



# IDEA2019

## The Energy for More Resilient Cities

110<sup>TH</sup> ANNUAL CONFERENCE & TRADE SHOW | June 24-27

David L. Lawrence Convention Center / Westin Convention Center Hotel | Pittsburgh, PA

*Preliminary Program 6.21.2019  
TIMES ARE SUBJECT TO CHANGE*

### Sunday, June 23

8:00 am – 10:00 am	<b>IDEA Executive Committee Meeting</b> – <i>Executive Board Room at The Westin Hotel</i>
10:00 am – 12:30 pm	<b>IDEA Board Meeting</b> – <i>Cambria at The Westin Hotel</i>
3:00 pm – 5:00 pm	<b>Registration Open</b> – <i>Ballroom Gallery B</i>

### Monday, June 24

5:30 am – 2:00 pm	<b>IDEA Annual Golf Tournament</b> – <i>Quicksilver Golf Club</i>
7:00 am – 7:00 pm	<b>Registration Open</b> – <i>Ballroom Gallery B</i>
7:00 am – 7:50 am	<b>Workshop Breakfast</b> – <i>Ballroom B</i> Continental breakfast for all registered workshop attendees.
8:00 am – 4:00 pm	<b>Exhibit &amp; Poster Setup</b> – <i>Exhibit Hall B</i>
8:00 am – 4:00 pm	<b>Workshop 1 – District Energy: Think Global, Act Local</b> – <i>Room 406</i>
8:00 am – 4:00 pm	<b>Workshop 2 – Microgrids for Enhanced Resiliency</b> – <i>Room 407</i>
12:00 pm – 1:00 pm	<b>Workshop Luncheon</b> – <i>Ballroom B</i> For Workshop attendees only
4:00 pm – 5:30 pm	<b>Forums</b> – Open meetings for IDEA members to discuss current industry issues by specialty area.  <b>District Cooling Forum</b> – <i>Room 315</i> <b>Microgrid Forum</b> – <i>Room 316</i> <b>Operations &amp; Safety Forum</b> – <i>Room 317</i>

5:30 pm – 7:00 pm	<p><b>Exhibit Hall Ribbon Cutting &amp; Business Partners Welcome Reception – Exhibit Hall B</b> Sponsored by Burns &amp; McDonnell &amp; ONICON</p> <p><b>Poster Exhibits – Exhibit Hall B</b> Innovation Award Posters. This year’s winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year’s Innovation Award.</p>
7:00 pm – 9:30 pm	<p><b>Welcome Dinner and Game Night – Exhibit Hall B</b> Sponsored by Clearway Energy</p> <p>IDEA warmly invites our attendees and guests to join us for a casual and relaxed evening of food, fun, refreshments and friendly competition. Grab a plate, fill your glass and make your way to the quarterback toss challenge, the giant Jenga, the putting green or the virtual race track challenge. Pittsburgh loves its sports teams and we know how much IDEA members enjoy friendly competition, so bring your sneakers and win some fun prizes and claim your bragging rights.</p>

