

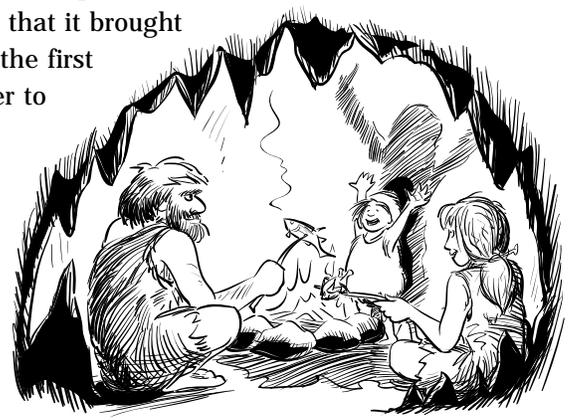
A BRIEF HISTORY OF ENERGY

How our use of energy has changed over time

TERMS IN GLOSSARY

- A.D.
- alloy
- alternator
- B.C.
- blast furnace
- charcoal
- coke
- combustion
- dynamo
- electromagnetism
- energy conservation
- fossil fuel
- generator
- geothermal
- heat engine
- hydropower
- industrial
- Industrial Revolution
- internal combustion engine
- manufacture
- mass
- mass produced
- medieval
- organic
- passive solar
- smelt
- static electricity
- Stirling engine
- telegraph
- textile
- town gas
- transmit
- voltage
- wet-cell battery

ANYONE WHO'S EVER LIT A CANDLE knows that making fire is as easy as striking a match. But for our earliest ancestors, the ability to create a spark and build a fire must have been astonishing. The energy that it brought changed their lives. For the first time, they had the power to produce heat and light whenever and wherever needed. Creating fire was just the beginning of our ongoing quest to use Earth's energy resources to make our lives better.

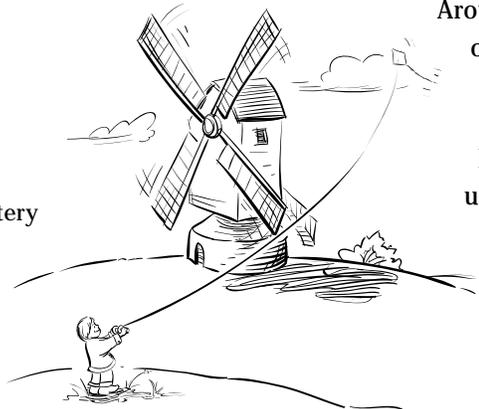


OUR FIRST ENERGY SOURCES

For most of the history of humankind wood was the mainstay of life — for shelter, for transportation on land and on water, and as a source of energy to burn for heat and light. Besides using wood and their own muscles, people took advantage of the energy that the sun, wind, running water, hot springs and even animals could provide — to do work, to travel, and for recreation.

Ancient civilizations advanced the use of energy resources. Around 3,500 B.C. (about 5,500 years ago) Egyptians made the earliest known sailboats, harnessing the power of the wind to travel faster and further, while increasing trade with neighboring lands. By 500 B.C. Greeks were building what we now call “passive solar” homes to take better advantage of the sun's light and warmth. And by 85 B.C. Romans were enjoying baths heated with water from geothermal hot springs.

Around the same time, the Greeks made advances in use of running water. They developed waterwheels to grind grain, a task previously done by hand or with animal power. And by 640 A.D., in what is now Iran, the Persians had also found a new way to grind grain, using mills with large wooden blades to capture wind power. Europeans adopted the idea and used modified versions of these windmills throughout medieval times.

