Delivering Energy to America
EVERY MAN, WOMAN AND CHILD IN AMERICA USES ROUGHLY 7,500 lbs. OF COAL PER YEAR.

U.S. COAL DEPOSITS CONTAIN MORE ENERGY THAN ALL THE WORLD’S OIL RESERVES.

Delivering energy to America

When the first homesteaders of this land settled, it took grit, innovation and resourcefulness to succeed.

Today, the employees at Black Thunder share those same qualities, in addition to very specialized skills for operating state-of-the-art equipment and computer systems.

That’s what it takes to supply America’s growing demand for electricity. Today, nearly half of America’s electricity comes from coal. Coal powers our electronic devices, heats and cools our homes, and supplies the energy to run much of the nation’s manufacturing machinery.

Arch Coal’s Thunder Basin Coal Company operates Black Thunder Mine, the world’s largest single coal-mining complex, and produces more than 10 percent of the U.S. coal supply each year. Since opening in 1977, nearly 2.2 billion tons of coal have been mined and delivered to America’s electric generation plants.

Success at Black Thunder Mine is measured by our ability to meet our nation’s energy needs in a safe and environmentally responsible manner.

How coal was formed at Black Thunder

It is difficult today to believe that literally thousands of square miles of Wyoming’s Powder River Basin were once lush, swampy forests. But, the proof lies in the incredibly thick deposits of coal, oftentimes found in seams more than 100-feet thick.

More than 65 million years ago, when dinosaurs roamed, thousands of feet of rock were eroding from the mountains and filling valleys of northeast Wyoming. The valleys were full of dense forests and water. The sequence was to be replayed time and time again, as grass and forests were covered by deposits of rock and ash.

Extreme pressure and heat transformed the remains of the plants into coal. Because the water that once covered Wyoming was fresh, there was little sulfur present. The result is that the coal found in Wyoming has a low sulfur content, making it more environmentally desirable as a fuel.

Advanced equipment and technologies

The scale of coal mining operations at Black Thunder is staggering. Machinery dwarfs everyday dimensions.

Draglines, the largest machines operating at the mine, remove much of the rock and clay that lies above the coal seam. Of the six draglines located at the mine, two are among the largest in the world. One of these weighs 14.7 million pounds, is 238 feet tall, and has a bucket that can carry up to 164 cubic yards of material. It can dig an Olympic-sized swimming pool in just 25 minutes.

Twenty-two massive shovels, which can dig up to 120 tons in a single bucket, load the material into the haul trucks.

Imagine driving a haul truck that weighs 250 tons empty and can carry more than 300 tons of coal, enough to fill about three train cars. Nearly 150 haul trucks operate continuously at the mine, each measuring roughly 48 feet long, with a diesel engine generating up to 3,000 horsepower and 10-foot tall tires. A single load can provide the energy to heat an average home for more than 40 years.

How coal is mined

The first step in the mining process is to remove the topsoil, either by placing it in segregated piles where it can be stored for use later during the reclamation process, or directly on previously mined areas.

Then the mine’s larger scale equipment is employed to remove the remaining dirt, rock and clay, or overburden, thus exposing the coal seam beneath.

Next the coal is scooped up by the huge shovels and placed into the haul trucks for movement to crushers. The crushers at Black Thunder can take lumps of coal up to 5 feet thick and turn them into two-inch pieces, processing a 320-ton haul truckload in about three minutes.

From the crushers, the coal is moved on conveyor belts until it is

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BLACK THUNDER MINE PRODUCES THE ENERGY EQUIVALENT OF 1 MILLION BARRELS OF CRUDE OIL EVERY DAY.
Black Thunder produces nearly 4 tons of coal per second – 24 hours a day, 365 days a year.

The active operation supplies over 10% of America’s coal and comprises only 1/4,000th of Wyoming’s land area.

Loaded onto trains. These “unit” trains carry only one cargo – coal – and deliver Wyoming coal to electric-generating plants throughout the country and even to ports for use overseas.

Moving coal to our customers
Every day, more than 20 trains are filled at Black Thunder. Thanks to well-trained operators and a sophisticated computer system at each of the mine’s three loadouts, an entire train can be loaded as quickly as 1 hour and 15 minutes.

On average, each 120- to 150-car train carries more than 14,000 tons of coal. On an average day, Black Thunder loads more than 25 miles of rail cars.

Black Thunder’s low-sulfur coal is shipped to 25 states. Nearly all of Black Thunder’s customers, including more than 115 U.S. coal-fueled power plants, use the coal to generate electricity. In fact, coal from Black Thunder fuels 6% of the electricity generated in the United States each year.

Responsible stewards
Black Thunder Mine is a model of safety and environmental responsibility for its industry. Black Thunder’s proven safety philosophy empowers every employee to identify and minimize barriers to safe work performance.

We fully integrate land reclamation into the mining process. In just a few growing seasons, mined lands in Wyoming become virtually indistinguishable from the surrounding terrain. Today, former mine lands are home to a wide range of animal species that thrive on the ground and in the sky. More than 20 species of native plants cover the reclaimed landscape. Cattle and wildlife graze on the land, proof of successful reclamation.

Black Thunder’s commitment is reflected in its many awards for excellence. The mine stands not only as an outstanding example of efficient mining practices, but also as a safe employer, an environmental leader in reclamation and a good neighbor.

Black Thunder people
With a tradition of giving, Black Thunder and its employees reach out to neighbors through special programs and by devoting time to nonprofit and civic organizations. Black Thunder is a leading supporter of education. The mine established an innovative, statewide, K-12 classroom teacher recognition program, the Arch Coal Teacher Achievement Awards, and provides financial support to the University of Wyoming and the Gillette campus of the Sheridan Community College.

Another critical element of good corporate citizenship is a thriving, diverse workforce. Black Thunder employs more than 1,600 hardworking individuals in a variety of challenging fields and positions, including engineers, machine operators, safety professionals and electricians.

Because of growing sophistication of the mining process, employees at Black Thunder have strong educational backgrounds, including college or specialized trade degrees and certificates.