## Tuesday, June 25

7:00 am – 7:00 pm	<b>Registration Open – Ballroom Gallery B</b>
7:00 am – 7:50 am	<p><b>Breakfast with Business Partner Exhibitors – Exhibit Hall B</b> Sponsored by Chem-Aqua &amp; Con Edison Solutions</p>
7:15 am – 7:45 am	<p><b>Speaker Orientation Meeting – Room 304</b> Moderators and Speakers scheduled to present on Tuesday must attend. Coffee and breakfast will be served.</p>
9:00 am – 4:00 pm	<b>Spouse/Guest Program – City Tour of Pittsburgh</b>
8:00 am – 8:15 am	<p><b>Conference Opening – Ballroom A</b> <b>Introductions – Robert Thornton, IDEA President &amp; CEO</b> <b>Welcome to IDEA – Jim Lodge, IDEA Chair; Vice President, Strategy &amp; Business Development, Clearway Energy</b> <b>Welcome to Pittsburgh – Cliff Blashford, Vice President &amp; General Manager, Clearway Energy Pittsburgh</b></p>
8:15 am – 9:15 am	<p><b>Plenary Panel A: District Energy for More Resilient Cities, Campuses, Communities – Ballroom A</b></p> <p>Innovative district energy systems are being planned, constructed, expanded and modernized as North American cities, campuses and communities seek greater energy efficiency, enhanced reliability and resiliency, local resource solutions and proven technologies to cut carbon emissions. The catalysts for this industry growth are people from public sector, government and private-sector developers, operators, and investors. This panel will feature the principals involved in a massive federal infrastructure renewal project; an innovative partnering project for a mission-critical urban federal campus, a major urban brownfield development; and a strategic campus utility integration to enhance community resiliency and sustainability. These stories and cases will inspire, inform and advance our industry.</p> <p>National Capital Area Energy Services Acquisition Project, Public Works &amp; Government Services Canada (PGSC), Ottawa, ON Tomasz Smetny-Sowa, Senior Director, Public Works and Procurement Services, Federal Government Canada + Olivier Racle, Deputy Director District Heating &amp; Cooling, ENGIE</p>

	<p>US Capitol Power Plant Cogeneration Modernization, Washington, DC  Chris Potter, Director of Utilities &amp; Power Plant Operations, Architect of the Capitol + Scott Clark, Vice President and General Manager, Burns &amp; McDonnell</p> <p>National Western Center Development, Denver, CO  Barbara Frommell, Strategic Partnerships Director for Mayor’s Office, NWC + Catherine Thorn, Senior Director, Community Energy Planning, Enwave</p> <p>Pittsburgh District Energy Network Expansion and Integration, Pittsburgh, PA  Jim Lodge, Vice President, Strategy &amp; Business Development, Clearway Energy + Matthew Frist, Vice President, Duquesne University</p> <p><i>Moderated by Robert Thornton, President &amp; CEO, IDEA</i></p>			
<p>9:15 am – 10:15 am</p>	<p><b>Plenary Panel B: De-Carbonizing Cities with District Energy – Tools, Techniques and Trends – Ballroom A</b></p> <p>It’s become apparent that reducing emissions one building at a time is simply not adequate for the urgent task at hand. Communities large and small are now actively seeking collective, collaborative clean energy infrastructure to simultaneously strengthen economic competitiveness and cut carbon emissions. Community-scale aggregation for district cooling, renewable cooling, geo-exchange, thermal recovery, energy-sharing and CHP are all proven solutions that cities may deploy <b>today</b>. Panelists will describe recent projects and investments, effective policies and innovative business strategies for de-carbonizing cities and communities at scale. Panelists include:</p> <ul style="list-style-type: none"> <li>• Bader Saeed Al Lamki, Chief Executive Officer, Tabreed, Abu Dhabi, UAE</li> <li>• Nina Axelson, Vice President, Public Relations, Ever-Green Energy, St. Paul, MN</li> <li>• Ahmad Bin Shafar, Chief Executive Officer, Empower Energy Solutions, Dubai, UAE</li> <li>• Daniel Dixon, Energy Manager, Lincoln Electric System, District Energy Corporation, Nebraska Utilities Corporation, Lincoln, NB</li> <li>• Krishnan Iyer, President &amp; Chief Executive Officer, Creative Energy, Vancouver, BC</li> <li>• Bjarne Munk Jensen, Chief Executive Officer, Aarhus AffaldVarme, Aarhus, DK</li> <li>• Tom Nyquist, Executive Director of Utilities &amp; Engineering, Princeton University, Princeton, NJ</li> <li>• Lily Riahi, Senior Program Director, United Nations Environment, District Energy in Cities Initiative, Paris, FR</li> <li>• Michael Schack, Ph. D; Director, Decentralized Solutions for Cities &amp; Territories, ENGIE, Paris, FR</li> </ul> <p><i>Moderated by Robert Thornton, President &amp; CEO, IDEA</i></p>			
<p>10:15 am – 11:00 am</p>	<p><b>Refreshment Break with Business Partner Exhibitors – Exhibit Hall B</b>  <i>Sponsored by Affiliated Engineers, Inc. &amp; Ictec</i></p> <hr/> <p><b>Poster Exhibits – Exhibit Hall B</b>  Innovation Award Posters. This year’s winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year’s Innovation Award.</p>			
	<p><b>1A – Energy Infrastructure Planning</b>  <i>Ballroom B</i>  Moderator: Tom Parker, Burns &amp; McDonnell</p>	<p><b>1B – District Energy, CHP &amp; TES</b>  <i>Rooms 301, 302, 303</i>  Moderator: Chris Lyons, Solar Turbines</p>	<p><b>1C – Innovative Energy Solutions for Campuses &amp; Cities</b>  <i>Room 407</i>  Moderator: Nina Axelson, Ever-Green Energy</p>	<p><b>1D – System Performance &amp; Energy Savings</b>  <i>Room 406</i>  Moderator: Bruce Ander, Markham District Energy Inc.</p>

