



Ramaco and U. S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) Execute Far-Reaching Strategic Agreement on Rare Earths and Critical Minerals

LEXINGTON, Ky., Oct. 30, 2025 /PRNewswire/ – Ramaco Resources, Inc. (NASDAQ: METC, METCB) ("Ramaco" or the "Company") is proud to announce the signing of an Umbrella Cooperative Research and Development Agreement (CRADA) with the U.S. Department of Energy's ("DOE") National Energy Technology Laboratory ("NETL"). This marks a significant milestone in our longstanding partnership with NETL and collaborative research on rare earth element and critical mineral ("REE") exploration, processing, ore deposit modeling, and commercialization strategies.

As one of NETL's longest-standing strategic partners in the rare earth area, Ramaco intends to continue its work not only with NETL but also with a variety of the DOE's other national laboratories to accelerate the discovery, mining, processing and creation of rare earths and critical minerals and materials at its Brook Mine in Sheridan, Wyoming. The Brook Mine has what we believe to be the largest unconventional rare earth deposit in the United States.

This multi-task and far-reaching CRADA establishes a framework for further collaborative research and development projects that include rare earth elements, critical minerals, advanced materials, carbon, carbon allotropes, coal, coal derivatives, and coal byproducts. The agreement is designed to accelerate the development and commercialization of technologies that will strengthen U.S. competitiveness, support domestic manufacturing, and drive scientific progress.

Through this initiative, Ramaco and NETL will work to integrate advanced computing, artificial intelligence, and quantum technologies to automate scientific workflows and drive rapid, data-driven discoveries in REE and critical mineral development.

The CRADA will also specifically leverage the focus on critical minerals and rare earth expertise of the DOE's recently created Minerals to Materials Supply Chain Research Facility ("METALLIC"). METALLIC unites nine national laboratories to accelerate and commercialize technologies developed by the National Labs, Ramaco and other domestic partners in the REE area.

The program is organized into four centers of expertise-Feedstock Beneficiation, Extraction and Separations, Refining, and Alloy Development and Advanced Manufacturing. Each center is equipped for technology testing and validation and supported by a cross-functional enabling activities team.

"This far-reaching new CRADA agreement will initially focus on Ramaco's rare earth and critical mineral development and reflects the strength of our longstanding partnership with NETL, and indeed through the DOE program METALLIC, the entire multi-national laboratory ecosystem," said Randall W. Atkins, CEO of Ramaco Resources. "We hope that our work through this agreement will help accelerate Ramaco's own commercial efforts at the Brook Mine as we seek to advance the nation's strategic interest in rapidly developing new critical mineral supply capability."

"The CRADA will allow us to materially build upon our prior joint research efforts. We believe it will bring to bear the full strength of the DOE national laboratory system's talent, scientific capabilities and expertise and in the field of critical minerals to help force multiply efforts to advance Ramaco's own critical mineral development. Our goal is to jointly deploy and develop innovative, commercially viable solutions that strengthen domestic rare earth supply chains and enhance national mineral security."

The CRADA will remain in effect for five years, with the option to initiate multiple collaborative projects under its umbrella.

NETL was instrumental in the original discovery of Ramaco's Brook Mine REE deposit in 2018. NETL, as well as the Oak Ridge National Laboratory, have also partnered with the Company on a variety of science and engineering discoveries in addition to the Brook Mine REE project development.

Ramaco and the national laboratories continue to work together on a variety of exciting new technologies in the use of coal as a precursor to develop high value carbon products and materials such as graphene, synthetic graphite, and carbon fibers. Ramaco holds a body of roughly 76 intellectual property patents and pending applications, exclusive licensing agreements and various trademarks in this entire area.

ABOUT RAMACO RESOURCES

Ramaco Resources, Inc. is an operator and developer of high-quality, low-cost metallurgical coal in southern West Virginia, and southwestern Virginia and a developing producer of coal, rare earth and critical minerals in Wyoming. Its executive offices are in Lexington, Kentucky, with operational offices in Charleston, West Virginia and Sheridan, Wyoming. The Company currently has four active metallurgical coal mining complexes in Central Appalachia and one development rare earth and coal mine near Sheridan, Wyoming in the initial stages of production. In 2023, the Company announced that a major deposit of primary magnetic rare earths and critical minerals was discovered at its mine near Sheridan, Wyoming. Contiguous to the Wyoming mine, the Company operates a carbon research and pilot facility related to the production of advanced carbon products and materials from coal. In connection with these activities, it holds a growing body of roughly 76 intellectual property patents, pending applications, exclusive licensing agreements and various trademarks. News and additional information about Ramaco Resources, including filings with the Securities and Exchange Commission, are available at <https://www.ramacoresources.com>. For more information, contact investor relations at (859) 244-7455.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS AND RESERVE, RESOURCE AND EXPLORATION TARGET STATEMENTS

