



The Energy Institute and the School of Global Environmental Sustainability will host the seventh annual 21st Century Energy Transition Symposium at CSU on October 30-31. The two-day event encapsulates an ever-broadening dialogue around the U.S. and world's energy transition and the topics surrounding those complex issues. The Women in Clean Energy lunch will kick off the event, which in the past, has inspired an audience of men and women on energy-related topics while discussing how to “unleash the power of women in an ever-changing energy landscape.” At this year's event, you'll hear from experts on “energy's grand challenges” including how innovation, research and policy can lead to national and global impact. Speakers will discuss how clean energy leadership is being taken up by cities, states and corporations, how effective cyber and energy security impacts the U.S. interlinked networks as well as how decarbonizing fossil fuels can be accomplished. The evening keynote speaker on Oct 30 will be Amory Lovins, co-founder and chief scientist at Rocky Mountain Institute. You'll hear how understanding human behavior is critical to achieving energy and climate goals. In addition, researchers will share actual solutions and innovations that are in the marketplace helping to solve complex energy issues our world is facing today. On Oct 31, a session moderated by former Colorado Governor Bill Ritter will include sitting Governors from Wyoming and Colorado will share how they believe they can inspire non-partisan collaborations and regional cooperation. A panel will discuss the key issues facing electric utilities, state policy makers, cities and corporations as part of the transition to a low-carbon electric grid. Another session will discuss megatrends and associated challenges related to energy security and the impending transition to a low carbon energy future on a global scale. A high powered, experienced and diverse capstone panel will end the two day event while recapping what was shared at the symposium with forward-thinking insights. As in the past years, Colorado State University strives to host a balanced event that welcomes diverse thought leaders.

Date: October 30-31, 2017

Location: Colorado State University, Lory Student Center, 1101 Central Avenue, Ft. Collins, CO

Cost: Free of charge. Everyone must register – [click here](#).

For more information about the two day symposium [click here](#).

Monday, October 30 -- 7th Annual 21st Century Energy Transition Symposium



Women in Clean Energy Luncheon

10:30–7:00 pm: Exhibits and Research Posters Open

10:30-11:15 am: Registration & Networking Lunch (men & women in all energy-related fields encouraged to attend!)

11:15-11:30 am: Welcome Remarks – Maury Dobbie, Assistant Director, Center for the New Energy Economy, CSU & Executive Director, Colorado Energy Research Collaboratory (21st Century Energy Symposium Chair)

11:30 -12:35 pm: “Unleashing the Power of Women in an Ever-Changing Energy Landscape” Keynote Panel

Panelists will address areas where women can help produce a favorable business climate while meeting environmental, climate, social justice, job creation, economic development impacts and community goals. This panel of distinguished women executives will share their stories and observations as they moved through their respective careers.

Moderator: Bobi Garrett, Deputy Laboratory Director, Chief Operating Officer, National Renewable Energy Laboratory

Panelist #1: Amy Halloran, Sr. Manager, 6120, Renewable Energy Technologies, Sandia National Laboratories

Panelist #2: Laura Nelson, Governor’s Energy Advisor and Executive Director, Utah Governor’s Office of Energy Development

Panelist #3: Cathy Woollums, Senior Vice President, Environmental Services and Chief Environmental Counsel, Berkshire Hathaway Energy

12:35-12:45 pm: Next Steps and Future Vision for Colorado C3E’s vision for “Unleashing the Power of Women in Energy” Dawn Putney, Owner/Founder, Toolbox Creative and C3E Colorado board member

Energy Transition Grand Challenges

Significant challenges exist between technology, policy, regulations and human behavior. This symposium addresses grand challenges facing our region, country and world.

1:00-2:00 pm: Grand Challenge #1 – Decarbonizing Fossil Fuels

With the world reaching near-total consensus on the seriousness of climate change impacts, efforts have intensified many-fold to find ways of reducing carbon emissions. One of the avenues being explored is ‘decarbonization’ of fossil fuel use by either decarbonizing the fuels before they are burnt or by capturing the CO₂ they emit on combustion. In this session the various available options are reviewed in the context of their economic and environmental viability.

Moderator: Mark Northam, Founding Director, Executive Director, School of Energy Resources, University of Wyoming

Panelist #1: Jennifer Wilcox, Associate Professor, Chemical & Biological Engineering Department, Colorado School of Mines

Panelist #2: Kipp Coddington, Director, Energy Policy & Economics and Director, Carbon Management Institute, School of Energy Resources, University of Wyoming

Panelist #3: Larry Baxter, Professor of Chemical Engineering, Brigham Young University

2:10-3:10 pm: Grand Challenge #2 – Clean Energy Leadership by Cities, States, and Corporations

Given the current uncertainty regarding federal leadership on climate, response is increasingly being shouldered by cities, states, and corporations. This session explores their boots-on-the-ground initiatives aimed at local and regional clean energy strategies.

