



TAGGART

World Leader in Material Handling and Coal Preparation

**Presentation
to
United States Energy
Association**

**TAGGART GLOBAL, LLC
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World Leader in Material Handling and Coal Preparation

Taggart Global Overview

- Largest international designer/builder of coal processing plants
 - Based in Pittsburgh with other offices in China, Australia and South Africa
 - Successfully completed more than 200 major projects on five continents in past 10 years
 - Clients include:
 - Anglo Coal
 - American Electric Power
 - Arch Coal, Inc.
 - BHP Billiton
 - Consolidation Energy
 - Peabody Energy
 - Shenhua (China)
 - SUEK (Russia)
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Coal Upgrading Technologies

- Pre-Combustion (Taggart)
- Post-Combustion
 - FGD Technologies
 - Selective catalytic reduction
 - CCS





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Pre-Combustion Technologies for Upgrading Coal

- Coal preparation to remove ash, sulfur and other impurities
- Coal upgrading by removal of moisture
- Utilization of chemical additives to alter combustion characteristics





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Coal Preparation Technologies

- Based on difference in specific gravity of coal (1.4 SG) and associated impurities (2.2 SG)
- Processes include both wet and dry separations
- Technologies widely utilized for upgrading high rank coals (bituminous and anthracite)





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Wet Coal Preparation Technologies

Dense Media Based Processes (Higher Efficiency)

- Dense Media Cyclones
- Dense Media Vessels

Water Based Processes (Lower Efficiency)

- Water-Only Cyclones
- Spirals
- Teeter Bed Separators



Flotation (chemical process for very fine coal particles)



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Dry Coal Preparation Technologies

- Rotary Breakers (Hardness)
- Accelerators
- Pneumatic Separators

Less efficient than dense media/water-based technologies and used where water is not available and/or as pre-cleaning prior to final upgrading by wet processing.





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Benefits of Pre-Combustion Upgrading

- Much less expensive than post-combustion technologies
 - Reduced transportation (truck, barge, rail) cost required to bring clean coal to end user
 - Improvements in power plant boiler efficiency
 - Reduced quantity of coal combustion by-products including bottom ash and fly ash
 - Reduced requirement for post-combustion technologies such as FGD
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CLIENT: WESTERN CANADIAN COAL
PROJECT: WOLVERINE COAL PLANT
LOCATION: BRITISH COLUMBIA, CANADA



Turnkey design, construction, and commissioning of a 770 TPH greenfield coal preparation plant for metallurgical coals. Project completed in 2007.



CLIENT: SIBERIAN COAL & ENERGY COMPANY
PROJECT: TUGNUI COAL PREPARATION PLANT
LOCATION: BURYATIA, RUSSIA

Turnkey engineering, design and construction of a 750 TPH preparation plant and material handling facility. Project was completed in 2008.





CLIENT: DATONG COAL MINING GROUP

PROJECT: TONGXIN COAL PLANT

LOCATION: DATONG, SHAN XI, CHINA

Design and construction of 1900 TPH coal preparation plant and material handling system. Plant commissioned in 2009.





CLIENT: SIGNAL PEAK ENERGY, LLC
PROJECT: BLACK OTTER COAL PREPRATION PLANT
LOCATION: ROUNDUP, MT, USA



Turnkey engineering, design and construction of a 2,000 tph coal preparation plant and material handling system. Year completion – 2009.



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