Certain statements contained in this news release constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, but are not limited to, the expected benefits of the CRADA and our partnership with NETL, our expectations regarding our ability to develop rare earth mineral reserves and successfully develop the Brook Mine into a commercially viable producing mine. These forward-looking statements represent Ramaco Resources' expectations or beliefs concerning guidance, future events, anticipated revenue, future demand and production levels, macroeconomic trends, the development of ongoing projects, costs and expectations regarding operating results,

and it is possible that the results described in this news release will not be achieved. These forward-looking statements are subject to risks, uncertainties and other factors, many of which are outside of Ramaco Resources' control, which could cause actual results to differ materially from the results discussed in the forward-looking statements. These factors include, without limitation, unexpected delays in our current mine development activities, the ability to successfully ramp up production at our complexes in accordance with the Company's growth initiatives, failure of our sales commitment counterparties to perform, increased government regulation of coal in the United States or internationally, the impact of tariffs imposed by the United States and foreign governments, the further decline of demand for coal in export markets and underperformance of the railroads, the Company's ability to successfully develop the Brook Mine REE/CM project, including whether the Company's exploration target and estimates for such mine are realized, the timing of the initial production of rare earth concentrates, the development of a pilot and ultimately a full scale commercial processing facility. Mineral resources are not mineral reserves and do not meet the threshold for reserve modifying factors, such as estimated economic viability, that would allow for conversion to mineral reserves. There is no certainty that any part of the estimated mineral resources at Brook Mine will be converted into mineral reserves in the future. Rare earth and critical minerals is a new initiative for us and, as such, has required and will continue to require us to make significant investments to build out our rare earth capabilities. Any forward-looking statement speaks only as of the date on which it is made, and, except as required by law, Ramaco Resources does not undertake any obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise. New factors emerge from time to time, and it is not possible for Ramaco Resources to predict all such factors. When considering these forward-looking statements, you should keep in mind the risk factors and other cautionary statements found in Ramaco Resources' filings with the Securities and Exchange Commission ("SEC"), including its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q. The risk factors and other factors noted in Ramaco Resources' SEC filings could cause its actual results to differ materially from those contained in any forward-looking statement.

This news release also includes various statements about our mineral reserves and resources which are derived, for the most part, from the technical report summaries prepared in compliance with the Item 601(b)(96) and subpart 1300 of Regulation S-K. The terms "mineral resource" and "mineral reserve" are defined and used in accordance with subpart 1300 of Regulation S-K. Under subpart 1300 of Regulation S-K, mineral resources may not be classified as "mineral reserves" unless the determination has been made by a qualified person that the indicated and measured mineral resources can be the basis of an economically viable project. You are specifically cautioned not to assume that any part or all of the mineral resources will ever be converted into mineral reserves, as defined by the SEC. You are cautioned that, except for that portion of mineral resources classified as mineral reserves, mineral resources do not have demonstrated economic value. Inferred mineral resources are estimates based on limited geological evidence and sampling and have a too high of a degree of uncertainty as to their existence to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Estimates of inferred mineral resources may not be converted to a mineral reserve. In particular, our estimates of rare earth and critical minerals at the Brook Mine are reported as in-place inferred resources. Rare earth and critical minerals is a new initiative for us and, as such, has required and will continue to require us to make significant investments to build out our rare earth capabilities. As a new facet of our business, there are heightened risks and uncertainties, and there is no assurance that we will be able to successfully develop the Brook Mine into a commercial scale mine. We have little to no demonstrated track record of commercial, operational or financial success outside of our core business, and given the uncertainties associated with rare earth and critical minerals and the mining thereof, we cannot assure you that this initiative will be successful. Therefore, you are cautioned not to assume that all or any part of an inferred mineral resource exists, that it can be the basis of an economically viable project, or that it will ever be upgraded to a higher category. Likewise, you are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be converted to mineral reserves. This news release also includes various statements regarding our exploration targets at the Brook Mine Property, which are derived, for the most part, from the exploration report technical report summary prepared in compliance with the Item 601(b)(96) and subpart 1300 of Regulation S-K as well as a preliminary economic analysis completed by Fluor. The estimates derived from the technical report summary are, in part, a function of the quality and quantity of available data at the time such report was prepared and are considered reasonable; however, the estimates should be accepted with the understanding that with additional data and analysis subsequent to the date of the report, the estimates may necessitate revision, which may be material. Similarly, Fluor's preliminary economic analysis is based in part on information not within the control of Ramaco and entirely on information not within the control of Fluor. While it is believed that the information contained therein will be reliable under the conditions and subject to the limitations set forth therein, neither Ramaco nor Fluor guarantees the accuracy or completeness thereof.

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