

World History Review for AP Human Geography



Age of European Discovery, Exploration, and Colonization

The geographical knowledge acquired was crucial to the expansion of European political and economic power in the 16th Century.

1492 - 1771:

- Bartholomew Dias (Portugal), 1488 - rounds Cape of Good Hope
- Columbus, 1492 (Spanish/Italian) - first of four voyages to “New World”
- Vasco De Gama (Portugal), 1498 - reaches India
- Magellan (Portugal), 1519 - First Circumnavigation
- James Cook (England), 1768-1771 - voyages in Pacific / Polynesia; end of era of Discovery



The Industrial Revolution

The Industrial Revolution was a fundamental change in the way goods were produced, triggering far-reaching changes to industrialized societies



- Increased use of metals and minerals (Coal, iron which is used to make steel, aluminum, copper, etc.)



Industrial Revolution

1733, First Cotton Mill opens in England

1793, Eli Whitney invents cotton 'gin

1800, steam engines become common (steamboats, locomotives)

1837, Morse and two Brits, independent of Morse)
invent telegraph

1877, Bell invents telephone

1878, Thomas Edison patents incandescent light bulb

1908, Henry Ford delivers first Model T

1913, Wright Brothers first flight



Steel and the Bessemer Process

- To make steel iron ore is needed

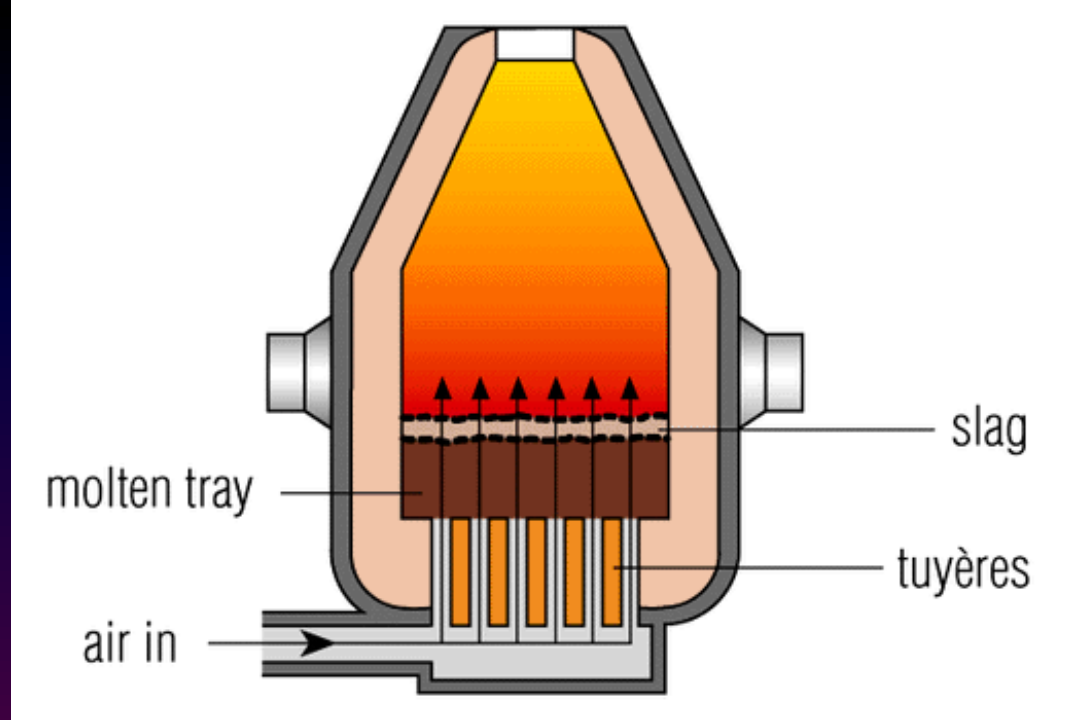




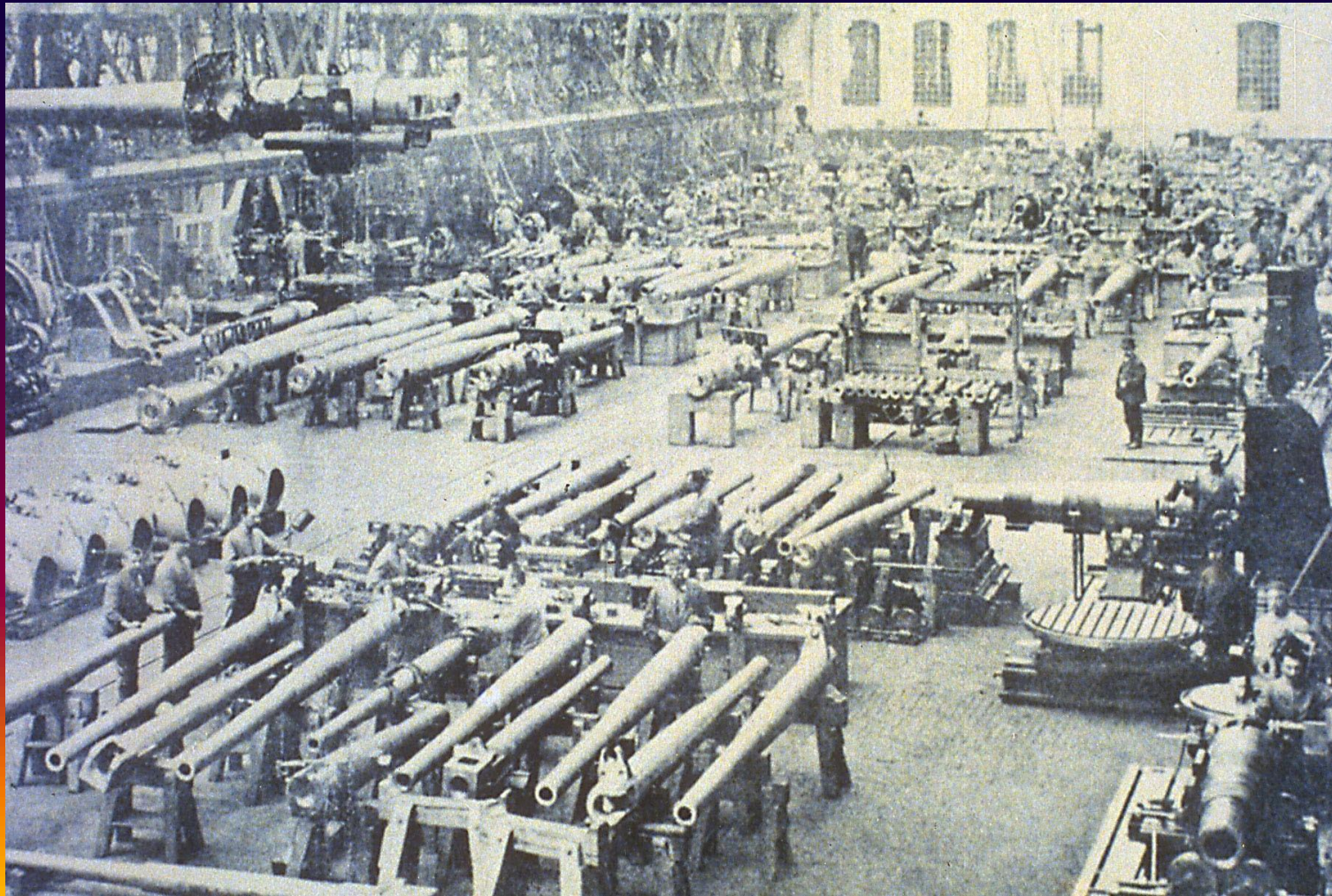
Prior to the Industrial Revolution, steel was difficult to produce and expensive

Henry Bessemer, 1856

- Developed the Bessemer Process - sped up the process of making steel (from 7 days to 30 minutes)
- Brought on the “Age of Steel”
- Steel is the most important metal used over the past 150+ years



This made making steel faster and cheaper
improving other industries





The bridge at Ironbridge, Shropshire, was erected in 1779. The first cast-iron bridge, it served as an advertisement for Abraham Darby's Coalbrookdale ironworks, and as an inspiration for the first wave of industrialization in Britain.



