory

**Rachel Romero**, National Renewable Energy Laboratory

**Audrey Oxendine**, U.S. Army-Ft. Bragg

**Edith Evans**, U.S. Navy

**Kathleen Richardson**, U.S. Air Force

**Mike Savena**, U.S. Navy

**Nicholas Judson**, MIT Lincoln Laboratory

**Hubert Smigelski**, U.S. Marine Corps

**Brian Boyd**, Pacific Northwest National Laboratory

**Nichole Townsend**, U.S. General Services Administration

**William Chvala**, Pacific Northwest National Laboratory

**Lyman Parkhurst**, USAG Italy
How can you “clone yourself” to meet the challenges of aging infrastructure, executive mandates for resilience planning, and limited resources for energy-related programs? Use a Resource Efficiency Manager! A REM is a full-time, on-site energy professional who supports agencies in advancing energy and water conservation programs to achieve resilient, efficient and secure installations. This “game show” session features DPW personnel, agency energy managers, REMs and others answering questions.

Saving energy is typically cheaper than generating it, and deep energy retrofits paired with triggers, like planned renovations or end-of-life for major building equipment, can cut energy costs by 50% or more. Deep retrofits bundle systems requiring updates to multiply savings opportunities. Federal agency and ESCO representatives will learn best practices to push their next energy savings performance contract project to deeper levels of energy savings.

Learn about advances in microgrid design and technology through case studies and presentations from researchers and technology developers. In addition to providing energy resilience and operational flexibility, advanced microgrids enable new utility and energy market participation. Advances in sensors and controls provide better control of distributed energy resources allowing higher penetration of renewable energy and lower life-cycle costs.

Hear from IT professionals and energy managers on successful collaborations, and learn how energy initiatives can be improved by working with IT professionals early and often. This session will highlight how projects can be streamlined so that project benefits can be realized as quickly as possible.

### Resource Efficiency Managers

**T7S4**

### Deep Retrofit How To

**T8S4**

### Advanced Microgrid Solutions

**T9S4**

### Planning and Partnering with IT Professionals

**T10S4**

### Building Optimization Essentials

### Data Literacy

### Emerging Technologies

### Cybersecurity Technologies and Control Systems

### Panelists

**Allen Honey**, Blount Island REM  
**Teresa Whalen**, U.S. Army Corps of Engineers  
**Josh Smith**, Erica Lane  
**Jim Perkins**, Tetratech  
**Jarrod Ross**, Ft Hunger Liggett  
**Kristin Cox**, U.S. Army

**Kevin Kampschroer**, U.S. General Services Administration  
**Nicole Bulgario**, Ameresco  
**Kevin Carroll**, U.S. Dept. of Energy  
**Alexander Zhivov**, U.S. Army Corps of Engineers

**Dave Altman**, Raytheon  
**Brian Miller**, National Renewable Energy Laboratory  
**Greg Vallery**, U.S. Army

**Phil Owen**, AECOM  
**Judy Smith**, U.S. General Services Administration  
**Jeff Edwards**, TSI

2018energyexchange.com
This session will explore ways to identify and communicate the intangible benefits of performance contracting projects. Learn how to develop agency enthusiasm and support in communicating such efforts and how these benefits can be monetized to enhance project viability.

This session will discuss the use of FEMP tools to implement alternative water projects at federal facilities and give examples from agencies that already use alternative water sources.

The wealth of data collected from vehicles through telematics provides a new platform for predictive analytics. Learn how private fleets, data companies, and GSA use big data to make fleet management decisions.

**PANELISTS**

Tony Mayfield, Redhorse Corporation  
Sam Alvord, U.S. Coast Guard  
Tom Hattery, Oak Ridge National Laboratory  

Bob Slattery, Oak Ridge National Laboratory  
Kevin Warner, EMP2, Inc.  
Jason Bray, U.S. Army Corps of Engineers  

Anibal Negron, U.S. Army-Fort Buchanan  
Trey Lewis, Pacific Northwest National Laboratory  

Jean Pilon-Bignell, Geotab  
Brendan Wiggins, Pepsi  
Jessica Huff, U.S. General Services Administration
**WEDNESDAY: 8:30 AM – 10:00 AM**

### BETTER BUILDINGS PEER EXCHANGE AND LEARNING

#### Data Centers

- **Better Buildings Data Center Partner Roundtable**
  - T16S4a

#### Better Buildings Partner Meet-Ups and Workshops

- **MANUFACTURING:**
  - CHP TAPs Talk
    - T19S5a
  - Using 50001 Ready to Help Meet Your Energy Goals
    - T19S5a

### MANUFACTURING:

#### Using 50001 Ready to Help Meet Your Energy Goals (9:00 - 11:30 AM)

**ROOM 24**

50001 Ready is a no-cost, self-guided approach to tracking and managing energy use to improve the performance of your facility, campus, or building. Designed by DOE, this session will introduce the 50001 Ready Navigator online tool, and highlight lessons learned from experts who have implemented an energy management system in their organizations. See how 50001 Ready can help you make the next leap towards meeting your energy goals.

**MODERATOR**

Pete Langlois, U.S. Dept. of Energy

**PANELISTS**

Cliff Haefke, Midwest and Central CHP TAPs
Dr. David Dvorak, New England CHP TAP
Tom Bourgeois, New York-New Jersey CHP TAP
Dr. Jim Freihaut, Mid-Atlantic CHP TAP
Isaac Panzarella, Southeast CHP TAP
Dr. Gavin Dillingham, Southcentral and Upper-West CHP TAPs
Gene Kogan, Western CHP TAP
David Van Holde, Northwest CHP TAP

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA's deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 14**

A meet and greet forum that will provide the audience insight and updates on current CHP TAP project end user engagements, stakeholder engagements, and technical services across the United States. Join us in a lively discussion on what Combined Heat and Power (CHP) means to you. Resiliency? Cost Savings? Environmental Savings? Energy Security?

**MODERATOR**

Steve Greenberg, Lawrence Berkeley National Laboratory

**PANELISTS**

Cliff Haefke, Midwest and Central CHP TAPs
Dr. David Dvorak, New England CHP TAP
Tom Bourgeois, New York-New Jersey CHP TAP
Dr. Jim Freihaut, Mid-Atlantic CHP TAP
Isaac Panzarella, Southeast CHP TAP
Dr. Gavin Dillingham, Southcentral and Upper-West CHP TAPs
Gene Kogan, Western CHP TAP
David Van Holde, Northwest CHP TAP
Moderator

**ROOM 8**

Engage with data center leaders in an interactive roundtable! Come to connect, share lessons learned and best practices, and discuss challenges with others that are facing or have already addressed the same issues.

**MODERATOR**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**PANELISTS**

Cliff Haefke, Midwest and Central CHP TAPs
Dr. David Dvorak, New England CHP TAP
Tom Bourgeois, New York-New Jersey CHP TAP
Dr. Jim Freihaut, Mid-Atlantic CHP TAP
Isaac Panzarella, Southeast CHP TAP
Dr. Gavin Dillingham, Southcentral and Upper-West CHP TAPs
Gene Kogan, Western CHP TAP
David Van Holde, Northwest CHP TAP
Moderator

Dr. Tarla Toomer, U.S. Dept. of Energy

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

**MODERATOR**

Krystal Laymon, U.S. Dept. of Energy

**PANELISTS**

Hans Berg, State of Washington
Alana Mathews, California Energy Commission
Kerry O’Neill, Connecticut Green Bank
Terri Novak, State of Michigan

**ROOM 9**

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA’s deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.
## Better Buildings Summit track / session

### Wednesday: 8:30 AM – 10:00 AM

**ALL SESSIONS**

### BETTER BUILDINGS PEER EXCHANGE AND LEARNING

#### Better Buildings Partner Meet-Ups and Workshops

<table>
<thead>
<tr>
<th>Room</th>
<th>Session Description</th>
<th>Panelists</th>
<th>Moderator</th>
</tr>
</thead>
</table>
| 11   | Meet with Better Buildings Challenge and Alliance partners from the Commercial Real Estate (CRE) sector! This interactive session is an opportunity to connect and converse with peers, share accomplishments and challenges, and address topics such as resiliency infrastructure for the CRE sector, efficiency in Class B and C buildings, and making the business case for submetering. | Alex Harry, Institute for Market Transformation  
John Scott, Colliers International | Cindy Zhu, U.S. Dept. of Energy |

#### Multifamily

<table>
<thead>
<tr>
<th>Room</th>
<th>Session Description</th>
<th>Panelists</th>
<th>Moderator</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Multifamily Partners are invited to attend our Sector Meet-Up, a chance to recount the past year’s accomplishments, share best practices in energy and water conservation planning, and look ahead to the next year of working towards making the multifamily sector more fiscally and environmentally sustainable.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WEDNESDAY: 10:30 AM – 12:00 PM

**WORKFORCE, MANAGEMENT, AND POLICY DRIVERS**

- **Workforce Development and Engagement**
  - Best Practices for Leadership and Organizational Design

- **Policy and Strategies**
  - Civilian Agency Panel

- **Partnering Strategically with FEMP**
  - FEMP-NASA Partnership

**RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION**

- **Planning for Mission-Driven Resilience**
  - Exercises: Working with Utilities

- **Continuity of Operations: Resilience and Contingency Solutions**
  - Integrated Solution Sets: Energy Storage

---

**ROOM 19**

Meet representatives across the Federal government empowering employees to make positive change. Learn the role of the Energy Manager, where they fit and how to leverage skills to achieve Federal agency goals. Agency reps will bring unique perspectives on engaging the HR community and how they are meeting Executive Order 13834: Efficient Federal Operations.

**PANELISTS**

- Brian Gilligan, U.S. General Services Administration
- Eric Guthrie, U.S. Dept. of State
- Bernie Lindsey, U.S. Navy
- Allan Federman, U.S. Dept. of Veterans Affairs

**ROOM 6**

Energy leaders from civilian federal departments and agencies will join you for a discussion on their latest strategies and programs. This is a moderated format where participants will have an opportunity for questions and answers with these speakers. Come and engage in the dialogue!

**PANELISTS**

- Kevin Kampschroer, U.S. General Services Administration
- Teresa Pohman, U.S. Dept. of Homeland Security
- David Wagner, U.S. Dept. of Veterans Affairs
- Tom Day, U.S. Postal Service

**ROOM 21**

This session will highlight the Federal Energy Management Program’s (FEMP) partnership with the National Aeronautics and Space Administration (NASA), demonstrating best practices and highlighting the power of partnerships.

**PANELISTS**

- Missy Ferguson, National Aeronautics and Space Administration
- Jeffrey Murrell, U.S. Dept. of Energy
- Juan Tiscaréno, National Aeronautics and Space Administration
- Joan Hughes, National Aeronautics and Space Administration
- Wayne Thalasinos, National Aeronautics and Space Administration

**ROOM 7**

Attendees will hear about how installations and federal facilities can partner with utilities through national and regional level exercises to explore the impact energy and water disruptions will have on operations.