11:00 am – 11:30 am	Connecting to Ottawa's Emerging Downtown Districts – <i>Donald Grant &amp; Tomasz Smetny-Sowa, Public Services &amp; Procurement Canada</i>	Implementation of TES in an Existing District Cooling Plant – <i>Ahmed Al Kaabi, Empower Energy Solutions</i>	Districtlima, A District Energy System Success Story from Barcelona – <i>Joseph Marra, ENGIE</i>	District Energy System Performance & Savings: Approaches to Maximize End Use Performance – <i>Kevin Fox, Jacobs Engineering</i>
11:30 am – 12:00 pm	Energy Infrastructure Planning for Resilience, Carbon Reduction & Flexibility – <i>Mark Spurr, FVB Energy</i>	CHP & TES: Strange Bedfellows or a Match Made in Heaven? – <i>John Andrepont, The Cool Solutions Company</i>	Penn State Health Milton S. Hershey Medical Center CHP – <i>Saqib Khattak, CHA Consulting</i>	Advanced Software for Optimized Energy Systems – <i>Tristan Jackson, Advisian/Worley</i>
12:00 pm – 1:30 pm	<p><b>IDEA Recognition and Awards Luncheon – Spirit of Pittsburgh Ballroom A</b>  <i>Sponsored by Johnson Controls</i></p> <p><b>Allegheny County and the City of Pittsburgh</b> will be recognized by the <b>United Nations Environment District Energy in Cities Initiative</b> for their collaboration, vision and commitment to modernizing local energy infrastructure through district energy/CHP/microgrids. Greater Pittsburgh stands out as a place of collaboration, cooperation, and common purpose serving the collective community interests for a more competitive economic future. Special recognition of <b>County Executive Rich Fitzgerald</b> and <b>Pittsburgh Mayor William Peduto</b> will be followed by remarks and a conversation among community leaders participating in the energy system renewal and renaissance.</p>			
1:30 pm – 2:15 pm	<p><b>Dessert and Coffee with Business Partner Exhibitors – Exhibit Hall B</b>  <i>Sponsored by BOND &amp; EVAPCO</i></p> <p><b>Poster Exhibits – Exhibit Hall B</b>                  Innovation Award Posters. This year's winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year's Innovation Award.</p>			
	<p><b>2A – Approaches for Thermal Network Asset Deployment</b>  <i>Ballroom B</i>                  Moderator: <i>Jeff Duncan, R.G. Vanderweil Engineers, LLP</i></p>	<p><b>2B – Resilient Energy for Critical Facilities</b>  <i>Rooms 301, 302, 303</i>                  Moderator: <i>Kevin Fox, Jacobs Engineering Group</i></p>	<p><b>2C – Strategies for Project Engagement</b>  <i>Room 407</i>                  Moderator: <i>Soam Goel, Anbaric Development Partners</i></p>	<p><b>2D – Innovative Energy &amp; Water Solutions</b>  <i>Room 406</i>                  Moderator: <i>Patricia Wilson, Affiliated Engineers, Inc.</i></p>
2:15 pm – 2:45 pm	Maximizing the Usefulness of Existing Assets: University of Nebraska-Lincoln Utility Master Plan – <i>Justin Grissom &amp; Zach Poss, Burns &amp; McDonnell; Lalit Agarwal, University of Nebraska – Lincoln</i>	Achieving Critical Power for Critical Loads – <i>Chris Evanich, S&amp;C Electric</i>	Planning an Aquifer Thermal Energy Storage Project at the Ford Site, St. Paul, MN – <i>Mark Worthington, Underground Energy; Nina Axelson, Ever-Green Energy</i>	Reaching New Depths – How a Hospital Modernized a Subsurface District Energy Plant – <i>Dave Ohler, RMF Engineering</i>
2:45 pm – 3:15 pm	Data-Based Tools for the Planning & Development of Thermal Networks – <i>Michael King, District Energy Development; Alastair Robinson, Lawrence Berkeley National Laboratory; Paolo Michele Sonvilla, Creara; Joshua Thumim, Centre for Sustainable Energy</i>	Resilient Airport Microgrids – <i>Michael Walton, Burns Engineering; Michael Adams, Allegheny County Airport Authority</i>	Stakeholder Relationship Management – <i>Emma Walker, GI Energy; Libby Edgar, Shell Connected Energy, New Energies</i>	Innovative Water Recovery System Saves 50M Gallons per Year – <i>Gordon Judd, Clearway Energy</i>

