Coal is a domestic resource that has contributed to U.S. economic growth for over a century. However, in a shifting energy generation paradigm, innovation is needed to extract the full economic value from coal and coal-wastes. The Carbon Ore Processing Program delivers solutions to this challenge with novel technologies for producing valuable products from coal-derived sources for applications outside of traditional thermal and metallurgical markets.
CARBON ORE PROCESSING

The program goal is to develop technologies for the production of value-added carbon products derived from coal or coal-wastes, with a focus on markets that are outside of traditional thermal and metallurgical sectors. This goal is supported through efforts in three key areas:

- Coal-Derived Carbon Products
- Feedstock Upgrading
- Coal Properties Database

CARBON ORE PROCESSING TECHNOLOGIES

- Supporting R&D of coal and coal-waste derived products in market segments with high compound annual growth rates.
- Developing feedstock upgrading technologies that can simultaneously allow for the remediation of legacy coal-cleaning wastes and the production of high-purity carbon in the absence of new resource extraction.
- Creating and maintaining a coal properties database that allows producers and consumers of coal and coal-wastes to understand the availability and movement of these resources.

GOALS AND MILESTONES —

- Initiate testing of laboratory- and pilot-scale technologies that use coal and coal-waste to produce value added carbon products to determine: (1) how the technologies can improve the value chain for carbon products in the United States, (2) the technology gaps that must be overcome, and (3) the major products that could be produced from the technologies with an estimate of the technical and economic performance targets required for commercialization of the technology.
- Complete market studies for upgraded coal and coal-waste derived products to determine how these resources can add value to sectors of the economy with high compound annual growth rates.
- Develop a readily accessible, machine-readable, and easy to use database of U.S. coal information so that coal and coal-waste producers and consumers can estimate the impact of resource availability. This will satisfy the data needs of researchers, producers, and consumers of coal and coal-waste derived carbon products.

FEEDSTOCK UPGRADING — The Carbon Ore Processing Program includes support of R&D for coal/coal-waste feedstock upgrading technologies. There are hundreds of millions of tons of coal-cleaning wastes that were processed with pre-1970’s technology, and these wastes can contain up to 50% carbon. Developing deep cleaning technologies could allow for legacy waste pile remediation while simultaneously producing a high-purity source of carbon without new resource extraction.

COAL PROPERTIES DATABASE — The coal properties database is being expanded to enable coal and coal-waste producers and consumers to understand the distribution and movement of resources within the United States. This allows producers and consumers to estimate the economic impact of geography with respect to the material flows (and availability) of the resource. The expanded database of U.S. coals will also satisfy data needs of current coal and coal-waste producers and consumers as well as researchers of high-value products that can be made from coal.