**PANELISTS**

- Kevin Kampschroer, U.S. General Services Administration
- Teresa Pohlman, U.S. Dept. of Homeland Security
- David Wagner, U.S. Dept. of Veterans Affairs
- Tom Day, U.S. Postal Service
- Michael Partyka, U.S. Navy
- Clark Wiedetz, Siemens Industry
- Thomas Tarka, National Energy Technology Laboratory

**ROOM 25A**

Recent events like Hurricane Maria have highlighted the need for better resilient power solutions; many diesel generators provided limited support due to equipment failure and fuel shortages. Industry trends show energy storage has become more economical and viable in resilience planning. Learn about the latest storage technologies for meeting critical loads.

**CEU**
### Distributed Generation: Contribution to Resilience

- **Room:** 5

Many sites have existing assets that can form the basis of the infrastructure needed for critical resiliency and contingency needs. This session will explore how to transition your existing asset portfolio and expand your system for the best outcomes in the worst situations.

#### Panelists
- **Mick Wasco,** U.S. Marine Corps
- **Philip Barton,** Schneider Electric
- **Gerard Nolan,** EDF Renewable Energy

### Building Optimization Essentials

- **Room:** 15

The session will review and explain many facets of a comprehensive O&M program for beginner- or intermediate-level facility personnel. Come learn the five points of a basic O&M program that will help reduce capital repairs and unscheduled shutdowns and repairs; extend equipment and facility life; maintain life-cycle cost savings; and provide safe, functional systems and facilities that meet the design intent.

#### Panelists
- **Greg Palko,** Ameresco
- **Woody Thomson,** RS&H, Inc.

### Data Literacy

- **Room:** 20

Existing Building Commissioning (EBCx) processes can bring a previously-commissioned building back inline or optimize a building. Speakers will discuss the EBCx process and best practices. Ongoing Commissioning (OCx) maintains and continuously improves building performance over time. Learn about applying Monitoring-Based Commissioning in OCx. Review the typical data collected with EMIS and BAS and data analysis through Automated Fault Detection and Diagnostics.

#### Panelists
- **Jay Tulley,** U.S. Army
- **Brian Clark,** U.S. Army Corps of Engineers
- **Carl Lundstrom,** Dewberry

### Commissioning for Persistence

- **Room:** 26B

Distributed energy provides many options to improve energy security at federal facilities; increasingly cost-competitive with grid power, it's more viable to be fully-powered by on-site assets. But this poses unique challenges. Learn how to integrate traditional, renewable and energy storage assets to deliver a viable project that bolsters resilience.

#### Panelists
- **Scott Slisher,** AEP Energy
- **Frank Renovich,** Kent State University
- **Bill Mayyou,** AT&T
- **Matt Rush,** Resilient Strategies
- **Harry Sim,** Cypress Envirosystems

### Emerging Technologies

- **Room:** 4

Learn how the Internet of Things (IoT) is becoming essential to achieving mission resilience and energy savings, and how federal government facilities can securely tie these technologies to the cloud. This session will focus on specific IoT examples and benefits that have been realized already, and why these solutions will expand in the future.
This session will highlight the challenges and opportunities related to delivering cost-effective, resilient projects. It will help participants understand the financing paths being pursued to optimize resilient projects in an effort to achieve project scope, strategic alignment and cost-effectiveness.

This session will explore what government agencies need from utilities and what utilities need from government agencies to build successful project partnerships. This panel of key federal leaders and utility representatives will discuss a variety of topics including utility offerings and programs, interconnections agreements, and utility/government risk sharing among others.

This session will demonstrate how FleetDASH can identify practical strategies for increasing alternative fuel use by influencing driver behavior and properly placing alternative fuel vehicles. In addition, it can be used to identify candidates for Alternative Fuel Vehicle (AFV) acquisitions.

**PANELISTS**

- Krista Stehn, U.S. Army
- John Baxter, U.S. Dept. of Defense
- Randy Monohan, U.S. Marine Corps
- Jason Masters, U.S. Dept. of Veterans Affairs
- Karen Thomas, National Renewable Energy Laboratory
- Randy Smidt, U.S. Army
- Lara (Gast) Spader, U.S. Dept. of Veterans Affairs
- Peter Giannotti, Southern California Edison
- Fred Parry, Dominion Energy Virginia
- Eric Elam, Water Savers
- Emily Wendel, Pacific Northwest National Laboratory
- Mark Singer, National Renewable Energy Laboratory
- Varun Sood, U.S. Army Reserves
- Lara (Gast) Spader, U.S. Dept. of Veterans Affairs
- Matt Sawatzki, Booz Allen Hamilton
Many organizations are facing the same dilemma: dispersed data centers with inefficient IT acquisitions and operations. Solving this problem and grasping the opportunity it presents is an organizational hurdle requiring stakeholder involvement and alignment. Learn about Better Buildings partners' successes in consolidating their data centers and finding savings.

Join a Roundtable discussion with leading retail, real estate, utility and state executives exploring valuable new opportunities to save money and energy with advanced energy management, smart controls, and connected technologies. This dynamic discussion will focus on how buildings with advanced energy efficiency and load shaping capabilities will provide new benefits for building owners and tenants, help meet resilience needs, and better integrate renewables.

The Clean Energy for Low Income Accelerator (CELICA) sunsets Summer 2018, meaning all 37 CELICA partners, 16 national partners, and DOE/National Renewable Energy Lab staff will convene to reflect on the results. This will be an opportunity to reflect on partner accomplishments, showcase CELICA's deliverables, gather feedback on lessons learned, and discuss next steps. Open to CELICA partners only.

This is a forum to help participants address the challenges of operating 19th-century education facilities and bridging to the best practices of 21st-century smart education campuses. Starting with the basics of benchmarking buildings to advanced design and construction of zero energy schools, our presenters will share the latest methodologies, tools, and gains in creating optimal learning environments for students at all levels. This session is open to all higher education and K-12 facilities professionals as well as supporting administrators, architects, engineers, and other building professionals.
### BETTER BUILDINGS PEER EXCHANGE AND LEARNING

**ROOM 11**

What are the current and new sustainability trends for commercial real estate institutional owners and real estate investment managers? Find out here! Topics include GRESB updates, meeting global and corporate sustainability goals, responding to resiliency and weather disasters, and engaging investors in energy matters. Better Buildings Challenge and Alliance partners will share their insights and engage with audience stakeholders on how to move the industry forward.

#### PANELISTS

- Brenna Walraven, Corporate Sustainability Strategies
- Eric Duchon, LaSalle Investment Management
- Meghan Johnson, TH Real Estate

#### Moderator

Deb Cloutier, RE Tech Advisors

### ROOM 10

RFSG sector partners have identified workforce issues related to HVAC and refrigeration maintenance as a significant concern. Come share solutions and learn what some partners are doing to address and correct these issues.

#### PANELISTS

- Bruce Condit, Professional Retail Store Maintenance Association

#### Moderator

Cedar Blazek, U.S. Dept. of Energy

### ROOM 13

In Part 2 of this session, sector partners will share best practices in energy and water conservation planning. We’ll learn about finding financing solutions for energy efficiency projects through the Better Buildings Financing Navigator 2.0, and we’ll look ahead to next year, working to make the multifamily sector more fiscally and environmentally sustainable.

#### PANELISTS

- Peter Lewis, Schochet Companies
- Holt Mountcastle, RE Tech Advisors
- Ruchi Shah, Tenderloin Neighborhood Development Corporation

#### Moderator

Crystal Bergemann, U.S. Dept. of Housing and Urban Development
**WEDNESDAY: 2:00 PM – 3:30 PM**

**WORKFORCE, MANAGEMENT, AND POLICY DRIVERS**

**Partnering Strategically with FEMP**

**RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION**

- Resilience Roundtable
  - T3S6

**OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS**

**Optimizing Design, Operations, and Maintenance for Smarter Buildings**

- Building Optimization Essentials
  - Data Literacy

**ROOM** Grand Ballroom A

The Resilience Roundtable will focus on the federal, state and city level approaches to implementing resilience.

**PANELISTS**

- Sandy Morgan, U.S. Dept. of Agriculture
- Alison Silverstein, Consultant
- John Scott, Colliers International
- Matthew Lynch, University of Hawaii
- Ryan Halsey, Pacific Gas & Electric Company

**ROOM** 5

Combined Heat and Power (CHP) technology can be used to enhance energy security and resilience at federal facilities. While CHP has been employed in industrial, commercial, and institutional applications for years, this technology is gaining a reputation for providing highly-efficient electricity and process heat to federal agencies. Micro CHP provides the opportunity to solve unique local small-scale challenges. Learn about CHP assessment methodologies, unique considerations, and lessons from implementation via case studies.

**PANELISTS**

- Deven Rock, U.S. Army
- Russ Gagner, U.S. Navy
- Don Guan, National Institutes of Health

**ROOM** 15

Executing a great O&M practice is challenging. Join us to learn what is preventing you from taking your O&M program to the next level, and learn how to build a successful program. We will address the nuts and bolts and challenges of budgeting, communication plans with stakeholders, and incorporating energy performance goals in O&M contracts.

**PANELISTS**

- Scott Walters, Wood PLC
- Kevin Brown, ABM

**ROOM** 20

Reliability Centered Maintenance principles are being successfully applied by to enhance the reliability of mission critical equipment. This includes a Failure Mode Effects and Criticality Analysis (FMECA) that evaluates the possibility and risks of failure and the associated consequences. It results in a maintenance program that focuses scarce resources on items that would cause the most disruption to operations if they were to fail, and it enables data driven repair/replace decision making along with feedback to the design and construction community.

**PANELISTS**

- Burr Vogel, U.S. Navy
- Rob Bucey, Jacobs
- Robert Poche, Jacobs

**CEU FBPTA**
### HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS

#### Emerging Technologies
- Advanced Energy Storage Systems
- Cybersecurity Technologies and Control Systems

#### Secure Wireless Sensor Systems
- T056

### ROOM 26B

This session will present available technologies and benefits for implementing advanced energy storage solutions. New technologies are coming on the market and old technologies are being dusted off and updated. These advances make energy storage an economical and viable option for facility and campus energy. Panelists will show how building automation technology can facilitate seamless integration of energy storage into building facility power systems.

**PANELISTS**
- Travis Starns, AECOM
- Tyler Givens, ABM
- Bob Turk, Idaho National Laboratory

### ROOM 4

Wireless sensor systems are becoming a reality, but can they safely be installed in the federal space? This session will showcase two wireless sensor networks that have been installed at GSA and the Air Force, including what technologies were used and the challenges of getting them approved on federal networks. A preview of a wireless sensor of the future will be given, focusing on the work done to date on the cybersecurity layer using a blockchain approach.