3: 15 pm – 4:00 pm	<b>Refreshment Break with Business Partner Exhibitors – Exhibit Hall B</b> <i>Sponsored by Siemens</i>			
	<b>Poster Exhibits – Exhibit Hall B</b> Innovation Award Posters. This year's winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year's Innovation Award.			
	<b>3A – Boston's Smart Utility Toolbox</b> <i>Ballroom B</i> <i>Moderator: Dominick Roveto, Ellenzweig</i>	<b>3B – Microgrids Leveraging District Energy</b> <i>Rooms 301, 302, 303</i> <i>Moderator: Christopher Berendt, Drinker Biddle &amp; Reath LLP</i>	<b>3C – Savings with Energy Procurement, Liquid Biofuels</b> <i>Room 407</i> <i>Moderator: Joe Hoose, Cool Systems</i>	<b>3D – Metering &amp; Controls</b> <i>Room 406</i> <i>Moderator: Jason Wittkamp, Thermo Systems</i>
4:00 pm – 4:30 pm	Boston Smart Utilities Policy - Advanced Energy Solutions for New Large Developments in Boston – <i>Manuel Esquivel, Boston Planning &amp; Development Agency; Bradford Swing, City of Boston</i>	Microgrids-Using the District Heating System as the Grid to Reduce Costs – <i>Joseph Martorano, Kiely Family of Companies</i>	Innovative Approach To Commercial Duct Sealing Offers New Low Hanging Fruit For Major Energy-Savings – <i>April Frakes, AeroSeal</i>	Hydronic Flow & Energy Metering: Best Practices for Selecting & Installing the RIGHT Metering Technology – <i>Barry Dunham &amp; Kat Liegl, ONICON</i>
4:30 pm – 5:00 pm	Implementing Boston's Microgrid & District Energy Regulations – <i>Terence Waldron, Waldron Engineering &amp; Construction</i>	Hospital Resilience Planning – Building a "Roadmap to Resilience" Through Microgrid Solutions – <i>Maggie Clout, Siemens</i>	Renewables Procurement: Creating New Ways to Raise Sustainability – <i>Chuck Lanager, Trane</i>	Energy Conservation Through Sub-Metering at Northwestern University – <i>Tim Angerame, utiliVisor; Julie Cahillane, Northwestern University</i>
5:00 pm – 5:30 pm	Piloting Boston's Smart Utility Policy: Exchange South End – <i>Derek Fehrer, WSP USA</i>	Lessons Learned From a Number of Microgrid Feasibility Studies – <i>Bahman Daryanian &amp; Lavelle Freeman, GE Energy</i>	Comparisons & Case Studies of Liquid Biofuels – <i>Daniel Wallace, Preferred Utilities Manufacturing Corp</i>	Data Informed Decision Making – <i>Laura Christensen, Kerr Wood Leidal</i>
5:30 pm – 6:45 pm	<b>Reception with Business Partner Exhibitors – Exhibit Hall B</b> <i>Sponsored by Solar Turbines &amp; Trane</i>			
	<b>Poster Exhibits – Exhibit Hall B</b> Innovation Award Posters. This year's winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year's Innovation Award.			
7:00 pm	<b>Open Evening</b> – Enjoy an open evening to explore Pittsburgh and experience the city on your own.			

