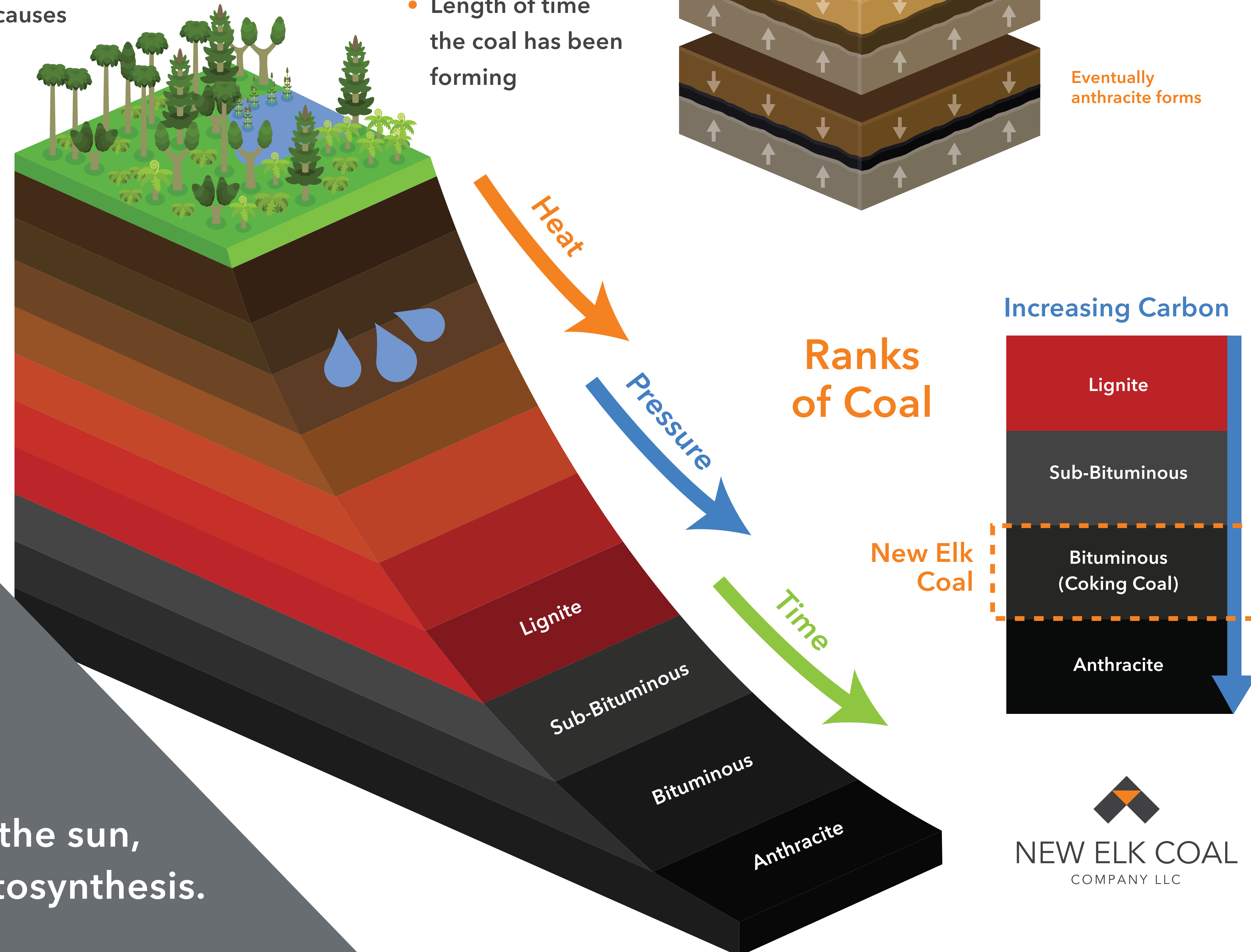
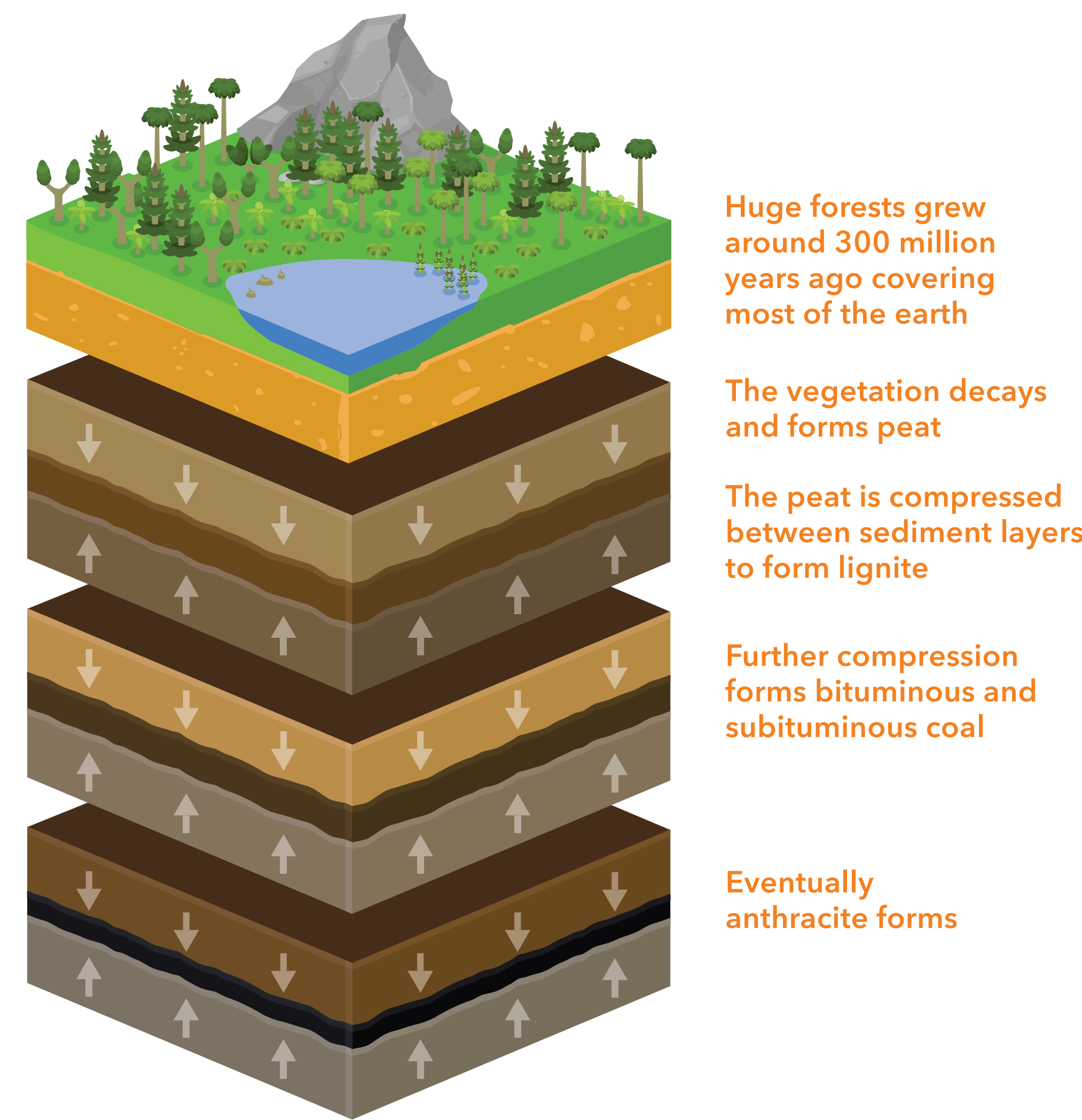