**PANELISTS**
- Julian Lamb, Paragon Robotics
- Michael Andersen, University of California, Berkeley
- Kevin Powell, U.S. General Services Administration

### ROOM 26C

Session speakers will highlight their experiences from projects that are 5 years or more into the performance period. This will be an opportunity to revisit past successes and challenges and highlight lessons learned.

**PANELISTS**
- Don Coffey, Johnson Controls
- John Belivakici, U.S. Dept. of Justice
- Nathan Pennington, U.S. Dept. of Veterans Affairs

### ROOM 26A

This session will review the Utility role within UESCs and other energy related services to its Federal customers. We will discuss performance contracting, energy conservation, distributed generation, alternative financing, and resiliency.

**PANELISTS**
- Dave Guebert, San Diego Gas and Electric
- Anthony Spera, ConEdison
- Evan Bishop, U.S. Dept. of Veterans Affairs
- Robert Johnson, Hannon Armstrong
This year's All Partner Gathering is an important opportunity for Better Plants participants to network, check in, and provide feedback to the program. During the event, attendees will see their peers recognized for Better Project/Practice awards and program goal achievement, as well as 50001 Ready and Superior Energy Performance. In addition, partners will hear Advanced Manufacturing Office leadership's vision for Better Plants going forward and the latest in technology innovation.

Most data centers have some room for improvement when it comes to providing efficient air cooling for their IT equipment. Find out why air management should be your first target in improving your data center. Learn from Lawrence Berkeley National Lab and other Better Buildings partners as they share their experiences and successes in data center cooling.

Utility representatives will explain what the market for electric vehicles (EVs) means from their perspective and how they can help fleets. The panel will focus on electrical infrastructure necessary to support EV deployment, where the market is moving, and how EVs can provide demand response, energy storage, and ancillary services to the grid.

This session will discuss the challenges and opportunities facilities face in water infrastructure. Specific examples will show how water managers are strategically planning for investing in their water infrastructure and how resilience can play a critical role in the investment strategy. Discussions will include information on securing back up water supplies and upgrading distribution system infrastructure.

**PANELISTS**

**Greg Vallery**, U.S. Army  
**Loida Begley**, U.S. Dept. of Energy  
**Ralph Eschborn**, AECOM

**Chris Ferrara**, Pacific Gas & Electric  
**Darren Epps**, Southern Company

**PANELISTS**

**Steve Greenberg**, Lawrence Berkeley National Laboratory  
**Norm Bourassa**, National Energy Research Scientific Computing Center  
**Robert Dyrdak**, U.S. Army  
**Terry DeVitt**, U.S. Army

**PANELISTS**

**Eli Levine**, U.S. Dept. of Energy  
**Rob Ivester**, U.S. Dept. of Energy  
**Thomas Wenning**, Oak Ridge National Laboratory

**Moderator**  
Dale Sartor, Lawrence Berkeley National Laboratory
**BETTER BUILDINGS PEER EXCHANGE AND LEARNING**

**Better Buildings Partner Meet-Ups and Workshops**

- **Hospitality Sector Meet-Up**
  - ROOM 12
  - Meet with fellow Better Buildings Challenge and Alliance partners from the hospitality sector and take advantage of the opportunity to connect and converse with peers, share accomplishments and challenges, and address topics including franchisee engagement and corporate goal setting for greater energy efficiency.

- **Healthcare Sector Meet-Up Part 1**
  - ROOM 10
  - Healthcare sector partners at this meet-up will discuss sector priorities, review progress so far, and workshop new ideas for the 2018-2019 year.

- **Local Government Meet-Up Part 1**
  - ROOM 9
  - Engage with leaders from the local government sector. This interactive meet-up will be an opportunity for local government attendees to connect and exchange best practices with peers, share accomplishments and challenges in a candid format, and learn about innovations happening at the local level.

- **State Government Meet-Up Part 1**
  - ROOM 13
  - Network with state colleagues from across the nation! State representatives are invited to an annual peer forum that can provide new ideas to take back to the office. This year we will discuss commercial PACE financing, working with specific sectors toward state energy efficiency, and effective stakeholder engagement approaches to reinforce your initiatives.

- **Smart Labs Accelerator Partner Meet-Up**
  - ROOM 11
  - Participants in this meet-up will review the current draft of the Smart Labs Program roadmap and the current roadmap for Smart Labs partners.

**PANELISTS**
- **Jagruti Panwala**, Asian American Hotel Owners Association
- **Raakesh Patel**, Super 8 Ukiah
- **Jay Wrobel**, U.S. Dept. of Energy
- **Matthew Gray**, Cleveland, OH
- **AnnaMaria Garcia**, U.S. Dept. of Energy
- **Sean Williamson**, U.S. Dept. of Energy
- **Shawna Cuan**, State of Utah
- **Michael Reinhardt**, Commonwealth of Massachusetts
- **Megan Levy**, State of Wisconsin
- **Paul Miller**, Baton Rouge Clean Air Coalition
- **Rick Bender**, Commonwealth of Kentucky
- **Becca Trietch**, State of Rhode Island
- **Cindy Zhu**, U.S. Dept. of Energy

**MODERATOR**
- **Nathaniel Allen**, U.S. Dept. of Energy
- **Moderators**
  - Adam Guzzo, U.S. Dept. of Energy
  - Jonah Steinbuck, U.S. Dept. of Energy
  - Rachel Shepherd, U.S. Dept. of Energy

**PANELISTS**
- **Otto VanGeet**, National Renewable Energy Laboratory
- **Suzy Belmont**, National Renewable Energy Laboratory
This session will help energy managers communicate and engage with the stakeholders critical to achieving their goals. Participants will leave with specific ideas of information to share with facility managers, building operators and utility system operators including top-10 tips, examples of data sharing that help spur action, and proven methods to improve awareness and engagement.

**PANELISTS**

Jay Tulley, U.S. Army  
Ryan Spies, Saint-Gobain  
Shanti Pless, National Renewable Energy Laboratory  
William Gee, New City Energy

**PANELISTS**

Katherine Hammack, Ernst & Young  
Timothy Byers, Jacobs  
H.G. Chissell, Advanced Energy Group

**PANELISTS**

Joseph Cecrele, U.S. Air Force  
Ken McKuen, U.S. Air Force  
John Bethea, Honeywell  
Jay Wrobel, U.S. Dept. of Energy

**PANELISTS**

TARONE WATLEY, U.S. Air Force  
ANU NARAYANAN, RAND Corporation  
JOHN BETHEA, Honeywell  
JAY WROBEL, U.S. Dept. of Energy

**PANELISTS**

Stephen Batson, Deloitte  
Daryl Haegley, U.S. Dept. of Defense  
John Collins, FoxGuard Solutions  
George Steuber, U.S. Army-Ft Benning

**PANELISTS**

Scott Foster, Bostonia  
Robi Robichaud, National Renewable Energy Laboratory  
John Kleim, U.S. Navy  
Steve Smith, Energy Systems Group
### OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS

<table>
<thead>
<tr>
<th>Room</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Audits Part I</td>
</tr>
<tr>
<td>20</td>
<td>Enterprise Analytics: What Do We Do with the Data Dump?</td>
</tr>
<tr>
<td>26B</td>
<td>Indoor Environmental Quality for Energy and Productivity</td>
</tr>
<tr>
<td>4</td>
<td>Cybersecure Building Automation System Applications</td>
</tr>
</tbody>
</table>

#### Room 15

Learn the steps involved in identifying energy conservation measures (ECMs) and how they can be developed as part of cost-effective, energy savings projects. This session will discuss traditional and virtual audits and data collection points. We will actually perform a lighting audit during this session to illustrate the importance and cost-impact of data collection.

**CEU FBPTA**

**Panelists**

Steve Terrell, Wood PLC  
Joshua New, Oak Ridge National Laboratory  
Blaine Laughlin, Cintel  
Jason Gladney, Southland Energy  
Claire Curtin, Lawrence Berkeley National Laboratory

---

### HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS

<table>
<thead>
<tr>
<th>Room 26B</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>26B</td>
<td>Advances in building sensors, HVAC and lighting allow us to create highly-efficient, modern spaces for federal employees. Do these technologies also improve indoor air quality and productivity? Learn how 3 research teams are using a distributed sensor network to create an accurate picture of building performance and its effect on employees while reducing cost.</td>
</tr>
</tbody>
</table>

**CEU**  
**Panelists**

Brian Gilligan, U.S. General Services Administration  
Chris Pyke, U.S. Green Building Council  
Forrest Meggers, Princeton University  
Scott Boehm, Vykon Energy Building Security  
Tapan Patel, U.S. Army Corps of Engineers  
Fred Gordy, Intelligent Buildings  
Eric Lynch, U.S. Army Corps of Engineers

---

### FINANCING, PERFORMANCE CONTRACTING, AND UTILITY PARTNERSHIPS

<table>
<thead>
<tr>
<th>Room 26C</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>26C</td>
<td>Legal and contracting issues are important drivers in the development, implementation and life of federal energy and infrastructure projects. Join a roundtable of experienced energy and infrastructure lawyers to discuss hot topics, best practices and lessons learned in performance contracting and third-party financing. Bring your questions, issues and ideas!</td>
</tr>
</tbody>
</table>

**CEU**

**Panelists**

Margaret Simmons, U.S. Army Corps of Engineers  
Richard Butterworth, Kutak Rock  
Michael Jensen, U.S. Dept. of Energy  
Allan Curlee, U.S. Air Force  
Ryan Hernandez, U.S. Army-Ft. Hood  
Paul Matthews, Dominion Energy
This year's All Partner Gathering is an important opportunity for Better Plants participants to network, check in, and provide feedback to the program. During the event, attendees will see their peers recognized for Better Project/Practice awards and program goal achievement, as well as 50001 Ready and Superior Energy Performance. In addition, partners will hear Advanced Manufacturing Office leadership's vision for Better Plants going forward and the latest in technology innovation.

As organizations continue to invest in more powerful IT equipment, data center server racks are packing in ever-higher electrical loads. Liquid cooling is a way to handle these higher loads more efficiently. This session will explore the possibilities for liquid cooling in the data center industry. Better Buildings partners will share their insights on implementing liquid cooling in their data centers.

This session will dive into water vulnerabilities and how to invest in key equipment and infrastructure to increase water resilience. We will also share tools for identifying existing methods of non-market valuation of water resilience.

Listen to fleet managers and system providers as they illustrate how to integrate their Fleet Management Information Systems (FMIS) with telematics, Federal Automotive Statistical Tool (FAST), and other data systems for smarter fleet management.