Moderator: Judy Dorsey, President, Brendle Group

Panelist #1: Mark Hartman, Chief Sustainability Officer, City of Phoenix

Panelist #2: Mark Pischea, President, Conservative Energy Network

Panelist #3: Joe Reynolds, Chairman, Nevada Public Utilities Commission

3:20-4:20 pm: Grand Challenge #3 – Effective Cyber & Energy Security

The national energy network in the United States consists of a highly interlinked set of electric lines, pipelines, roads, rail lines, generating assets, and sprawling distribution grids. Coordination of these complex assets is through computer networks that are the subject of increasing concerns about vulnerability to malicious hacking, weather events, national disasters or inadvertent system failures. This session explores the issue of vulnerability of the information networks that control our energy infrastructure.

Moderator: Alan Rudolph, Vice President of Research, Colorado State University

Panelist #1: Andy Bochman, Senior Cyber and Energy Security Strategist, Idaho National Labs

Panelist #2: Steve Brown, Vice President & Chief Security Officer, Xcel Energy

Panelist #3: Donald Paul, Executive Director, University of Southern California Energy Institute, William M. Keck Chair of Energy Resources, Research Professor of Engineering

4:30-5:00 pm: MJ Bradley -- Natural Gas Supply Collaborative Report

The Natural Gas Supply Collaborative (NGSC) is a voluntary collaborative of natural gas purchasers, including natural gas distribution companies and electric generating companies, that are interested in promoting safe and sustainable practices for the supply of natural gas. America's abundant natural gas resource offers significant economic and environmental benefits to consumers. At the same time, many stakeholders are calling on the natural gas industry to provide more information related to sustainability practices associated with natural gas production. This effort intends to encourage voluntary reporting to address how natural gas producers work to protect the environment and local communities by identifying a concise set of non-financial performance indicators that respond to stakeholder questions. The group believes reporting on these indicators serves both NGSC participants and producers. This report will be officially released to the public on October 30 at the energy transition symposium.

Moderator: Bill Ritter, Director, Center for the New Energy Economy, Colorado State University and former Colorado Governor

Panelist #1: Robert LaCount, Executive Vice President, M.J. Bradley and Associates

Panelist #2: Kate Fay, Environmental & Regulatory Policy Manager, Noble Energy

Panelist #3: Cheryl Campbell, Senior Vice President of Gas, Xcel Energy

5:00-6:00 pm: Public Reception

6:00-7:00 pm: Evening Keynote Address Disruptive Energy Futures

Keynote Speaker: Amory Lovins, Chairman Emeritus, Chief Scientist and Co-founder Rocky Mountain Institute

Moderator: Bill Ritter, Former Colorado Governor, Director, Center for the New Energy Economy, CSU

Tuesday, October 31 – 7th Annual 21st Century Energy Transition Symposium

7:00-5:00 pm: Exhibitors and Research Posters Welcome. Registration open all day.

8:00-8:15 am: Welcome

Bill Ritter, Former Colorado Governor, Director at the Center for the New Energy Economy, CSU

8:15-9:15 am: Session 1 - Setting the Stage

As societies transition to more interconnected and interdependent energy systems over the next number of decades, we will be faced with several transitional challenges in cyber and energy security, social and economic justice, the management of environmental impacts and resource conflicts, evolving policy and regulatory landscapes, and the need for new business models to drive innovation in energy production, distribution, and end-use. This session will explore these and other energy challenges that lie ahead.

Moderator: Cherry Murray, Benjamin Peirce Professor of Technology and Public Policy, John A. Paulson School of Engineering and Applied Sciences, Professor of Physics, Harvard University former Director, Office of Science, Department of Energy

Panelist #1: Jon Goldin-Dubois, President, Western Resource Advocates

Panelist #2: Austin Brown, Executive Director, UC Davis Policy Institute

Panelist #3: Jim Piro, CEO of Portland General Electric

9:20-10:20 am: Session 2 -Behavioral and Human Dimensions

Understanding human behavior and social structures are critical to achieving energy and climate goals. As we drive vehicles and use energy to service our homes and workplaces, human behavior is a central part of optimizing energy performance. For this reason, energy professionals working to promote new energy initiatives are beginning to factor behavioral dynamics into their plans. Likewise, technological advances in artificial intelligence, smart controls, and automation enable new interactions between users and energy systems. At the community and structural levels, various considerations related to energy poverty and access to affordable technologies must be centrally considered in discussions of human behavior and interactions with energy systems. This session explores the challenges and opportunities at the intersection of energy users and the energy systems around them as well as structural insights into how people consume and can access different energy sources.