### Wednesday, June 26

7:00 am – 5:00 pm	<b>Registration Open – Ballroom Gallery B</b>
7:00 am – 7:50 am	<b>Breakfast with Business Partner Exhibitors – Exhibit Hall B</b> <i>Sponsored by Enwave North America</i>
7:15 am – 7:45 am	<b>Speaker Orientation Meeting – Room 304</b> Moderators and speakers scheduled to present on Wednesday must attend. Coffee and Breakfast will be served.

	4A – Planning for Pittsburgh’s Energy Pathway Ballroom B Moderator: Grant Ervin, City of Pittsburgh	4B – District Energy, CHP & Microgrids Rooms 301, 302, 303 Moderator: Jonathan Coleman, Solar Turbines	4C – Integrating Renewables & Low-Carbon Solutions Room 407 Moderator: John Spanhake, NV5	4D – Design, Construction & Commissioning Room 406 Moderator: Tim Peer, BOND
8:00 am – 8:30 am	Introduction – <i>Grant Ervin, City of Pittsburgh</i> Conceptualizing District Energy in Pittsburgh: The Grid of Microgrids – <i>Greg Reed, University of Pittsburgh Center for Energy and the Energy GRID Institute</i>	A Digital Network to Control a Modern DES – <i>Serdar Tufekci, ENGIE</i>	Planning for Capital Requirements for Carbon Reduction on University Campuses – <i>James Bohn, FVB Energy</i>	Design and Construction of a New District Energy System in Pittsburgh PA – <i>Tim Johnston, Clearway Energy</i>
8:30 am – 9:00 am	District Energy Systems in Pittsburgh: A Legacy of Leadership – <i>Jim Lodge, Clearway Energy</i> Governance Models and Leadership for District Energy – <i>Bo Riisgaard Pedersen, Consulate General of Denmark</i>	Benefits of CHP for District Heating & Health Campuses in a Changing Energy Environment – <i>Robert Bouwens, Siemens</i>	Decarbonizing a District Energy System – <i>Robert Bland, Cornell University</i>	Critical Facility CHP Commissioning: Lessons Learned – <i>Brian Wodka &amp; Joseph Luccese, RMF Engineering; Kevin Kanoff, PennState Health Milton S. Hershey Medical Center</i>
9:00 am – 9:30 am	Connecting Local Infrastructure Goals to International Ideals: District Energy as a Strategy for Adaptation & Decarbonization – <i>Katrina Kelly-Pitou, University of Pittsburgh</i>	Integrated Solution for UTA Microgrid – <i>Roberto del Real, University of Texas at Austin; Frederick Huff, Emerson Automation Solutions</i>	Tapping into Wastewater Thermal Energy at the National Western Center in Denver – <i>Barbara Frommell, City and County of Denver; Catherine Thorn, Enwave; Jim McQuarrie, Denver Metro Wastewater Reclamation District</i>	Decommissioning a CHP Plant for Reuse – <i>Christopher Cseryei &amp; Hailey Slamka, CHA Consulting</i>
9:30 am – 10:00 am	The Impact & Importance of District Energy in Building a Cleaner, More Efficient Pittsburgh – <i>Elaine Trimble, Siemens</i> Panel Discussion – <i>Moderated by Grant Ervin, City of Pittsburgh</i>	CHP Design Considerations for Municipal Water Treatment Facilities – <i>Paul Brown, Cleaver-Brooks; Jonathan Coleman, Solar Turbines</i>	Resilience Gaps & Clean Energy Solutions at State-Owned Medical & Residential Care Facilities in Massachusetts – <i>Geoff Gunn &amp; Alan Glynn, Arup</i>	Dirty Water vs. Clean Water..... Critical Flushing Techniques for New Building Connections – <i>Russell Buras, Purge Rite</i>
9:30 am – 11:00am	<b>Spouse/Guest Program</b> – Architectural Walking Tour			