CEU

**PANELISTS**

**Darren Newton**, U.S. Navy

**Doug Elliott**, Pacific Northwest National Laboratory

**Elisabeth Jenicek**, U.S. Army Corps of Engineers

**Joe Crea**, Raftelis

**PANELISTS**

**Liz Walter**, U.S. Navy

**David Jackson**, U.S. Dept. of Veterans Affairs

**James Gough**, U.S. Marine Corps

**PANELISTS**

**Norm Bourassa**, National Energy Research Scientific Computing Center

**Otto VanGeet**, National Renewable Energy Laboratory

**Eli Levine**, U.S. Dept. of Energy

**Rob Ivester**, U.S. Dept. of Energy

**Thomas Wenning**, Oak Ridge National Laboratory

**Moderator**

Dale Sartor, Lawrence Berkeley National Laboratory
### BETTER BUILDINGS PEER EXCHANGE AND LEARNING

**BETTER BUILDINGS PARTNER MEET-UPS AND WORKSHOPS**

**Strategies for Piloting High Impact Technologies Featuring the Hospitality Sector**  
T17S7a

**Healthcare Sector Meet-Up Part 2**  
T17S7b

**Local Government Meet-Up Part 2**  
T17S7c

**State Government Meet-Up Part 2**  
T17S7d

**Ventilation Management in Laboratories: Big Energy Savings and Improved Safety**  
T17S7e

<table>
<thead>
<tr>
<th>ROOM</th>
<th>12</th>
<th>10</th>
<th>9</th>
<th>13</th>
<th>11</th>
</tr>
</thead>
</table>

**This technology roundtable centers on evaluating and implementing emerging technologies in commercial buildings. Hospitality Better Buildings partners and National Lab representatives will share their experiences with technology verification and pilot projects. We will also introduce the new Better Buildings Technology Pilot Forum. This session covers technologies applicable to all commercial sectors.**

**PANELISTS**

- Douglas Rath, Marriott International
- Michael Deru, National Renewable Energy Laboratory

**MODERATOR**

Nathaniel Allen, U.S. Dept. of Energy

---

**Healthcare sector partners at this meet-up will discuss sector priorities, review progress so far, and workshop new ideas for the 2018-2019 year.**

**PANELISTS**

- Holt Mountcastle, RE Tech Advisors
- Madeline Salzman, U.S. Dept. of Energy
- Harry Bergmann, U.S. Dept. of Energy
- Emma Elgqvist, National Renewable Energy Laboratory
- Adam Guzzo, U.S. Dept. of Energy
- Jonah Steinbuck, U.S. Dept. of Energy

**MODERATOR**

Cindy Zhu, U.S. Dept. of Energy

---

**Engage with leaders from the local government sector. This interactive meet-up will be an opportunity for local government attendees to connect and exchange best practices with peers, share accomplishments and challenges in a candid format, and learn about innovations happening at the local level.**

**PANELISTS**

- Sean Williamson, U.S. Dept. of Energy
- Shawna Cuan, State of Utah
- Michael Reinhardt, Commonwealth of Massachusetts
- Megan Levy, State of Wisconsin
- Paul Miller, Baton Rouge Clean Air Coalition
- Rick Bender, Commonwealth of Kentucky
- Becca Trietch, State of Rhode Island

**MODERATOR**

Alice Dasek, U.S. Dept. of Energy

---

**Network with state colleagues from across the nation! State representatives are invited to an annual peer forum that can provide new ideas to take back to the office. This year we will discuss commercial PACE financing, working with specific sectors toward state energy efficiency, and effective stakeholder engagement approaches to reinforce your initiatives.**

**PANELISTS**

- Tom Smith, Exposure Control Technologies, Inc.
- Genna Waldvogel, Los Alamos National Laboratory

**MODERATOR**

Rachel Shepherd, U.S. Dept. of Energy

---

**Ventilation is a critical component of a safe and productive laboratory environment. It’s also one of the primary consumers of energy in most lab buildings. Ventilation management programs give energy and safety managers better control of their labs while lowering risk and achieving energy savings. Hear systematic, risk-based, demand-driven examples.**

**PANELISTS**

- Tom Smith, Exposure Control Technologies, Inc.
- Genna Waldvogel, Los Alamos National Laboratory
THURSDAY: 8:30 AM – 10:00 AM

WORKFORCE, MANAGEMENT, AND POLICY DRIVERS

Workforce Development and Engagement

- Energy is Everyone’s Job: Harnessing the Human Power of Your Organization
  T1S8

Policy and Strategies

- Department of Defense Deputy Assistant Secretary Panel (El&E)
  T2S8

Organizational Strategies

- Energy Efficien-SHE: Women’s Perspectives in Sustainability
  T23S8a

- Ready to Save Energy: Using DOE’s Free 50001 Ready Tool
  T23S8b

ROOM 25B

Energy and water efficient equipment can be installed to achieve goals, but it’s the staff working in the buildings that influence how energy is used. Harness the “human power” in your building! This roundtable discussion provides a framework for integrating human behavior, social media, internal practices and leadership to enhance overall energy performance.

ROOM Grand Ballroom A

This session will offer attendees an opportunity to hear the latest on U.S. Department of Defense energy programs from the Deputy Assistant Secretaries for Energy from the military departments, as well as the Office of the Secretary of Defense. This will be an interactive question-and-answer session with the audience. Participants will have an opportunity to ask about new initiatives and the progress of ongoing programs.

ROOM 8

Back by popular demand! Women leaders in the energy and sustainability industries share their take on workplace diversity, mentorship, and the challenges and opportunities in being a woman in the buildings space. Come early - this was the top-rated session of the 2017 Better Buildings Summit!

ROOM 23

50001 Ready is a no-cost, self-guided approach to tracking and managing energy use and improvement in your facility, campus, or base. Designed by DOE, this training session will introduce the 50001 Ready Navigator tool and provide hands-on learning to kickstart your facility’s adoption of 50001 Ready utilizing your existing energy targets and reporting.

PANELISTS

Amy Wolfe, Oak Ridge National Laboratory
Reuven Sussman, American Council for an Energy-Efficient Economy
Jeff Marqusee, Noblis
Nickolas King, U.S. Air Force
Lisa Jung, U.S. Dept. of Defense
Jack Surash, U.S. Army
James Balocki, U.S. Navy
Mark Correll, U.S. Air Force
Emily Pearce, Waypoint Building Group
Faith Taylor, Magnaspire
Kat Benitez, Northwestern University
Rishabh Bahel, ArcelorMittal
Nathan Casey, Des Moines Water Works
Ed Birch, Strategic Energy Group

Moderator
Maria Vargas, U.S. Dept. of Energy
Moderator
Pete Langlois, U.S. Dept. of Energy
The United States is dependent on the reliable movement of energy through increasingly complex and technical systems, a complexity that brings the risk of disruption from weather, cyber intrusions, and physical attacks. These risks carry a need to understand how the system can react and respond in the event of a disruption. This session will delve into how energy resilience can be measured and how metrics can be used to enhance the current energy infrastructure and help identify improvements.

The private sector has been influential in adopting distributed generation (DG) for its own energy resilience solutions, as well as developing and financing DG for government resilience projects. This session will provide an overview of several projects that have leveraged DG with private sector partners or at private sector sites.

Lessons can be learned from every major natural disaster, both in how to better respond and recover and how to better prepare. This session will feature speakers from the federal and private sectors on how they were able to keep the lights on against the odds. How did Princeton University sustain power during Superstorm Sandy given their archaic infrastructure and systems? How did the Texas Army National Guard work with their utility provider to remain operational through Hurricane Harvey? How did the Marines quickly recover in Albany, Georgia, after a crippling tornado? Learn from these examples to prepare your installation, campus, or facility for the inevitable disruptive event.

**PANELISTS**

**PANELISTS**

**PANELISTS**

**Eric Wachtman**, Princeton University  
**Brian Stevens**, Texas Army National Guard  
**Hubert Smigelski**, U.S. Marine Corps  
**Mark Silberg**, Rocky Mountain Institute  
**Terry Sharp**, Oak Ridge National Laboratory  
**Dale Kearns**, Deloitte  
**Nicholas Judson**, MIT Lincoln Laboratory  
**Alysson Blackwelder**, U.S. Green Building Council  
**Martha Gray**, Defense Logistics Agency Energy  
**Kate Anderson**, National Renewable Energy Laboratory  
**Jim Bishop**, Ameresco  
**John Kleim**, U.S. Navy
As the designated champion for energy efficiency, security, and resiliency, YOU are tasked with identifying and prioritizing energy projects from the least valuable to those that provide the greatest opportunities for energy savings. Proper analysis of energy information and transformation of the data into actionable projects are essential to meeting overall energy consumption goals. This session will provide real world examples of audits and how they were transformed into projects.

**Panelists**
- Daniel Dreher, Sain Engineering Associates
- Gregory Skaggs, U.S. Army
- Carl James, U.S. Army Corps of Engineers
- Eric Nyenhuis, Southland Energy

---

<table>
<thead>
<tr>
<th>Panel</th>
<th>Room</th>
<th>Session Title</th>
</tr>
</thead>
</table>
| Panel A | ROOM 15 | Audits Part II  
T7S8 |
| Panel A | ROOM 20 | The Lighting Ecosystem: Integrated Design of Lighting Ecosystem  
T8S8 |
| Panel A | ROOM 11 | Community/Utility Partnerships That emPOWER Success  
T24S8a |
| Panel A | ROOM 19 | State of the Submeter: Considerations for Measuring Energy Use  
T24S8b |

**Panelists**
- Nancy Sutley, Los Angeles Dept. of Water and Power
- Bryan Steverson, U.S. General Services Administration
- Ed Clark, Circa Dies
- Jonathan McIntyre, U.S. General Services Administration
- Brad Swing, Boston, MA
- Rebecca Rasmussen, Los Angeles, CA

Moderator
- Jenah Zweig, U.S. Dept. of Energy

**Panelists**
- Nancy Sutley, Los Angeles Dept. of Water and Power
- Bryan Steverson, U.S. General Services Administration
- Ed Clark, Circa Dies
- Jonathan McIntyre, U.S. General Services Administration
- Brad Swing, Boston, MA
- Rebecca Rasmussen, Los Angeles, CA

Moderator
- Cindy Zhu, U.S. Dept. of Energy
**High Impact and Secure Technology Applications**

**Emerging Technologies**
- Dynamic Facades and Daylight Integration
  - T958

**Cybersecurity Technologies and Control Systems**
- Leveraging New Enterprise IT Technologies
  - T1058

**Notes From the Field: Using High Impact Technologies**
- De-energize the Workplace: Zero Energy Office Buildings
  - T2158a
- Real RTU AFDD Performance - Stories From the Field
  - T2158b

**Room 26B**

New systems approaches for efficient facades and daylighting allow for improved occupant comfort and health, as well as large energy and peak demand savings. This session will explore the holistic, systems approaches for new construction and retrofits, as well as recent data on benefits that could justify a new facade project.