Coal Formation

- Coal formation starts when plants store energy from the sun, through photosynthesis.
- Build-up of silt and sediments, along with movements of the earth's crust (tectonic movements) buries plants in swamps and peat bogs.
- Buried swamps and peat bogs subjected to high temperature and pressure conditions and a lack of oxygen which stops the decay process and causes plant material to be transformed into peat and then coal where energy is locked in.

Coal quality is determined by a variety of factors:

- Type of vegetation
- Depth of burial
- Temperature
- Pressure
- Length of time the coal has been forming



Coal formation begins when plants store energy from the sun, through photosynthesis.

Coal Mining

- Coal is mined from seams using two methods.
 1. Surface or "open pit" mining
 2. Underground mining
- Excavated coal is separated (processed) from rock material to prepare it for commercial use.
- The harder the coal is, the higher its energy value and rank.
- Harder, blacker coal contains more carbon and less moisture and ash than lower grade coal.
- The grade of coal and its caking ability (coal's ability to be converted into coke which is a pure form of carbon that can be used in basic oxygen furnaces in steel mills) is determined by the coal's rank.
 - Rank - measure of the amount of volatile matter, degree of metamorphism, mineral impurities and the coal's ability to melt, swell and solidify when heated.

Metallurgical Coal

- Differs from thermal coal due to its carbon content, ability to swell, and caking ability.
- Fed into ovens and subjected to high temperature conditions without oxygen to prevent combustion.
- Heated to approximately 1,100 degrees Celsius.
- Removes volatile compounds and impurities to leave pure carbon (coke).
- Coke is then fed into a blast furnace with iron ore and limestone to separate the iron from its ore to create Pig Iron.
 - Pig Iron is further refined to make steel.

New Elk Coal

The New Elk Mine is located in the Raton Basin, which is approximately 80 miles in length and 50 miles wide, encompassing approximately 4,000 square miles. The Raton Basin contains a large coal resource contained in Late Cretaceous and Paleocene (Raton) formations. The coal in the Raton Basin is well known for its high-quality coking characteristics.

New Elk steelmaking coal will be sold as both a stand-alone product and blended with Alabama coals, based on market demand. The coal will primarily be sold to steel mills on the global seaborne market exported from either the Gulf of Mexico to the European steel market, or from the northwest coast of Mexico to the Asian steel market.



Metallurgical coal is a higher-grade type of coal required for the production of steel.

