



## SYMPOSIUM

Colorado Energy Research Collaboratory

### AGENDA

**Title:** 21<sup>st</sup> Century Energy Transition (8<sup>th</sup> annual)  
**Theme:** Driving Innovations  
**Location:** Grand Hyatt, 1750 Welton Street, Denver, Colorado  
**Co-Hosts:** Collaboratory organizations (Colorado School of Mines, University of Colorado Boulder, Colorado State University, National Renewable Energy Laboratory)

#### Monday, April 1, 2019 -- Day one

7:30am-7:00pm	Registration and Information Desk	Registration Desk
7:30-8:30am	Continental Breakfast and Networking	Foyer
8:30-8:45am	Welcome by Maury Dobbie, Executive Director, Colorado Energy Research Collaboratory, Symposium Chair	Aspen Ballroom
8:45-9:15am	General Session <b>Keynote</b> “ <b>Integrative Design for Radical Energy Efficiency</b> ” -- Amory Lovins, Co-Founder & Chief Scientist, , Rocky Mountain Institute	Aspen Ballroom
9:15-9:45am	General Session <b>Keynote</b> “ <b>How the Federal Government is Working to Solve National Challenges</b> ” -- Conner Prochaska, Chief Commercialization Officer, Dir. Office of Technology Transition, U.S. Department of Energy	Aspen Ballroom
9:45-10:15am	General Session <b>Keynote</b> “ <b>Bridging the Gap: Discovery, Research &amp; World-Changing Solutions Impacting at a Global Scale</b> ” -- Eric Toone, Exec. Managing Director & Science Lead, Breakthrough Energy Ventures	Aspen Ballroom
10:15-10:45am	<b>Moderated Q&amp;A session</b> with the previous three keynote speakers. Moderator: Honorary Symposium Chair, Former Colorado Governor Bill Ritter, Director, Center for the New Energy Economy, CSU	Aspen Ballroom
10:45-11:10am	General Session <b>Panel</b> “ <b>Collaboratory: Addressing Grand Challenges Through Collaboration</b> ” Hear how the four Collaboratory entities have created economic impact in Colorado while building an innovation ecosystem since 2008. Collaborative teams have taken energy-related research from ideas to innovative deployment. Presenter: Terri Fiez, Vice Chancellor for Research & Innovation, CU Boulder, and Chair of Collaboratory Executive Board Presenter: Peter Green, Deputy Lab Director, Science & Technology, NREL and Member of Collaboratory Executive Board	Aspen Ballroom
11:10-noon	BREAK FOR LUNCH <b>Lunch sponsor: Cimarex Energy</b>	
Noon-12:10pm	General Session <b>Keynote</b> “ <b>Government’s Role in Driving Innovation</b> ” -- Colorado Governor Jared Polis	Aspen Ballroom
12:10-1:15pm	General Session <b>Panel</b> “ <b>Driving Innovation Through Policy &amp; Economic Development</b> ” Moderator: Bill Ritter, Director, Center for the New Energy Economy, CSU	Aspen Ballroom