**Room 4**

Attendees will learn the value of integrating enterprise to architect systems that enable new technologies like Business Intelligence tools, Machine Learning, Geospatial tools, and others in a secure manner that is allowed/approved in federal networks.

**Room 22**


**Room 10**

Suffering in the summer heat? Rooftop units (RTUs) often run below rated efficiency. Automated fault detection and diagnostics (AFDD) can help maintain RTUs in top condition. Learn about the basics and intricacies of AFDD advanced and hear stories about the challenges and successes that come with it.

**Panelists**

**Room 26B**
- Victor Olgyay, Rocky Mountain Institute
- Paul Mathew, Lawrence Berkeley National Laboratory
- Stacy Lambright, Hunter Douglas

**Room 4**
- David Anderson, U.S. Marine Corps
- Scott Smith, OSIsoft
- Julius Plucker, U.S. Army Corps of Engineers

**Room 22**
- Janice Lachance, American Geophysical Union
- Paul Torcellini, National Renewable Energy Laboratory
- Shanti Pless, National Renewable Energy Laboratory

**Room 10**
- Kyle Hopkins, H&M
- Paul Johnson, Target

**Moderator**
- Sarah Zaleski, U.S. Dept. of Energy
- Michael Deru, National Renewable Energy Laboratory
## Financing, Performance Contracting, and Utility Partnerships

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>26C</td>
<td>Risk Management/Sharing: What’s in Your Contract?</td>
</tr>
<tr>
<td></td>
<td>Panelists: Peter Chornyak, Siemens Government Technologies</td>
</tr>
<tr>
<td></td>
<td>Peter Flynn, Bostonia</td>
</tr>
<tr>
<td></td>
<td>Cindy Obermeyer, Defense Logistics Agency</td>
</tr>
<tr>
<td></td>
<td>Tom Denslow, U.S. Air Force</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>26A</td>
<td>Utility Market Engagement &amp; Trends</td>
</tr>
<tr>
<td></td>
<td>Panelists: Scott Foster, Bostonia</td>
</tr>
<tr>
<td></td>
<td>Jim Tilley, CenterPoint Utility</td>
</tr>
<tr>
<td></td>
<td>Ren McDearis, Georgia Power Company</td>
</tr>
<tr>
<td></td>
<td>Peter Giannotti, Southern California Edison</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Innovations in Residential Financing Workshop</td>
</tr>
<tr>
<td></td>
<td>Panelists: Kerry O’Neill, Connecticut Green Bank</td>
</tr>
<tr>
<td></td>
<td>Heather Braithwaite, National Energy Improvement Fund</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Panelists: Steve Dunn, U.S. Dept. of Energy</td>
</tr>
<tr>
<td></td>
<td>Moderator: Holt Mountcastle, RE Tech Advisors</td>
</tr>
</tbody>
</table>

### THURSDAY: 8:30 AM – 10:00 AM

**Course Description**

**Room 26C**

A robust roundtable discussion of risk allocation in performance contracting from multiple perspectives, including both industry and government. Attendees will gain a better understanding of how risk assignment decisions made during the development phase will impact their projects, both positively and negatively.

**Room 26A**

This session offers a panel discussion that will examine current utility market trends and opportunities related to Federal agency and utility partnerships. Our experts will provide insight into issues related to revenue streams, distributed generation, net metering, demand-response, rate intervention, and utilities privatization.

**Room 12**

Come away from this session equipped with everything you need to know about energy efficiency and renewable energy finance at a high level. Get a review of recent trends in finance, including new financial products, current market data, and key barriers. Panelists will also highlight the Better Buildings Financing Navigator 2.0, an online tool that helps organizations find financing solutions for efficiency and renewables.

**Room 21**

What is the best way to bring the money home? This workshop will provide an overview of state and local programs that have successfully implemented financing programs in the residential market, including on-bill tariffs, bundled solar and efficiency programs, residential PACE, and unsecured financing mechanisms. Participants will have a chance to discuss the barriers unique to the residential sector (including single family and multifamily) and how different communities can address those barriers.
<table>
<thead>
<tr>
<th>Room</th>
<th>Session Title</th>
<th>Panelists</th>
</tr>
</thead>
</table>
Brian Boyd, Pacific Northwest National Laboratory  
Chris Woodruff, U.S. Army |
| 16   | Electric Vehicles and the Federal Fleet | Martin Brown, U.S. Army  
Tim Currie, National Aeronautics and Space Administration  
Julian Bentley, Bentley Energy Consulting |
| 13   | Making a Splash: Targeting Water Saving Measures for Maximum Impact | Hakon Mattson, Anthem, Inc.  
Otto VanGeet, National Renewable Energy Laboratory  
Sachin Nimbalkar, Oak Ridge National Laboratory |
| 9    | Shooting for the Moon: Planning and Execution Towards a Big Energy Goal | Brett Rasmussen, Nissan North America  
Ed Willhite, Schneider Electric  
Philip Kauneckas, Intertape Polymer Group |
| 14   | From the Bottom to the Top: Institutionalizing Efficiency in Multifamily Organizations | Jenna Smith, King County Housing Authority  
Julie Klump, Preservation of Affordable Housing  
Peter Lewis, Schochet Companies |

**Panelists**

- **Alicen Kandt**, National Renewable Energy Laboratory  
- **Brian Boyd**, Pacific Northwest National Laboratory  
- **Chris Woodruff**, U.S. Army  
- **Martin Brown**, U.S. Army  
- **Tim Currie**, National Aeronautics and Space Administration  
- **Julian Bentley**, Bentley Energy Consulting  
- **Hakon Mattson**, Anthem, Inc.  
- **Otto VanGeet**, National Renewable Energy Laboratory  
- **Sachin Nimbalkar**, Oak Ridge National Laboratory  
- **Brett Rasmussen**, Nissan North America  
- **Ed Willhite**, Schneider Electric  
- **Philip Kauneckas**, Intertape Polymer Group  
- **Jenna Smith**, King County Housing Authority  
- **Julie Klump**, Preservation of Affordable Housing  
- **Peter Lewis**, Schochet Companies  
- **Moderator**: Andre de Fontaine, U.S. Dept. of Energy  
- **Moderator**: Eli Levine, U.S. Dept. of Energy  
- **Moderator**: Joshua Geyer, U.S. Dept. of Housing and Urban Development

**CEU**
Discover a new approach to defining technical, organizational, and resource problems hindering day to day energy management. Researchers will engage the audience in a roundtable discussion of what H4X – “Hacking for X” – is and how it can be used to source, scope and prioritize your organization’s most challenging problems.

**PANELISTS**
- Rich Carlin, Office of Naval Research
- Tim Tetreault, U.S. Department of Defense
- Roosevelt "Rose" Samuel, BMNT Partners
- Sarah Mandes, U.S. Army
- Wally Ludwig, U.S. Dept. of Defense
- Jen Tetatzin, U.S. Navy
- Schuyler Schell, U.S. Dept. of Energy

The buildings in which we live, work, and play have a direct impact on our mental and physical health. This panel will showcase Better Buildings partners who are implementing design strategies and benchmarks in their buildings and sustainability plans that focus on the wellness, health, and productivity of the people inside them. Speakers will highlight the Fitwel certifications, WELL standard, and more.

**PANELISTS**
- Anand Natarajan, Cleveland, OH
- Greg Hopkins, Rocky Mountain Institute
- Reuven Sussman, American Council for an Energy-Efficient Economy
- Jon Utech, Cleveland Clinic Foundation
- Ryan Tinus, Tishman Speyer
- Megan O’Neil, Atlanta, GA
- Moderator
  - Amy Jiron, U.S. Dept. of Energy

Learn how an efficient media strategy can get your program on the map. Communications and media experts will discuss how to leverage public relations and social media to share your successes in energy and water efficiency. Bring your ideas to the session and hear from the panelists on how to develop and hone your media strategy.

**PANELISTS**
- John Failla, Smart Energy Decisions
- Kathie Zipp, WTWH Media LCC
- Chris Crowell, Solar Builder Magazine
- Lauren Paige, L'Oréal USA
- Moderator
  - Bryan Cohen, C+C

Even in the most energy-efficient building or home, occupant behavior is a key component to achieving desired savings outcomes. This session will cover potential ways to incorporate behaviors, identify motivators and emotional triggers, uncover barriers to action, and impactful program design in service of energy efficiency.

**PANELISTS**
- John Failla, Smart Energy Decisions
- Kathie Zipp, WTWH Media LCC
- Chris Crowell, Solar Builder Magazine
- Lauren Paige, L’Oréal USA
- Moderator
  - Bryan Cohen, C+C
THURSDAY: 10:30 AM – 12:00 PM

RESILIENCE AND ENERGY CONTINGENCY PLANNING IMPLEMENTATION

<table>
<thead>
<tr>
<th>Planning for Mission-Driven Resilience</th>
<th>Continuity of Operations: Resilience and Contingency Solutions</th>
<th>Distributed Generation: Contribution to Resilience</th>
</tr>
</thead>
</table>

ROOM 7

This session will discuss methods for developing the business case for resilience investments. Once measures have been identified, a cost baseline must be developed, then a monetary and non-monetary analysis of measures, followed by a comparison to the baseline. Finally, a decision portfolio can be prepared for decision makers.

ROOM 25A

This session addresses how to ensure energy/utilities support for mission-critical facilities. It will examine how these facilities are identified, how reliability of utilities supporting facilities is assessed, making best use of assets currently available, and interaction with the grid/utility providers. A case study will be discussed in order to determine strategies to provide funding for energy reliability enhancements.

ROOM 5

This session will explore perspectives on the development of microgrids when considering existing and potential distributed generation (DG) components, including how to optimize combinations of DG to support critical loads in a microgrid. Time-phased approaches will be discussed if a microgrid is to be implemented in stages.

PANELISTS

Mike McGhee, U.S. Army
Tom Hattery, Oak Ridge National Laboratory
Phil Smith, Honeywell
Joe Oliver, Deloitte

CEU

PANELISTS

Kathleen Judd, Pacific Northwest National Laboratory
Kate Anderson, National Renewable Energy Laboratory
Bob Hughes, U.S. Air Force
Gabe Adams, Strategic Petroleum Reserves

CEU

PANELISTS

Sam Booth, National Renewable Energy Laboratory
Eric Griesenbock, U.S. Air Force
Michael Yambrach, Montgomery County, MD

CEU
THURSDAY: 10:30 AM – 12:00 PM

**OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS**

**ROOM 15**
This session will describe the process for commissioning new and existing buildings and the ongoing commissioning of buildings. Learn what you need to know to procure commissioning services, and how to work with your commissioning provider (CxP) to implement the process and ensure you get the deliverables for each building.

**ROOM 20**
This session will look at data analytics from a Smart Grid perspective – i.e., what is the Smart Grid and what data is important and necessary to support it for resilience and efficiency? Using a Navy example, the presentation will focus on identifying the data available at the building/facility level and how a Smart Grid can leverage such data at the installation Smart Grid level.

