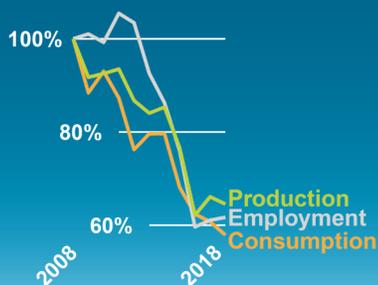


US coal industry relative to 2008



Source: EIA

Despite market challenges, coal is an abundant domestic resource, and remains economically important to regions throughout the U.S.

Proven coal reserves (Gt in 2018)



Source: BP Statistical Review of World Energy (2019)



Coal for Power  
\$30.2B in 2018

Using existing infrastructure and a mature supply chain, these critical feedstocks produced from coal take shape in high value, high growth products



**Pitch:** A carbonaceous feedstock that can be derived from coal



**Graphite:** Layered sheets of carbon with high thermal and electrical conductivity



**Graphene and quantum dots:** Nanomaterials with specialized physiochemical properties

## High Value, High Growth Products

\$96.3B Globally by 2023  
Compound average growth rate (CAGR) 9.2%

### Construction Materials

Composites, building materials, roofing tiles  
\$49.4B; CAGR 6.7%



### Conductive Inks

Electronics, touch screens, 3D printing, RFID tagging  
\$4.6B; CAGR 4.5%



### Carbon Foam

Steel production, aerospace tooling  
\$0.11B; CAGR 14%



### Carbon Fiber

Aerospace, composites, automotive  
\$4.3B; CAGR 11.2%



### Energy Storage

Lithium-ion batteries, supercapacitors  
\$37.9B; CAGR 14.4%



Market data and projections from third-party reports