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ECED Applies for \$500,000 Coal-to-Products Technical Assistance Grant from EDA

Energy Capital Economic Development (ECED) has submitted a concept proposal to the U.S. Department of Commerce - Economic Development Administration (EDA) for \$500,000 in technical assistance funding toward a full application to the Build Back Better Regional Challenge. The proposal "Moving Wyoming Forward: Economic Diversification, Manufacturing, and Decarbonization in America's Energy Capital" envisions a regional innovation cluster to develop and commercialize industries focused on producing high-value engineered products from coal. A key component of the proposal is the "value over volume" proposition where coal-to-products manufacturing adds value to Wyoming coal revenues without increasing the volume of coal sold.

"For more than 40 years, coal from Campbell County has fueled the production of electricity to serve people across the country. In an effort to support our coal industry, we are pursuing a strategy to diversify their customer base while also developing new industries to produce high-value products from Powder River Basin coal," said ECED CEO Phil Christopherson. "We have a unique opportunity with this BBB Regional Challenge to support private sector businesses by helping reduce some of the risk involved in scaling up coal-to-products manufacturing technologies."

A coalition of partners from government, education, and the private sector will collaborate with ECED to conduct research, development, and demonstration in the Gillette area to increase the value of Powder River Basin coal through fractionation and refining while also striving to reduce the carbon intensity of its continued use. Local government and education partners include Campbell County, City of Gillette, and Gillette Community College District.

"We've known for a long time that private industry wants to use Powder River Basin coal to make high-value products. This proposal highlights many concepts of Campbell County as 'Carbon Valley' where we can attract manufacturers wanting to use our coal to make products more efficiently and cost effectively than they can with crude oil or other feedstocks," said Campbell County Commissioner Rusty Bell.

Gillette Community College District committed as a coalition partner to focus on the workforce development and professional training required to support advanced coal-to products manufacturing. Specifically, the District would be contracted to develop workforce elements of the coal-to-products strategic plan should ECED receive Phase 1 funding.

"Gillette College has always been here to serve the needs of industry from our MSHA training and virtual simulators to the higher educational demands of the employers in our community," said Gillette Community College District Interim President Janell Oberlander. "Our role as a partner in the 'Moving Wyoming Forward' application demonstrates our continued efforts to be at the forefront of helping individuals in our workforce develop the skills required for the cutting-edge technologies we're seeing in advanced manufacturing."

With more than 25 billion tons of recoverable reserves in the Powder River Basin, coal remains a key natural resource for our mining and energy partners. Coal-based products are increasingly gaining attention in the areas of research and development as well as funding at the U.S. Department of Energy and universities across the country. Developing capacity to produce engineered products from coal in

the Powder River Basin will be the logical follow-on to the significant investments made by the Wyoming Legislature into carbon engineering at the University of Wyoming.

The “Moving Wyoming Forward” proposal outlines a plan for collaboration with the University of Wyoming School of Energy Resources and Wyoming Energy Authority to support new industries producing engineered products from coal. Just as petroleum refineries use heat and chemical processes to separate gasoline, diesel, and other petroleum products from crude oil, coal-to-products processes are based on similar methods of fractionation and refining. A recent report from the National Coal Council has identified many products that can be produced from coal, including carbon fiber, graphite, graphene, and hydrogen.

“UW-SER has many projects focused on developing new products from Powder River Basin coal as well as plans to develop carbon capture as a service through projects like CarbonSAFE and continued research to utilize hydrogen as a fuel,” said UW-SER Executive Director Dr. Holly Krutka. “We look forward to continuing to partner with private industry as well as ECED and Campbell County.”

The EDA Build Back Better Regional Challenge is open to communities across United States and its territories and attracted 529 concept proposals during Phase 1. EDA expects to award only 50 to 60 of those applicants with amounts up to \$500,000 in technical assistance. Those selected for Phase 1 awards will have an opportunity to submit a full application and compete for 25 to 30 Phase 2 awards of \$25-\$75 million. A minimum of \$100 million of the program has been set aside specifically for assistance to coal-impacted communities. Eastern Wyoming including Gillette and Campbell County were identified near the top of communities targeted for priority spending in an April 2021 report to President Biden produced by the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization.

According to the National Coal Council “Coal in a New Carbon Age” report issued in May 2019, “The United States is embarking on a ‘New Age of Carbon’ which will usher in significant opportunities for coal beyond conventional markets for power generation and steelmaking. Coal, and the carbon it contains, is on the crest of powering a wave of innovation in advanced products and manufacturing.”

The report identifies many high-value uses of coal including fuels and chemicals, carbon fiber, activated carbon, graphite, electrodes, graphene, building and construction products, carbon foam and carbon black. Additionally, the report highlighted the national security need of component minerals for health care, military, transportation, power generation, petroleum refining, and electronics applications as well as quality enhancements to coal for specialty product applications, prosthetics, and biosensors.

“This is not a new concept,” said Krutka who contributed to the National Coal Council report in her role as Chair of their Coal Policy Committee 2019. “Some of these uses of coal exist in areas of the U.S., this ‘Moving Wyoming Forward’ proposal and the fractionation of Powder River Basin coal at the source could help ensure that every molecule of coal is used, and rare earth elements could be extracted.”

“In many advanced market applications, coal is less expensive (\$12-\$50/ton) than traditional feedstocks such as petroleum (\$400-\$500/ton), offering opportunities for both reducing the cost of manufacturing carbon products as well as, in many cases, providing a superior quality carbon feedstock,” according to the National Coal Council report.

The “Moving Wyoming Forward” proposal highlights how transitioning coal towards carbon materials is a source for higher value advanced manufacturing and jobs in coal-impacted communities like Gillette. This value over volume research and development explores how to develop high-value products for consumers and industry using coal as a more sustainable resource.

“The Gillette area is already home to Wyoming Innovation Center, Integrated Test Center, CarbonSAFE, and other private and public projects focused on coal-to-products and carbon capture, utilization, and sequestration. Our reputation as ‘Carbon Valley’ is growing,” said Christopherson. “This proposal has the potential to rapidly accelerate private investment in carbon-based technologies in northeast Wyoming.”

To learn more about Energy Capital Economic Development or the “Moving Wyoming Forward” proposal contact ECED CEO Phil Christopherson at 307-686-2603 or Phil@EnergyCapitalED.com.

About ECED

Energy Capital Economic Development Corporation (ECED) is a non-profit organization led by a Board of Directors of business executives and community leaders to grow the County’s economy through attracting, retaining, and expanding businesses in the Gillette area. Created in 1984, the ECED helps businesses start, grow, and relocate in Campbell County by providing access to top talent, business and market intelligence, and prime locations. The mission of Energy Capital Economic Development is to facilitate and stimulate a diverse economy through business retention, expansion, and recruitment.