**ROOM 11**
Join us for an examination of the ways in which building energy efficiency can be incorporated in planned commercial real estate transactions, including property purchases and refinances, and review pilots underway to factor energy efficiency into such transactions. Topics will include new research around energy factors and their impact on commercial mortgage default risk, how lenders can account for this risk by building energy efficiency in their underwriting practices, and the development of an energy risk score for the mortgage industry to use.

**ROOM 19**
The Smart Energy Analytics (SEA) Campaign just wrapped up its second year and has more success stories to share! Get the latest updates on EMIS implementation from SEA Campaign participants, a recap of the 2018 recognition awards, and the newest information on the world’s largest database of commissioning case studies (thanks to the Commissioning Cost Benefit Study).

**PANELISTS**
**Mike Pampalone**, Jacobs
**John Villani**, Grumman and Butkas

**PANELISTS**
**Andy Knox**, U.S. Navy
**Mark McCoy**, OSIsoft
**Dylan Cutler**, National Renewable Energy Laboratory

**PANELISTS**
**Andrew White**, RE Tech Advisors
**Erin Hopkins**, Virginia Tech
**Paolo Issler**, University of California, Berkeley

**PANELISTS**
**Mark Campbell**, MGM Resorts International
**Craig Wright**, Aurora Public Schools
**Rock Ridolfi**, Rivion

**Moderator**
**Paul Mathew**, Lawrence Berkeley National Laboratory

**Moderator**
**Claire Curtin**, Lawrence Berkeley National Laboratory
### Emerging Technologies

<table>
<thead>
<tr>
<th>SESSION</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Auditing Solutions</td>
<td>26B</td>
</tr>
</tbody>
</table>

A realistic, accurate facility audit is the first step toward an effective energy efficiency upgrade. Learn how advanced technologies can improve auditing effectiveness for facility portfolios. This session will discuss advanced technologies that can help you quickly assess multiple facilities in your portfolio to determine a priority order for future audits.

#### PANELISTS
- **Dale Herron**, U.S. Army Corps of Engineers
- **Alexis Abramson**, Great Lakes Energy Institute
- **Tapan Patel**, U.S. Army Corps of Engineers

### Cybersecurity Technologies and Control Systems

<table>
<thead>
<tr>
<th>SESSION</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Related Control System Assessment</td>
<td>4</td>
</tr>
</tbody>
</table>

This session will discuss the assessment and inventory of industrial control systems across DOD, touching upon how to begin assessing what is in your inventory, what the cybersecurity criteria and standards are, what planning and programming activities are needed, and how to proceed with requirements gathering.

#### PANELISTS
- **Tim Nauman**, U.S. Air Force
- **Laura Vaglia**, U.S. Army
- **Vishal Aswani**, U.S. Navy

### Notes From the Field: Using High Impact Technologies

<table>
<thead>
<tr>
<th>SESSION</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Roads Point Home: Where Residential Energy and Real Estate Meet</td>
<td>24</td>
</tr>
</tbody>
</table>

For consumers to demand efficiency upgrades in the residential sector, they must be aware of their home’s energy features to understand and invest in a home energy upgrade. One way is through the real estate transaction process - enabling home energy data to inform the home’s appraised value. Connecting the dots from home energy information databases to real estate professionals will help grow the market for energy information and efficiency improvements. The 2018 Summit marks the end of the Home Energy Information Accelerator, which worked with partners across the country to do just that, and this session covers the results.

#### PANELISTS
- **Meg Garabrant**, New England Real Estate Network
- **Pamela Brookstein**, Elevate Energy
- **Wendy Koelfgen**, City of Portland

### All Roads Point Home: High Impact and Secure Technology Applications

<table>
<thead>
<tr>
<th>SESSION</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow the Sun: Successful Strategies for Solar Adoption</td>
<td>10</td>
</tr>
</tbody>
</table>

Hear from states and cities utilizing solar to serve customers in innovative ways. Whether through federal programs, leveraging funds to increase access to solar, community solar, or workforce development programs, partners will share how they did it AND how they engaged stakeholders along the way. Speakers will also address the various barriers states and cities faced and strategic approaches for solar adoption.

#### PANELISTS
- **Sameer Doshi**, Illinois Power Agency
- **Chris Castro**, Orlando, FL
- **Terri Novak**, State of Michigan
- **Daniel White**, District of Columbia

#### Moderator
- **Krystal Laymon**, U.S. Dept. of Energy

#### Moderator
- **Madeline Salzman**, U.S. Dept. of Energy
### ALL SESSIONS

**THURSDAY: 10:30 AM – 12:00 PM**

#### Financing and Performance Contracting

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T11S9</td>
<td>Utility Privatization: ’Til Term Do We Part T12S9</td>
<td>Emerging Trends in Green Banks T22S9a</td>
</tr>
<tr>
<td></td>
<td>Managing an extremely long utilities privatization contract has both its benefits and challenges. Hear from Government and Industry experts about the lessons that have been gained as well as the unintended consequences of these long term endeavors.</td>
<td>Leveraging Commercial PACE to Drive Economic Development and Resiliency T22S9b</td>
</tr>
</tbody>
</table>

**ROOM 26C**

Join our roundtable panel of government and industry experts to examine performance contracting and third-party financing under various procurement mechanisms including energy savings performance contracts, utility energy services contracts, power purchase agreements, enhanced use leases and utilities privatization. Discuss cutting edge topics, lessons learned and best practices from proposal review to final negotiations to the life of contract management with our experts.

**PANELISTS**

- Lara (Gast) Spader, U.S. Dept. of Veterans Affairs
- Les Martin, U.S. Air Force
- Keith Benson, U.S. Navy
- Joseph Bonnin, Siemens Government Technologies
- Pat Saxton, Oklahoma Gas & Electric
- Ben Speed, Johnson Controls

**ROOM 26A**

Managing an extremely long utilities privatization contract has both its benefits and challenges. Hear from Government and Industry experts about the lessons that have been gained as well as the unintended consequences of these long term endeavors.

**PANELISTS**

- Kenneth Richardson, Defense Logistics Agency Energy
- Michael Raymo, American Water
- Andrew Urben, Defense Logistics Agency Energy
- James Shannon, U.S. Air Force
- Jay Hartman, Entergy Arkansas
- Michael Maier, Picatinny Arsenal, NJ

**ROOM 2A**

Join our roundtable panel of government and industry experts to examine performance contracting and third-party financing under various procurement mechanisms including energy savings performance contracts, utility energy services contracts, power purchase agreements, enhanced use leases and utilities privatization. Discuss cutting edge topics, lessons learned and best practices from proposal review to final negotiations to the life of contract management with our experts.

**PANELISTS**

- Tom Deyo, Montgomery County Green Bank
- Kerry O’Neill, Connecticut Green Bank

**ROOM 12**

Green banks are helping unlock clean energy investment across the U.S. and the world. This session will review current developments in green banks, including the recent trend toward county-level banks, city-level banks, and international collaboration around green banks.

**PANELISTS**

- Chris Jones, OHIO PACE
- Greg Leventis, Lawrence Berkeley National Laboratory
- Rachel Davis, Petros PACE Finance LLC

**ROOM 21**

Commercial Property Assessed Clean Energy (CPACE) is much more than a tool for financing energy efficiency and renewable energy. With insights from PACE program administrators, capital providers, and others, this session presents the value proposition of CPACE for building owners, lenders, and state and local governments. Presenters will demonstrate how CPACE can further multiple goals including economic development, resiliency, and clean energy deployment.

**PANELISTS**

- Moderator Alex Kragie, Coalition for Green Capital

**ROOM 17**

This session is reserved for financing companies that are either current or prospective Financial Allies.

**MODERATORS**

- Holt Mountcastle, RE Tech Advisors
- Johanna Zetterberg, U.S. Dept. of Energy

---

**CEU**

**FBPTA**
### Integrated Key Sectors: Water, Fleet, Etc.

#### Water Management & Resilience

- **Water Risk: Case Studies**
  - T13S9

#### Fleet

- **New Mobility Options for Fleets (AFVs and Beyond)**
  - T14S9

### Better Buildings Peer Exchange and Learning

#### Energy & Water Nexus Strategies

- **Sustainable Water/Wastewater Infrastructure: “Selling” Your Facility Upgrades**
  - T20S9a

#### Manufacturing

- **Not Just for Energy: Re-purposing an Energy Management System for Water Efficiency**
  - T19S9a

#### Multifamily

- **Get a Running Start: Tools to Build Capacity for Measurable Progress**
  - T18S9a

### Rooms

**Room 25C**

- This session will look at the rising cost, viability, and quality of water supplies as critical assets. Case studies will dive into efforts towards having available, reliable, and quality water to continue operations and prepare for future water disruptions.

**Room 16**

- There are more mobility options available to fleets than ever before. These include new types of fuels, autonomous vehicles, and alternatives to traditional vehicle ownership.

**Room 13**

- Explore the best practices for “selling” water/wastewater infrastructure improvements and facility upgrade plans, including messaging, making the business case, forming partnerships, and other strategies.

**Room 9**

- The benefits of an effective corporate energy management system can really “trickle down.” This session will address how to use lessons learned from a corporate energy management program and apply them to water efficiency.

**Room 14**

- Multifamily partners have been taking advantage of various fellowship programs to add temporary capacity that can create the foundation for improved outcomes down the road, including EDF Climate Corps, Rose Architectural Fellowship, and CivicSpark Fellows. Hear from partners and their fellows as they discuss how organizations used this staffing tool to change the trajectory of their portfolios’ performance.

### Panels

#### Panelists

- **Lars Hanson**, Center for Naval Analyses
- **Elisabeth Jenicek**, U.S. Army Corps of Engineers
- **John Simpson**, U.S. Marine Corps

- **Stan Young**, National Renewable Energy Laboratory
- **Carroll Burgess**, U.S. Postal Service

- **Bruce Bartel**, NEW Water
- **Jenita Warner**, Northeast Ohio Regional Sewer District
- **Robert Munro**, Avon Lake Regional Water
- **Nathan Casey**, Des Moines Water Works
- **Hon. Mike Summers**, Lakewood, OH

- **Alan Resnik**, Cummins, Inc.
- **Muneer Chowdhury**, Bridgestone Americas, Inc.
- **Sharon Nolen**, Eastman Chemical Company

- **Veronica Zimmerman Garcia**, Housing Authority of City of San Buenaventura, CA

- **Bruce Lung**, U.S. Dept. of Energy

- **Sapna Gheewala**, U.S. Dept. of Energy

- **Joshua Geyer**, U.S. Dept. of Housing and Urban Development
THURSDAY: 2:00 PM – 3:30 PM

WORKFORCE, MANAGEMENT, AND POLICY DRIVERS

Organizational Strategies

Energy Planning: State, Local, Utility, and Private Sector Perspectives
T23S10a

Energy Strategies for Rural Communities
T23S10b

Saving Energy Cleans Up the Air! Tales from the Trenches
T23S10c

The Power of the Pen: Leasing Best Practices for Energy Efficiency
T23S10d

ROOM 22

State and local government, utility, and private sector representatives will share their experiences and perspectives on planning for energy efficiency and renewable energy, and discuss replicable models for collaboration to meet energy planning objectives.

