RAMACO

National Researchers, Political Leaders Discuss the Role of Coal and Carbon in Energy Transition at 2023 Ramaco Research Rodeo

The semi-annual event featured remarks from U.S. Sen. John Barrasso, U.S. Sen. Joe Manchin, Department of Energy leaders, and material scientists and researchers from around the world

SHERIDAN, Wyo. - For the third year, Wyoming played host this past week to the world's leading research conference focused on carbon and coal-to-products research, the Ramaco Research Rodeo (R3). The conference was held in Sheridan, and brought together Department of Energy (DOE) researchers and leadership, leading carbon and material scientists, and more, as well as appearances by the two leading U.S. senators on the U.S. Senate Committee on Energy and Natural Resources.

R3 was hosted by Sheridan-based carbon technology and critical minerals company Ramaco Carbon, a subsidiary of Ramaco Resources, Inc (NASDAQ: METC), in partnership with the International Centre for Sustainable Carbon, a technology collaboration program organized under the auspices of the Paris-based International Energy Agency. Held at Sheridan College, the event's theme was "Coal's Role in the Future of Energy Transition" and featured keynote addresses by U.S. Sen. John Barrasso (Wyoming), U.S. Sen. Joe Manchin (West Virginia), and senior leaders from both the Department of Energy and major national laboratories.

The event was largely comprised of technical sessions by researchers from around the world on the future role of coal in the energy transition and its use in creating high-value products and materials, as well as presentations on rare earth elements (REEs) and other carbon-related research.

In his opening remarks on the event's first day, Sen. Barrasso praised the event for "bringing together innovative minds to discuss energy technology and research," and Ramaco's work in pioneering new uses for coal to develop higher-value products.

"I'm so proud of the work that the people of Wyoming are doing to develop coal-to-product technologies," said Barrasso. "We're finding ways to transform coal-derived carbon into everyday materials. These materials include asphalt, graphite, carbon fiber, and more Wyoming has the natural resources to fuel the future and (with) conferences like the Research Rodeo, Wyoming is bringing together great minds to develop innovative solutions."

Keynote speaker Grant Bromhal, acting director of the Mineral Sustainability Division of the U.S. Department of Energy's Office of Fossil Energy and Carbon Management, further underlined this initiative. He highlighted the Department of Energy's "carbon ore processing program, where we're looking at developing technologies that allow us to produce valuable products, high-value and high-volume carbon products from coal. As we do this, our primary principles are how we use the entire resource."

"This is what the Department of Energy is trying to do: to enable this and many more opportunities like this to come into play," said Bromhal. "So we're very excited about what's going on here."

Bromhal also highlighted the recent discovery of REEs at Ramaco's Brook Mine outside of Sheridan, which the Department of Energy's National Energy Technology Laboratory (NETL) has announced could be one of the largest unconventional deposits of magnetic REEs in the world, used in advanced military technology, electric vehicles, and much more.

One of the heads of this research effort, NETL geologist and geochemist Scott Montross, noted that this discovery was extremely promising for both Ramaco and Wyoming.

"This conference is a great venue to show how unique the Brook Mine coal is," said Montross. "No one can say right now if it's going to solve the problems of the world, but we've got a really good situation here."

In his opening remarks on the event's second day, Sen. Manchin said, "There is tremendous opportunity to convert coal and coal waste into valuable materials and products needed for cutting edge industries including graphite, metal composites and alloys, building materials, and other high value products used in advanced technologies, energy sectors, and industrial applications."

Some of the research being presented at the conference, Manchin said, "has already highlighted opportunities to manufacture carbon-based products from coal with lower consumer costs and lower environmental impacts, including reduced CO2 emissions, compared to other methods of production. But we need to do more to support these nascent coal-to-product industries in getting off the ground until they're in full commercial production."

Other key R3 presenters included Mark Goulthorpe from the Massachusetts Institute of Technology, Andrew Minchener from the International Centre for Sustainable Carbon, Edgar Lara-Curzio from Oak Ridge National Laboratory, Brian Davey from Australian Carbon Innovation, Holly Krutka and John Litynski of University of Wyoming, and Ramaco CEO and Chairman Randall Atkins.

The event also featured a special ceremony launching the creation of a new scholarship program at Sheridan College on behalf of the Ramaco Resources Foundation. The scholarship will support students pursuing careers in the fields of carbon ore and rare earth (CORE) elements, and will foster workforce training in these strategically vital and fast-growing fields. Initial $50,000 funding for the Ramaco CORE Scholarship will be comprised of two annual contributions of $25,000 to the college. The first contribution was awarded to Northern Wyoming Community College District president Dr. Walter Tribley during the ceremony by Randall Atkins and two of Ramaco Resources board members.

For more details surrounding R3, including a full agenda, please visit https://ramacocarbon.com/r3/. For video and imagery of the event, please contact press@ramacometc.com.

About Ramaco Resources, Inc.

Ramaco Resources, Inc. is an operator and developer of high-quality, low-cost metallurgical coal in southern West Virginia, southwestern Virginia and

southwestern Pennsylvania. Its executive offices are in Lexington, Kentucky, with operational offices in Charleston, West Virginia and Sheridan, Wyoming. Its Wyoming operations include a headquarters and a development mine near Sheridan, Wyoming. Contiguous to the Wyoming mine, the company operates a research and pilot facility called the iCAM related to the production of advanced carbon products and materials from coal. It has also been involved in the exploration of rare earth elements at its Brook Mine, and critical minerals from coal and related formations. For more information, visit our website at www.ramacoresources.com.

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