	<p>Panelist #1: Betsy Markey, Exec. Dir., Office of Econ Development &amp; International Trade, State of Colorado</p> <p>Panelist #2: Colorado State Representative Chris Hansen</p>	
1:15-2:15pm	<p>General Session <b>Panel “Powering Women in Energy—Our Journey”</b></p> <p>Moderator: Jill Cooper, Senior Principal, Geosyntec Consultants</p> <p>Panelist #1: Alice Jackson, President Xcel Energy-Colorado</p> <p>Panelist #2: Maggie Fox, Principal, MaggieFoxStrategies</p> <p>Panelist #3: Dena Lund, Executive VP of Operations &amp; Engineering, Sterling Energy</p> <p>Panelist #4: Jennifer Guidry, VP, Global Health, Safety &amp; Environment, Precision Drilling</p> <p>Panelist #5: Barbara Bergersen, Senior Vice President, Permian EOR, Occidental Oil &amp; Gas Corporation</p>	Aspen Ballroom
2:15-2:20pm	Colorado C3E announcement by Judy Dorsey, President/Principal, Brendle Group	Aspen Ballroom
2:20-2:35pm	BREAK	Foyer
2:35-3:35pm	<p><b>Breakout #1: Track A – “Food/Energy/Water Innovative Systems Strategies”</b></p> <p>Moderator: Former United States Secretary Tom Vilsack, Strategic Advisor of Food &amp; Water Initiatives, National Western Center, Colorado State University System</p> <p>Panelist #1: Ramsay Huntley, VP Clean Technology &amp; Innovation Philanthropy Program Officer, IN2 at National Renewable Energy Lab.</p> <p>Panelist #2: Jocelyn Hittle, Director of Denver Program Dev., CSU</p> <p>Panelist #3: John Pellegrino, Prof Research, Mech. Eng. Dept, University of Colorado</p>	Aspen Ballroom
	<p><b>Breakout #1: Track B – “Innovations in Power System Transformation”</b></p> <p>Moderator: Dave Mooney, Exec. Dir. Institutional. Planning/Integration/Dev, NREL</p> <p>Panelist #1: Julie Lundquist, Assoc Prof, Dept. of Atmospheric &amp; Oceanic Sciences, Univ of Colorado/Fellow, Renewable and Sustainable Energy Institute NREL</p> <p>Panelist #2: Joe Berry, Senior Scientist, Perovskite &amp; Hybrid Solar Cells Team Lead, NREL</p> <p>Panelist #3: Dan LeFevers, State &amp; Consumer Programs, Gas Technology Institute</p> <p>Panelist #4: Yun Lee, Director of U.S. Solar, Panasonic</p>	Colorado A
	<p><b>Breakout #1: Track C -- “Innovations &amp; Trends in Oil &amp; Gas”</b></p> <p>Introduction of Mike Farina: Stefanie Tompkins, VP Research &amp; Technology Transfer, Colorado School of Mines</p> <p>Moderator: Michael Farina, Strategy &amp; Growth Leader, Fullstream Gas &amp; Power, Baker Hughes, a GE company</p> <p>Panelist #1: Dan Zimmerle, Senior Research Associate, CSU</p> <p>Panelist #2: Shaun Higgins, Air Permitting Supervisor, Noble Energy</p> <p>Panelist #3: Sha-Chelle Manning, VP Technology &amp; Innovation, Cimarex Energy Co.</p> <p>Panelist #4: Michael Teague, Strategic Advisor &amp; Systems Integrator, Adamantine Energy</p>	Colorado B
3:35-3:50pm	BREAK	
3:50-5:20pm	<p>General Session <b>Panel “Decarbonization Solutions”</b> Five minute lightning rounds by researchers on a variety of topic areas focused on solutions. (2 groups switch out on stage)</p> <p><b>Group A Moderator: Bryan Willson, Director, Energy Institute, Colorado State University</b></p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Kurt Barth, a director, Next Generation Photovoltaics Center, Colorado State University [Solar's ascendancy to an economic energy solution, our Center's contributions and what's next?]</li> <li>2. Sybil Sharvelle, Assoc. Prof, Civil &amp; Environmental Engineering, Colorado State University [Generation of fuel products from organic waste material is an attractive way to reduce carbon footprint]</li> </ol>	Aspen Ballroom

	<p>3. Greg Rieker, Director, Precision Laser Diagnostics Lab, University of Colorado Boulder [Leveraging lasers to realize the full potential of natural gas as a transition fuel]</p> <p>4. James Cale, Associate Prof, Mechanical Engineering/Systems Engineering, Colorado State University [Hybrid microgrid technology: transitioning from fossil fuels to sustainable energy sources while reducing harmful emissions]</p> <p>5. Jill Engel-Cox, JISEA Director, NREL [Advancements in clean energy technologies and their integration across multiple sectors (industry, commercial, transportation, residential)]</p> <p>6. Dan Steinberg, Senior Researcher, Manager of Economics &amp; Forecasting Group, NREL [Examining the potential for and impacts of end-use electrification]</p> <p>7. Kathleen Staks, Director of External Affairs, Guzman Energy [Guzman Energy has used market conditions to help a community transition to cheaper, clean energy]</p> <p>8. Mark Northam, Executive Director, School of Energy Resources, University of Wyoming [Carbon Capture, Utilization and Storage: Still a viable pathway to low emissions energy?]</p> <p><b>Group B Moderator: Ryan Richards, Prof. of Chemistry, Director Renewable Energy &amp; Materials Science &amp; Engineering Center (REMRSEC), Colorado School of Mines</b></p> <p><b>Panelists:</b></p> <p>9. Matthew Posewitz, Professor, Dept. of Chemistry, Colorado School of Mines, [Algal conversion of Co2 to fuel and other products]</p> <p>10. Brent Buck, CEO, Ajax Analytics [Using continuous monitoring with advanced software and analytics to understand air emissions from oil &amp; gas development]</p> <p>11. Alexis Sitchler, Assoc Prof, Geochemistry, Assoc Dir, Hydrologic Science &amp; Engineering Graduate Program, Colorado School of Mines, [Geochemistry of geologic carbon sequestration]</p> <p>12. Gregor Henze, Department of Civil, Environmental &amp; Architectural Engineering, University of Colorado Boulder [Human presence detection, occupancy-aware operation, and reinforcement learning control for grid-interactive efficient buildings]</p> <p>13. Wangda Zuo, Associate Professor, Lewis-Worcester Faculty Fellow, Dept of Civil, Environmental &amp; Architectural Engineering, University of Colorado Boulder [Smart, Sustainable, and Connected Communities via Integrated Modeling of Energy, Transportation and Communication systems]</p> <p>14. Manika Prasad, Prof, Petroleum Engineering, Colorado School of Mines, Co2 storage (Sequestration)</p> <p>15. Tom Foust, Center Director, National BioEnergy Center, NREL [BioEnergy related contributions to global decarbonization strategies]</p> <p>16. Matt Lucas, Assoc Dir for Carbontech [Carbontech Labs: the startup accelerator and investment fund for innovators converted carbon waste to value]</p>	
5:20-6:15pm	Public Reception (appetizers served, cash bar) <b>Reception sponsor: SoCalGas</b>	Foyer
6:15-7:00pm	General Session <b>Keynote “Leading the Clean Energy Transition - Reliably and Affordably”</b> Alice Jackson, President, Xcel Energy-Colorado	Aspen Ballroom
7:00pm	Adjourn Day 1	