ROOM 20

This session addresses strategies to engage rural communities in energy efficiency and renewable energy using analytic tools to target programs geographically, financing, and best practices in program delivery.

ROOM 12

The EPA is working with states and local governments close to violating air pollution standards to carry out measures to reduce air pollution. These are voluntary strategies designed and implemented by state and local governments – and they include energy efficiency! Come hear about this innovative program and how governments are both decreasing energy waste and cleaning up the air.

ROOM 23

The first-ever retail tenants were recognized as Green Lease Leaders this spring. Find out how tenants and landlords are taking control of their energy destiny and leveraging the lease to automate energy and water savings over the life of the agreement.

PANELISTS

Lindsay Anderson, Minnesota Dept. of Commerce
Shannon Pinc, Saint Louis Park, MN
Tami Gunderzak, Xcel Energy
Rick Carter, LHB Corp.

PANELIST

Lisa Smith, State of Maine
Tammy Agard, EUtility
Ryan Young, Iowa Economic Development Authority
Jessica Lin, U.S. Dept of Energy

PANELISTS

Paul Miller, Baton Rouge Clean Air Coalition
Rodney Sobin, National Association of State Energy Officials
Wendy Lee, Salt Lake City, UT

PANELISTS

Cindy Jacobs, U.S. Environmental Protection Agency
Will Teichman, Kimco Realty Corporation
Christopher Oftedal, Weingarten Realty

Moderator

Jonah Steinbuck, U.S. Dept. of Energy
Pam Mendelson, U.S. Dept. of Energy
Robyn DeYoung, U.S. Environmental Protection Agency
Alex Harry, Institute for Market Transformation
THURSDAY: 2:00 PM – 3:30 PM

**OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS**

- **Data Driven Results**

**Learning What Works: Energy Data Management**
T24S10a

**Get Sorted: Efficiency in Distribution and Logistics**
T24S10b

ROOM 19

Come learn from leaders in the public, industrial, and commercial sectors on how to effectively manage your energy data and institutionalize data-driven decision-making in your organization so you can save money and avoid wasting energy. As a bonus, get a preview of DOE’s new Energy Data Management Guide a seven step framework for establishing a robust and sustainable energy data management program in the public sector.

**PANELISTS**
Adam Jacobs, Boston, MA
David Reid, Celanese Corporation
Mark Campbell, MGM Resorts International

**PANELIST**
Jesse Dean, National Renewable Energy Laboratory

**Moderator**
Adam Guzzo, U.S. Dept. of Energy

---

**HIGH IMPACT AND SECURE TECHNOLOGY APPLICATIONS**

- **Notes From the Field: Using High Impact Technologies**

**Cooling Tower Water Management Best Practices**
T21S10a

**New Innovations in Energy Efficiency and Smart Home Technology**
T21S10b

**Promising Practices in Energy Resilience**
T21S10c

ROOM 26C

Cooling tower water management is often treated as an art, with mixtures of unknown chemicals and wasted water. This session will demystify water treatment and examine the results of several recent technology field tests.

ROOM 15

Smart Home technologies are flooding the market, but what does that mean for residential energy efficiency? This session will cover opportunities and barriers concerning the integration of smart home technologies into residential energy programs. Panelists will examine approaches to data analytics, connecting data analytics to decision-making, and exploring the potential for smart technologies and achieving greater energy efficiency.

ROOM 16

Lessons learned from past events can help governments strengthen resiliency plans to minimize disruptions, speed recoveries and keep the lights on. Panelists who have “weathered the storm” will share what they learned and how their approaches to energy planning have changed.

**PANELISTS**
Matt Carlson, Aquanta
Jamie Peters, Nest
Kevin DeMaster, Mitsubishi Electric
Jeremy Sharp, Norfolk, VA
Camille Pollan, New Orleans, LA
Theresa Spurling-Wood, Alachua County Public Schools, FL

**PANELISTS**
Bert Hill, Volvo Group North America
Kirk Myers, REI
Sachin Nimbalkar, Oak Ridge National Laboratory

**PANELIST**
Matt Carlson, Aquanta

**Moderator**
John Agan, U.S. Dept. of Energy

---

**PANELISTS**
Cindy Zhu, U.S. Dept. of Energy

**Moderator**
Michael Deru, National Renewable Energy Laboratory

---

**PANELIST**
Jonathan Cohen, U.S. Dept. of Energy

---

**PANELISTS**
John Agan, U.S. Dept. of Energy

---

2018energyexchange.com
<table>
<thead>
<tr>
<th>Session Title</th>
<th>Room</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Buildings Peer Exchange and Learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making Smart Investments: How Banks and Investors Think about Energy Efficiency</td>
<td></td>
<td>State-based energy efficiency programs and legislation for school facilities enable K-12 school districts to accelerate upgrades and improve learning environments while saving on utility costs. Several states provide examples of funding models that offer centralized support for financing school improvements, technical assistance, and project implementation, like the Tennessee Department of Education's Energy Efficient Schools Initiative (ESSI).</td>
</tr>
<tr>
<td>Spotlight on Energy Efficiency Funding Models for School Facilities</td>
<td>25C</td>
<td>Market leaders are deploying cutting edge strategies to achieve deeper and more sustained water savings. This session will explore approaches to establish holistic water management strategies, set water-saving goals, and analyze water data.</td>
</tr>
<tr>
<td>Swimming in the Fast Lane: Next-level Strategies for Improving Water Efficiency</td>
<td>13</td>
<td>Innovation abounds! This session will discuss emerging energy technologies, particularly for industrial applications. Presenters will review the latest tech from Better Plants' Technology Days at the National Labs and techniques for effective field validation.</td>
</tr>
<tr>
<td>Risky Business: New Tools for Addressing Disaster Risk in Multifamily Housing</td>
<td>9</td>
<td>New disaster resilience and recovery tools reinforce the importance of assessing the vulnerability of U.S. housing stock to the effects of a changing climate. Hear disaster resilience experts and practitioners discuss why these tools are needed and how to use them to assess and ultimately reduce your multifamily portfolio’s disaster risk.</td>
</tr>
<tr>
<td>Swimming in the Fast Lane: Next-level Strategies for Improving Water Efficiency</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>The Future is Now: Emerging Manufacturing Technologies</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Panelists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Tine, HSB/MunichRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jonathon Bauer, The Tower Companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rock Ridolfi, Rivion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anisa Heming, USGBC Center for Green Schools</td>
<td>25C</td>
<td></td>
</tr>
<tr>
<td>Paul Cross, Tennessee Energy Efficiency in Schools Initiative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murat McDermid, Wisconsin Manufacturing Extension Partnership</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Logan Olds, Victor Valley Wastewater Reclamation Authority</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Steve Schultz, 3M</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Fernando Reyes-Gonzalez, Johnson Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LuAnn Dahlman, National Oceanic and Atmospheric Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelby O’Neill, Enterprise Community Partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brian Gage, Akron Metropolitan Housing Authority</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas Wenning, Oak Ridge National Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crystal Bergemann, U.S. Dept. of Housing and Urban Development</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Better Buildings Summit track / session                                      |       |                                                                                                                                                            |
| Making Smart Investments: How Banks and Investors Think about Energy Efficiency |       | How do major financial institutions think about energy efficiency? What will it take to drive more capital into these projects? Join this session to get those very answers, and learn about the current efforts to standardize energy efficiency into an investable asset class. |
| Panelists                                                                    |       |                                                                                                                                                            |
| Johanna Zetterberg, U.S. Dept. of Energy                                     |       |                                                                                                                                                            |
| Crystal McDonald, U.S. Dept. of Energy                                      |       |                                                                                                                                                            |
| Andre de Fontaine, U.S. Dept. of Energy                                     |       |                                                                                                                                                            |
| Thomas Wenning, Oak Ridge National Laboratory                               |       |                                                                                                                                                            |
| Crystal Bergemann, U.S. Dept. of Housing and Urban Development                |       |                                                                                                                                                            |
### Workforce, Management, and Policy Drivers

**Organizational Strategies**

<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>A Level Playing Field: New Tools and Programs for Energy Affordability</td>
<td>Emily Schapira, Philadelphia Energy Authority</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Michelle Gransee, State of Minnesota</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kerry O’Neill, Connecticut Green Bank</td>
</tr>
<tr>
<td>23</td>
<td>Building a Next Generation Workforce for Next Generation Buildings</td>
<td>Erik Schmidt, Chattanooga, TN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Richie Stever, University of Maryland Medical Center</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brian Lovell, Association of Controls Professionals</td>
</tr>
<tr>
<td>15</td>
<td>More Affordable Energy Upgrades for America’s Families</td>
<td>Dan Ticona, Freddie Mac</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deborah Philbrick, Elevate Energy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stefen Samarripas, American Council for an Energy-Efficient Economy</td>
</tr>
<tr>
<td>19</td>
<td>We’re Engaged! Building Relationships that Lower Energy Intensity</td>
<td>Matthew Gray, Cleveland, OH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paul Miller, Baton Rouge Clean Air Coalition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nicole Stika, Greater Cleveland Partnership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coleen Wisniewski, Chula Vista, CA</td>
</tr>
</tbody>
</table>

Come learn about the successes of partners in the Clean Energy for Low Income Communities Accelerator (CELICA) as they showcase their work in addressing energy affordability in innovative ways. Attendees will also be introduced to the CELICA Toolkit, which includes the Low-income Energy Affordability Data (LEAD) Tool, a stakeholder engagement guide, case studies, promising practices, and a program design.

Partners across sectors have identified challenges in finding qualified technicians to support maintenance of facilities. This session profiles partners who have found workforce solutions and facilitates a discussion for next steps.

For some families the benefits of an energy-efficient home are out of reach. Programs focused on reaching low and moderate-income groups enable more families to access the benefits of energy efficiency. Hear from professionals creating programs and financing opportunities to allow under served markets access to quality energy-efficient housing.

Sometimes, low-energy relationships can be a good thing. Discover three examples of how state and local governments have encouraged and supported energy efficiency in their business communities through public-private partnerships, effective program design, and other innovative approaches to outreach, education and training.