Moderator: Stephanie Malin, Assistant Professor of Sociology, Colorado State University

Panelist #1: Bas van Ruijven, Project Scientist, National Center for Atmospheric Research (NCAR), Boulder

Panelist #2: Dave Ciptet, Assistant Professor of Environmental Studies, University of Colorado-Boulder

Panelist #3: Richard Caperton, Director, National Policy and Partnerships, Oracle

10:30-11:50 am: Session 3 -The Grand Challenges Facing Our Country: Solutions and Innovations

This session provides several excellent examples of how research scientists are solving the complex energy issues our world is facing today. From new methods of producing energy to mitigating environmental impacts to improving the efficiency of end-use systems, listen as researchers share information on technologies nearing commercial viability.

Moderator: Bryan Willson, Director, Energy Institute, Colorado State University

Panelist #1: CSU Technology for Optimizing Logistics in Produced Water Management– Ashwin Dhanasekar, Research Associate at CSU and Assistant Director for Center for Energy Water Sustainability

Panelist #2: Methane Emissions – Greg Rieker, Assist Professor, Mechanical Engineering, University of Colorado

Panelist #3: Carbon Fiber for Wind Technologies – Derek Berry, Senior Engineer, NREL

Panelist #4: Carbon Capture, Reuse & Sequestration – Mark Northam, Executive Director, School of Energy Resources, University of Wyoming

Panelist #5: The Future for Coal Use in the U.S.– Eric Eddings, Dept of Chemical Engineering, Univ of Utah

Panelist #6: Low-cost Technologies to Quantify Pollutants in Air and Water -- Chuck Henry, Chair of Chemistry, Colorado State University

Panelist #7: Autonomous Vehicles – Tom Bradley, Assoc Prof of Mechanical, Engineering & Systems Engineering, CSU

Panelist #8: Bioenergy from Beetle-Kill Wood: the BANR Project -- John Field, Research Scientist, Natural Resource Ecology Laboratory, Colorado State University

11:50am-12:30 pm: Lunch

12:30-1:30 pm: Session 4 – Governors’ Lunch Keynote Panel

Governors can inspire non-partisan collaborations and regional cooperation by creating mutually beneficial initiatives and outcomes in a complex world of energy transitions. This session will explore issues and opportunities facing Governors in the ever-changing landscape of energy development, technology innovation, and shifting consumer needs for energy.

Moderator: Former Colorado Governor Bill Ritter

Panelist #1: Governor John Hickenlooper (D)

Panelist #2: Wyoming Governor Matt Mead (R)

Panelist #3: Montana Governor Steve Bullock (D)

1:40-2:40 pm: Session 5 - Repowering the Western Economy

The changes underway in the electricity sector are accelerating even though the Clean Power Plan is being withdrawn by EPA. With no federal mandate, utilities and commissions must make 20-year investment decisions in the face of tremendous uncertainty. This panel will discuss the key issues facing electric utilities, state policy makers, cities, and corporations as part of the transition to a low-carbon electric grid. The panel will also examine the new opportunities for electric utilities to expand their businesses and lower emissions by electrifying the transportation sector and other energy end uses and powering those sectors with clean electricity.

Moderator: Patrick Cummins, Senior Policy Advisor, Center for the New Energy Economy

Panelist #1: Laura Nelson, Governor’s Energy Office Advisor and Executive Director, State of Utah

Panelist #2: Cathy Woollums, Senior Vice President, Environmental Services and Chief Environmental Counsel, Berkshire Hathaway Energy

Panelist #3: Jeff Ackermann, Chairman, Colorado Public Utilities Commission

2:50-3:50 pm: Session 6 - A Global Perspective: How is the World Energy Economy Transitioning?

This panel session will discuss megatrends and associated challenges relating to energy security and the impending transition to low carbon energy future on a global scale.

Moderator: Morgan DeFoort, CEO and co-founder of Factor[e] Ventures

Panelist #1: Rod Rinholm, Executive Director, Business Development & Education, Gas Technology Institute

Panelist #2: Geoff Houlton, General Manager-Marketing Strategy & Fundamentals, Anadarko Petroleum Corporation

Panelist #3: Morgan Bazilian, Fellow, Center on Global Energy Policy, Columbia University

4:00-5:00 pm: Session 7: Capstone

As the Capstone Session, the panelists will recap what has been discussed during the two day energy transition symposium. In addition, they will explore how the procurement goals of the largest energy consumers are changing the markets and creating economic drivers for renewables. Industry executives and public sector leaders will provide insights on how cities, states and large corporations are making decisions that will drive energy markets. The panelists will discuss ideas for a path forward. What will the major drivers be over the next decade and how will utilities, states, technology and research need to evolve?

Moderator: Bill Ritter, Former Colorado Governor, Director, Center for the New Energy Economy, CSU

Panelist #1: David Eves, President, Xcel Energy-Colorado

Panelist #2: Rose McKinney-James, Managing Principal, McKinney-James & Associates, former utility commissioner, State of Nevada, Board member of MGM Grand, Las Vegas

Panelist #3: Dan Arvizu, former Director of the National Renewable Energy Laboratory now Director Emeritus