10:00 am – 10:45 am	<b>Refreshment Break with Business Partner Exhibitors – Exhibit Hall B</b> <i>Sponsored by U.S. DOE Advanced Manufacturing Office &amp; The Whiting-Turner Contracting Co.</i>			
	<b>Poster Exhibits – Exhibit Hall B</b> Innovation Award Posters. This year's winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year's Innovation Award.			
	<b>5A – Communities &amp; Customers as Partners</b> <i>Ballroom B</i> <i>Moderator: Sandeep Jain, Advisian/Worley</i>	<b>5B – Optimization for Thermal Systems</b> <i>Rooms 301, 302, 303</i> <i>Moderator: Ron Monk, Kerr Wood Leidal Associates Ltd.</i>	<b>5C – District Cooling</b> <i>Room 407</i> <i>Moderator: John Andrepont, The Cool Solutions Company</i>	<b>5D – Resilience Planning with Innovative Infrastructure Strategies</b> <i>Room 406</i> <i>Moderator: Justin Carron, Eaton</i>
10:45 am – 11:15 am	System Success Through Customer Care – <i>Jenae Batt &amp; Steve Rambeck, Ever-Green Energy</i>	Impact of Combustion Turbine Upgrades on Heat Recovery Steam Generators – <i>Anand Gopa Kumar, HRST Inc</i>	Phasing Required for Adding CHW Capacity & Replacing Aging Infrastructure for an Urban Campus – <i>Jim Harris, Burns &amp; McDonnell; Mike Sinack &amp; Stephen Svoboda, University of Pittsburgh</i>	How to Integrate CHP & District Energy in City-Level Resilience Planning – <i>Anne Hampson, ICF; Tarla Toomer, U.S. Department of Energy</i>
11:15 am – 11:45 am	Accelerating Zero Energy Communities of the Future – <i>Sarah Zaleski, U.S. Department of Energy; Ben Polly, National Renewable Energy Laboratory</i>	The Benefits of Using Steam District Energy – <i>Patrick Lach, Maxi-Therm; Tricia Marts, Veolia</i>	How Data Acquisition Helps to Improve Plant Performance Effectively – <i>Thani Al Mansoori, Empower Energy Solutions</i>	The New Old Chiller – <i>Rajesh Dixit, Johnson Controls</i>
11:45 am – 12:15 pm	Positive Community Impact Through a Health System's Sustainable Campus Transformation Plan – <i>Peter Dahl, HGA; Sarah O'Keefe, MetroHealth System</i>	Optimizing Renewable Energy Sources for Campus District Energy – <i>Andrew Haden, Wisewood Energy</i>	A Study on District Cooling Systems in APEC – <i>Elvira Gelindon, Asia Pacific Energy Research Centre</i>	Thermal Micro Grid – A European Solution for Smarter Cities – <i>Lars Bierlein, E.ON Energilösningar AB</i>
12:15 pm – 2:00 pm	<b>IDEA Annual Business Meeting and Recognition Luncheon – Ballroom A</b> <i>Sponsored by Eaton</i>			
2:00 pm – 2:45 pm	<b>Dessert and Coffee Networking Break with Business Partner Exhibitors – Exhibit Hall B</b> <i>Sponsored by Jacobs &amp; Rentech Boiler Systems</i>			
	Raffle prizes to be awarded, must be present to win.			
	<b>Poster Exhibits – Exhibit Hall B</b> Innovation Award Posters. This year's winner, honorable mentions and select nominees will be available by their posters to discuss the projects they submitted for this year's Innovation Award.			
2:45 pm – 5:30 pm	<b>Exhibit Hall &amp; Poster Tear Down – Exhibit Hall B</b>			