**PANELISTS**

- Emily Schapira, Philadelphia Energy Authority
- Michelle Gransee, State of Minnesota
- Kerry O’Neill, Connecticut Green Bank
- Erik Schmidt, Chattanooga, TN
- Richie Stever, University of Maryland Medical Center
- Brian Lovell, Association of Controls Professionals
- Dan Ticona, Freddie Mac
- Deborah Philbrick, Elevate Energy
- Stefen Samarripas, American Council for an Energy-Efficient Economy
- Matthew Gray, Cleveland, OH
- Paul Miller, Baton Rouge Clean Air Coalition
- Nicole Stika, Greater Cleveland Partnership | Council of Smaller Enterprises
- Coleen Wisniewski, Chula Vista, CA

**Moderator**

- Michael DiRamio, U.S. Dept. of Energy
- Cedar Blazek, U.S. Dept. of Energy
- Madeline Salzman, U.S. Dept. of Energy
- Adam Guzzo, U.S. Dept. of Energy
### THURSDAY: 4:00 PM – 5:30 PM

#### OPTIMIZING DESIGN, OPERATIONS, AND MAINTENANCE FOR SMARTER BUILDINGS

<table>
<thead>
<tr>
<th>ROOM 25C</th>
<th>Data Driven Results</th>
</tr>
</thead>
</table>
| **Metrics & Big Data**
T24S71a |  |
| **Turning Data into Information with DOE Data Tools**
T24S71b |  |

This session will focus on the intersection between data analysis and sub-metering technologies, particularly as they can facilitate field validation of new technologies, best practices and energy efficiency optimization projects.

#### ROOM 22

DOE made the tools, and now you can see how they work. DOE’s Building Technologies Office presents implementation case studies focused on three of their standardized building energy data tools: Home Energy Score, Asset Score, and the Standard Energy Efficiency Data (SEED) Platform.

### ROOM 16

In February, Lawrence Berkeley National Lab hosted a stakeholder workshop with more than 25 commercial building industry leaders on where they want the future of smart building technologies to go. This session will highlight the key findings from the workshop and feature commercial partners that are implementing smart building technologies in their building portfolios as they share exciting new strategies and visions.

### ROOM 26C

Building envelopes account for 5.8 quads of energy each year. Keeping up with energy-saving envelope technologies while planning a new project or retrofit is challenging. Hear real-world examples while DOE’s Envelope Research Team highlights the latest technologies like dynamic windows, liquid flashing and primer-less air sealants, and integrated wall systems.

### ROOM 12

The Commercial Building Integration program (part of DOE’s Building Technologies Office) advances a range of innovative building technologies and solutions through research, development, and evaluation - paving the way for high performing buildings that could use 50-70% less energy than typical stock. Hear a review of some of the recent findings from field validation studies of energy-efficient technologies and see if any of them are a good fit for your buildings!

#### PANELISTS

**Steve Skarda**, Procter & Gamble  
**Altramese Roberts-Tomkins**, Toyota Motor Engineering & Manufacturing North America, Inc.  
**Anand Varahala**, Schneider Electric  

**Moderator**  
Bruce Lung, U.S. Dept. of Energy

**Erik Cathcart**, Earth Advantage  
**Neil Thompson**, Open Green Building Solutions  
**Katie Bergfeld**, District of Columbia  

**Amy Thompson**, University of Connecticut  
**Francisco Ruiz**, Oracle  
**Gregg Fischer**, Tishman Speyer  

**Simon Pallin**, Oak Ridge National Laboratory  
**Laverne Dalgleish**, Air Barrier Association of America  
**Stacy Lambright**, Hunter Douglas  

**Michael Deru**, National Renewable Energy Laboratory  
**Gina Schrader**, NextEnergy  
**Alicen Kandt**, National Renewable Energy Laboratory  

**Moderator**  
Amy Jiron, U.S. Dept. of Energy  

**Moderator**  
Harry Bergmann, U.S. Dept. of Energy  

**Moderator**  
Amy Jiron, U.S. Dept. of Energy  

**Moderator**  
Melissa Lapsa, Oak Ridge National Laboratory  

**Moderator**  
Jordan Hibbs, U.S. Dept. of Energy
## FINANCING, PERFORMANCE CONTRACTING, AND UTILITY PARTNERSHIPS

### Financing for Efficiency and Renewables Projects

<table>
<thead>
<tr>
<th>Session</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T22S11a</td>
<td>Cross-Sector Success: ESPC as an Energy Efficiency Strategy</td>
</tr>
<tr>
<td>T22S11b</td>
<td>Rethinking Traditional Finance: How Efficiency-as-a-Service Unlocks New Potential for Businesses</td>
</tr>
</tbody>
</table>

### ALL SESSIONS

<table>
<thead>
<tr>
<th>Time: 4:00 PM – 5:30 PM</th>
<th>BETTER BUILDINGS PEER EXCHANGE AND LEARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy &amp; Water Nexus Strategies</strong></td>
<td>Manufacturing</td>
</tr>
<tr>
<td>T20S11a</td>
<td>Preparing the Next Generation: Transition Planning for Energy Managers</td>
</tr>
<tr>
<td>T19S11a</td>
<td>Building Futures: Providing Sustainable Career Pathways for Residents</td>
</tr>
</tbody>
</table>

---

**ROOM 21**

Explore how Energy Savings Performance Contracting (ESPC) can jumpstart retrofit projects in targeted, high-potential sectors for greater impact. The session will highlight how three states have used their ESPC programs to enable greater energy efficiency in three sectors: local governments, state agencies, and the private sector.

**PANELISTS**

- Reid Conway, State of North Carolina
- Donald Perrin, State of New Hampshire
- Jacqueline Langhals, State of Ohio

**Moderator**

Alice Dasek, U.S. Dept. of Energy

---

**ROOM 10**

Explore recent developments in efficiency-as-a-service, a relatively new financing mechanism in which customers pay a provider for the service of energy savings. Panelists will also discuss recent high-profile corporate energy services agreement (ESA) deals, as well as emerging non-ESA models like lighting-as-a-service.

**PANELISTS**

- Alanna Gino, Redaptive
- Bob Hinkle, Metrus Energy
- Richard Braam, Bristol Hospital

**Moderator**

Holt Mountcastle, RE Tech Advisors

---

**ROOM 13**

This cross-sector panel features leaders who reexamined operations and established innovative water filtration and reuse strategies in cooling towers, manufacturing, and medical processes.

**PANELISTS**

- Jon Holland, Nissan North America
- Wendell Brase, University of California, Irvine

**Moderator**

Walt Brockway, Oak Ridge National Laboratory

---

**ROOM 9**

Do not let an untimely departure doom your energy efficiency progress! This session will examine how partners establish a successful transition plan for outgoing energy managers, including making the business case to senior management about keeping an energy manager - or even having one in the first place.

**PANELISTS**

- Leslie Marshall, General Mills
- Matthew Pekar, United Technologies Corporation
- Ryan Spies, Saint-Gobain Corporation

**Moderator**

Joshua Geyer, U.S. Dept. of Housing and Urban Development

---

**ROOM 14**

The Building Futures Initiative (formerly known as SEED) is a pilot exploring how affordable housing providers can provide unemployed and underemployed residents with the support they need to advance careers in construction and building performance. The key components are: partnering with local workforce development boards, technical colleges, and other stakeholders; and leveraging providers’ assets. Speakers will discuss their experiences using these levers to provide residents with comprehensive career development support.

**PANELISTS**

- Tina Brake, Cuyahoga Metropolitan Housing Authority
- Vlada Kenniff, New York City Housing Authority

**Moderator**

Joshua Geyer, U.S. Dept. of Housing and Urban Development

---

**PANELISTS**

- Matt Pekar, United Technologies Corporation
- Ryan Spies, Saint-Gobain Corporation

**Moderator**

Joshua Geyer, U.S. Dept. of Housing and Urban Development

---

**PANELISTS**

- Leslie Marshall, General Mills
- Matthew Pekar, United Technologies Corporation

**Moderator**

Joshua Geyer, U.S. Dept. of Housing and Urban Development

---

**PANELISTS**

- Alanna Gino, Redaptive
- Bob Hinkle, Metrus Energy

**Moderator**

Holt Mountcastle, RE Tech Advisors

---

**PANELISTS**

- Jon Holland, Nissan North America
- Wendell Brase, University of California, Irvine

**Moderator**

Walt Brockway, Oak Ridge National Laboratory

---

**PANELISTS**

- Reid Conway, State of North Carolina
- Donald Perrin, State of New Hampshire
- Jacqueline Langhals, State of Ohio

**Moderator**

Alice Dasek, U.S. Dept. of Energy
Training incumbent staff and creating a pathway for the next generation of energy efficiency professionals is a foundational element in high performance building design, operations, and maintenance. Our partners with credentialing organizations - including the Building Operator Certification® (BOC) and LEED (Leadership in Energy and Environmental Design) - will discuss workforce benefits, alignment with staffing policies and requirements, and success stories of technical career programs in the energy sector. Stakeholders will learn the benefits of credentialing and why it matters on the road to high performing smart buildings.

**PANELISTS**
- **Anisa Heming**, USGBC Center for Green Schools
- **Melanie Danuser**, Northwest Energy Efficiency Council

**Moderator**
Crystal McDonald, U.S. Dept. of Energy

**PANELISTS**
- **Emily Hopps**, Simpson Gumpertz & Heger
- **Fiona Aldous**, Wiss Janney Elstner Associates
- **Simon Pallin**, Oak Ridge National Laboratory
- **Elaine Sadowski**, Community College of Allegheny County

**PANELIST**
Sam Cramer, NASEO

**Moderator**
Melissa Lapsa, Oak Ridge National Laboratory

The U.S. Department of Energy and the National Association of State Energy Officials (NASEO) will convene a roundtable discussion for participants at the Better Buildings Summit to explore the use of ESPC and other financing mechanisms to improve the energy performance of state and local public buildings. The Roundtable will connect State Energy Officials, local government representatives, ESPC experts, and energy financing practitioners to share insights from model policies and promote the development of effective State Energy Office programs in the lead-by-example space. The event is by invitation only.
EXHIBIT LEVEL

EXHIBIT HALL A
Tuesday, 9:00 AM: Opening Plenary
Wednesday, 12:30 PM: Keynote Address
Thursday, 12:30 PM: Better Buildings Challenge
Partner Recognition and SWAP 4 Panel

EXHIBIT HALL B
Lunch

EXHIBIT HALL C
Trade Show
Ask-an-Expert Lounge

EXHIBIT LEVEL
GRAND BALLROOM A

Wednesday, 10:30 AM: Look Who’s Talking: Buildings and the Grid Roundtable
Wednesday, 2:00 PM: Resilience Roundtable
Wednesday, 5:30 PM: 2018 FEDS Spotlight

GRAND BALLROOMS B & C

Wednesday, 6:00 PM: Energy Exchange and Better Buildings Reception

GRAND BALLROOMS A

Grand Ballroom A
Grand Ballroom B
Grand Ballroom C

25A 25B 25C 26A 26B 26C

Meeting Rooms
Pre-function
Loading Docks
Restrooms
Elevator
Escalator
Stairs
Back of House