**Tuesday, April 2, 2019 -- Day two**

7:30am-noon	Registration and Information Desk	Reg Desk
7:30-8:30am	Continental Breakfast and Networking	Foyer
8:30-8:45am	Welcome – Maury Dobbie, Executive Director, Collaboratory, Symposium Chair	Aspen
8:45-9:45am	<p>General Session <b>Panel “Global Trends, Innovation &amp; Emerging Markets in Energy”</b>  Moderator: Morgan Bazilian, Director, Payne Institute and Professor of Public Policy, Colorado School of Mines</p> <p>Panelist #1: Amy Schweikert, Fellow in the Payne Institute for Public Policy, Colorado School of Mines</p> <p>Panelist #2: Atul Arya, Sr. VP &amp; Chief Energy Strategist, IHS Markit</p> <p>Panelist #3: Antoine Halff, Chief Analyst, Kayrros &amp; Director, Global Oil Markets Program, Columbia University Center on Global Energy Policy</p> <p>Panelist #4: Barbara Silva, CEO, ATAMOSTEC Solar from Chile</p>	Aspen Ballroom
9:45-10:00am	BREAK	
10:00-11:00am	<p><b>Breakout #2: Track A – “Digitization of Energy”</b>  Moderator: Alan Rudolph, VP of Research, Colorado State University</p> <p>Panelist #1: Juan Torres, Associate Lab Director, Energy Systems Integration, NREL</p> <p>Panelist #2: Antonio Trujillo, Technology Manager, Eaton Corporation</p> <p>Panelist #3: Clifton Black, Principal Research Engineer, Southern Company</p>	Aspen Ballroom
	<p><b>Breakout #2: Track B – “Innovations in Produced Water Treatment and Reuse”</b>  Introduction of Ken Carlson: Bryan Willson, Director, Energy Institute at CSU  Moderator: Ken Carlson, Assoc. Prof, Dept. of Civil &amp; Environmental Engineering, Colorado State University</p> <p>Panelist #1: Tzahi Cath, Prof, Civil and Environmental Engineering Colorado School of Mines</p> <p>Panelist #2: Todd Bandhauer, Asst. Prof, Dept. Mechanical Engineering, Colorado State University</p> <p>Panelist #3: Taylor Rowley, Senior Environmental Rep., Anadarko</p> <p>Panelist #4: Peter Gintautas, Environmental Protection Specialist, Colorado Oil &amp; Gas Conservation Commission</p>	Colorado A
	<p><b>Breakout #2: Track C – “Innovations in Clean Transportation” (Mobility)</b>  Moderator: Bob McGrath, Executive Director, RASEI, CU Boulder</p> <p>Panelist #1: Will Toor, Director, Colorado Governor’s Energy Office</p> <p>Panelist #2: Michael Salisbury, Trans. Energy Lead, City &amp; County of Denver</p> <p>Panelist #3: Noah Long, Director, Interior West &amp; Northwest, Climate &amp; Clean Energy Program, Nat. Resources Def. Council</p> <p>Panelist #4: Dean Klingner, Deputy Director, Planning, Development &amp; Transportation, City of Fort Collins</p>	Colorado B
11:00-11:15am	BREAK	
11:15am-12:15pm	<p>General Session <b>Panel “Utilities Driving Innovation”</b>  (Commitments in reducing carbon)  Moderator: David Eves, Exec. VP, Group Pres.-Utilities, Xcel Energy</p> <p>Panelist #1: Jerry Marizza, New Business Director, United Power Cooperative</p> <p>Panelist #2: Sharon Tomkins, VP of Customer Solutions &amp; Strategy, SoCalGas</p> <p>Panelist #3: Andy Butcher, COO, Platte River Power Authority</p>	Aspen Ballroom
12:15pm	Wrap up by Bill Ritter, Honorary Chair -- Adjourn Day 2	