	<b>6A – Harnessing Renewable Energy &amp; District Energy for Carbon Reduction</b> <i>Ballroom B</i> <i>Moderator: Robert Smith, RMF Engineering</i>	<b>6B – Challenges &amp; Solutions for Advancing Energy Infrastructure</b> <i>Rooms 301, 302, 303</i> <i>Moderator: Ben Polly, National Renewable Energy Laboratory</i>	<b>6C – Innovative Approaches to Resilient Cities</b> <i>Room 407</i> <i>Moderator: Mike Dempsey, Burns &amp; McDonnell</i>	<b>6D – Distribution System Best Practices</b> <i>Room 406</i> <i>Moderator: Andrea Ruotolo, Advisian/Worley</i>
2:45 pm – 3:15 pm	Energy Strategies for Greenhouse Gas Reduction: A Comparison of Colorado and California – <i>Derek Fehrer, WSP USA</i>	Energy Modeling & Analysis of Modern Absorption Cooling & Heating in District & CHP Systems – <i>Bin Li, Broad USA</i>	Resilient Cities & the New Energy Paradigm – <i>Lidija Sekaric, Siemens; Grant Ervin, City of Pittsburgh</i>	Insulation Secrets for Saving Millions in Energy Costs – <i>Terry Roach, Shannon Enterprises</i>
3:15 pm – 3:45 pm	A City's Climate Toolbox: Exploring Water-Based District Heating and Cooling for Metro Boston – <i>Cammy Peterson, Metropolitan Area Planning Council</i>	How Do the Differences Between Standards (EN, ASTM & ASME) Effect the Quality, Cost & Expected Service Life of a DE Scheme? – <i>Jan Sundgaard, isoplus Piping; Dan Kelley, Ramboll</i>	Hydropower: Smart Energy – <i>Sonya Reiser, Jacobs Engineering</i>	Case Studies on PE-RT Hot Water Piping for Campus Energy – <i>Wes Long, Performance Pipe</i>
3:45 pm – 4:15 pm	Partnerships for Energy Renewal – <i>Soam Goel, Anbaric Development Partners</i>	Infrastructure Management and Maintenance - The Nexus of Budgets, Staff and Knowledge – <i>Albert Gilewicz, Sole Proprietor (Formerly Purdue University)</i>	Using Generators and Batteries as Non-Wires Alternatives – <i>Philip Gonski, Burns Engineering</i>	What You Need to Know About Thin Insulation – <i>Natalia Maximova, Johns Manville</i>
4:15 pm – 4:45 pm	Energy Planning for Carbon Reduction Outcomes – <i>Dan Kelley, Ramboll</i>	Community Microgrids: Time for a New Regulatory Compact? – <i>Patrick Morand, Duane Morris LLP</i>	Energy Systems: A View from 2035 – <i>Geoff Gunn &amp; Alan Glynn, Arup</i>	Antifouling Protection Drives Energy Savings – <i>Noah Snyder, Interphase Materials</i>
6:00 pm – 7:00 pm	<b>Chair's Cocktail Reception (Business Attire) – Allegheny Foyer at The Westin Hotel</b>			
7:00 pm – 10:30 pm	<b>Annual Chair's Recognition and Awards Banquet (Business Attire) – Allegheny Grand Ballroom at The Westin Hotel</b> <i>Dinner Sponsored by ENGIE &amp; Wine Sponsored by Thermo Systems</i>			

### Thursday, June 27

7:30 am – 9:00 am	<b>Breakfast Briefing with Pre-Tour Overview Presentations – Allegheny Grand Ballroom at The Westin Hotel</b>
9:15 am – 1:00 pm	<b>Technical Tours</b> Tour A & B - Clearway Energy's Energy Center Pittsburgh Uptown plant and Duquesne University; Tour C - Eaton's Power System Experience Center. Pre-registration required.