

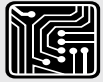
# Exciting Electricity Fact Sheet



**ELECTRICITY** is sent underground using huge thick cables - as thick as a man's wrist!



The **CABLES** are very well insulated (this means protected). This is so that if they were to get damaged there is less risk of a spark, which could cause an explosion.



**GATE END BOXES** are used underground as the plugs for heavy machinery.



## Cap lamp and battery

A cap lamp is the light worn on a miner's helmet to help him see underground. It is powered by a battery worn around his waist. Everybody who goes underground at the National Coal Mining Museum for England must wear one – including visitors!



## Underground conveyor belt

Underground conveyor belts were used to carry the mined coal and sometimes men to the shaft bottom or to the surface in drift mines. They are powered by electricity, and plugged in underground to a gate end box.



## Electric locomotive

These are the small trains that would have been used to transport the workers, materials and coal underground. They are battery powered and last 8 hours! Mines usually had 2 or more of these trains, so one could be charging up while the other was in use.

## Coal Cutting machines underground

These are big machines which cut the coal. One kind, called a trepanner acts like a giant apple corer, skewering into the coal to remove the core!



## Coal shearer such as a Joy double ended shearer

The drum of a coal shearer cuts the coal into small pieces. They are electrically powered and plugged in underground to a gate end box.



## Dosco road header

This machine makes roadways underground. It works like a big corkscrew, drilling through the coal. It is electrically powered and plugged into a gate end box.

## Electric winder

Electricity powers the winding engine, which lifts miners and coal in and out of the coal mine. An emergency winder is available if it breaks down. It is operated on the surface by mains electricity.



## Fan

The fan ventilates the mine so that miners can breathe. It is powered by electricity, and plugged in underground to a gate end box.