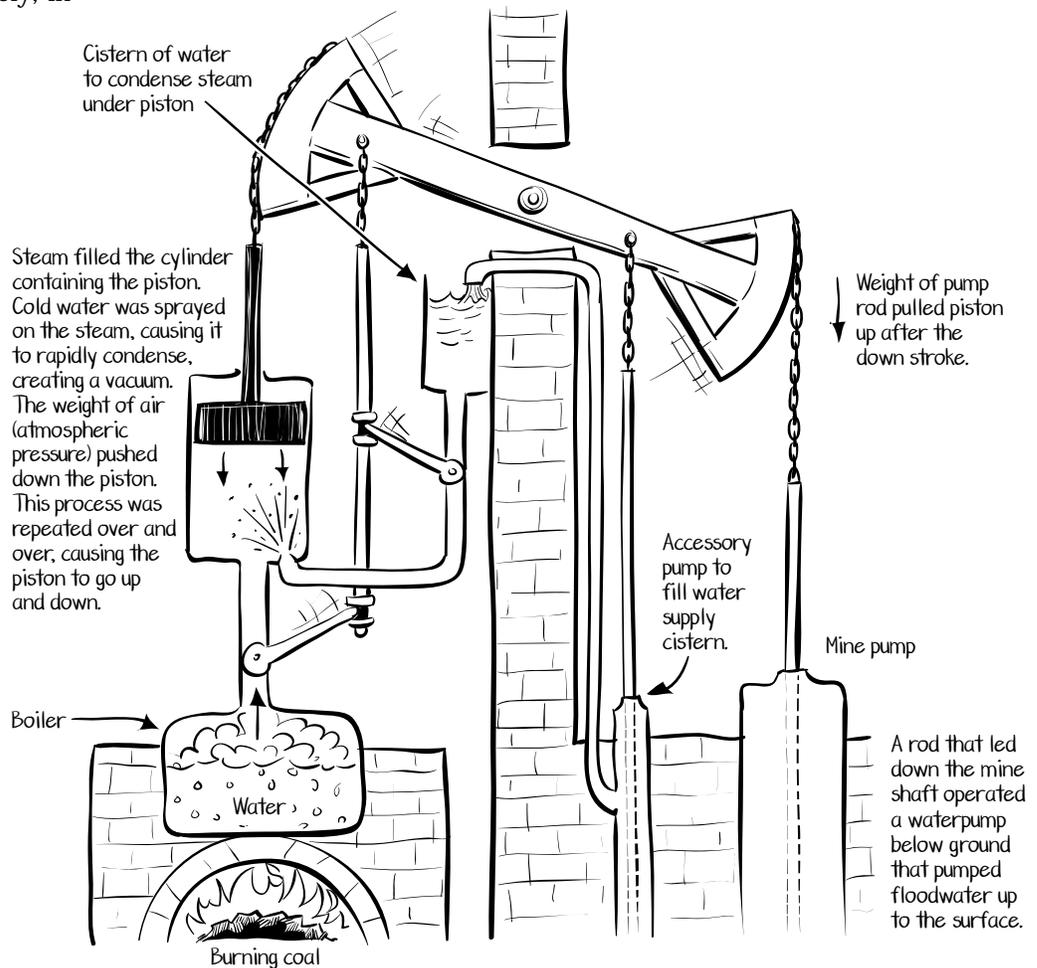


But wood remained the most-used energy resource. In the 1300s Germans built the first blast furnaces to burn wood at extremely high temperatures, allowing them to produce large quantities of iron. During the next few centuries much of Europe’s forested area was logged for the production of iron and the building of ships.

COAL POWERS INDUSTRY

Although people burned coal for heat at least as early as the first century A.D., it took more than a thousand years for coal to become a dominant source of energy. By the late 1600s coal had become more popular than wood in England. In fact, the British had lots of coal. But they had flooding problems deep in the coal mines due to groundwater flowing from the rock. They needed a way to pump out the water. Fortunately, in

1698, Thomas Savery invented one of the earliest workable steam engines. When attached to a water pump, this engine largely solved the flooding problem. Blasts of steam from water boiled by burning coal kept the engine working whenever the pump was needed.



An early steam engine pumps water from a coal mine.