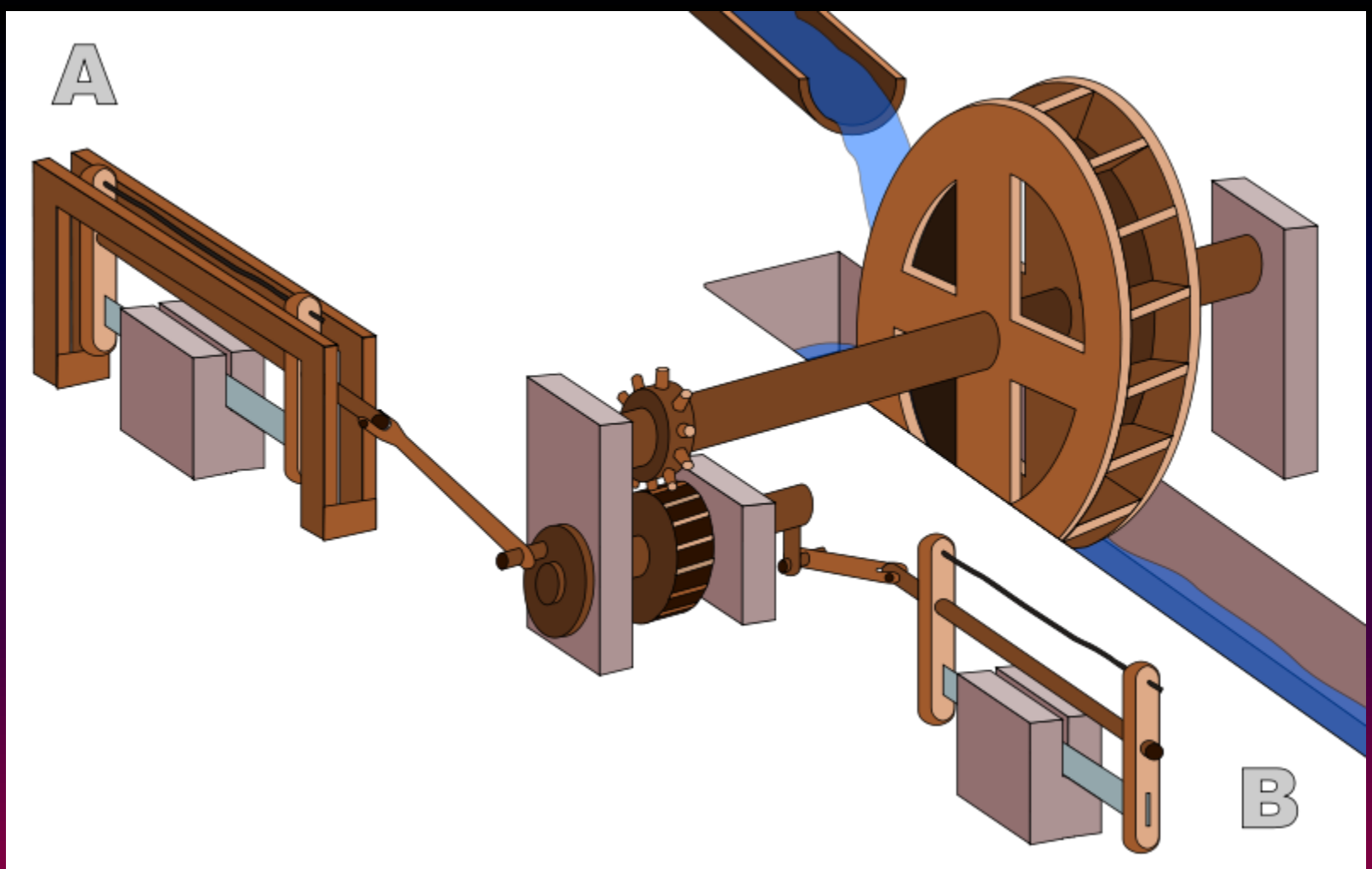
- New energy sources were developed to power the new machinery: steam, electricity, oil (gas, kerosene)

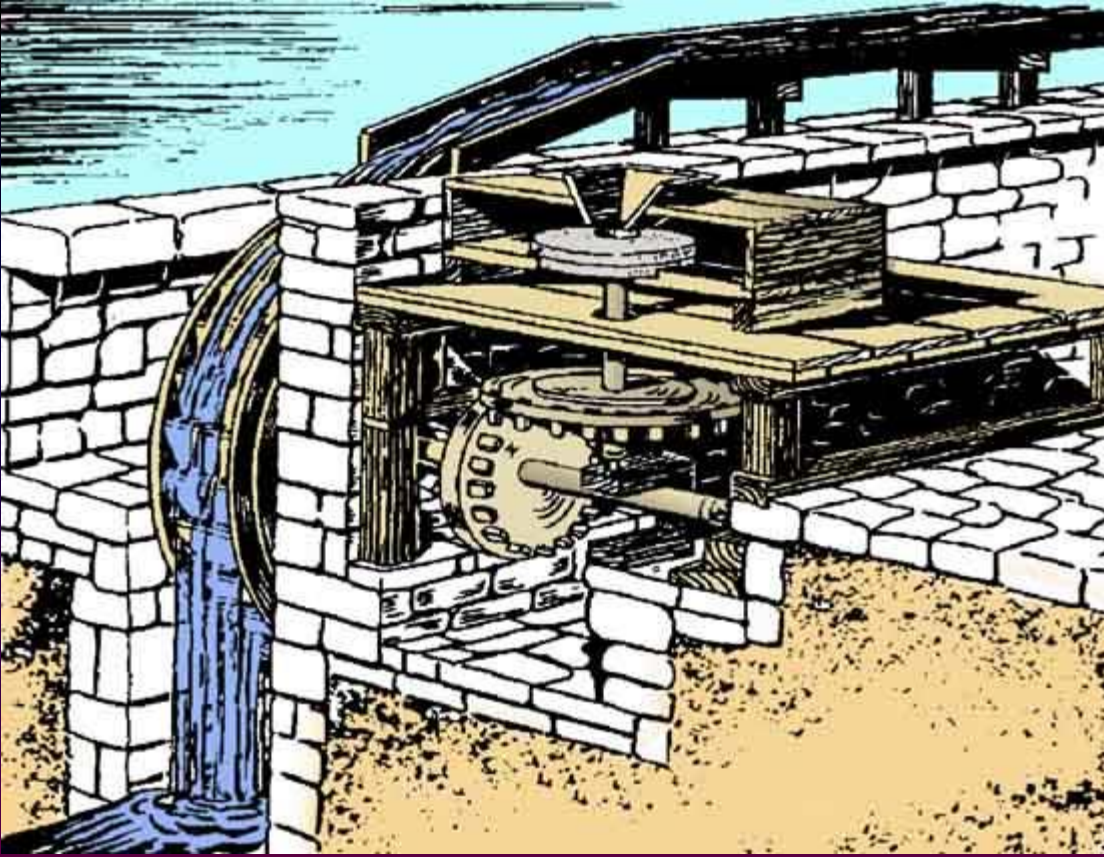


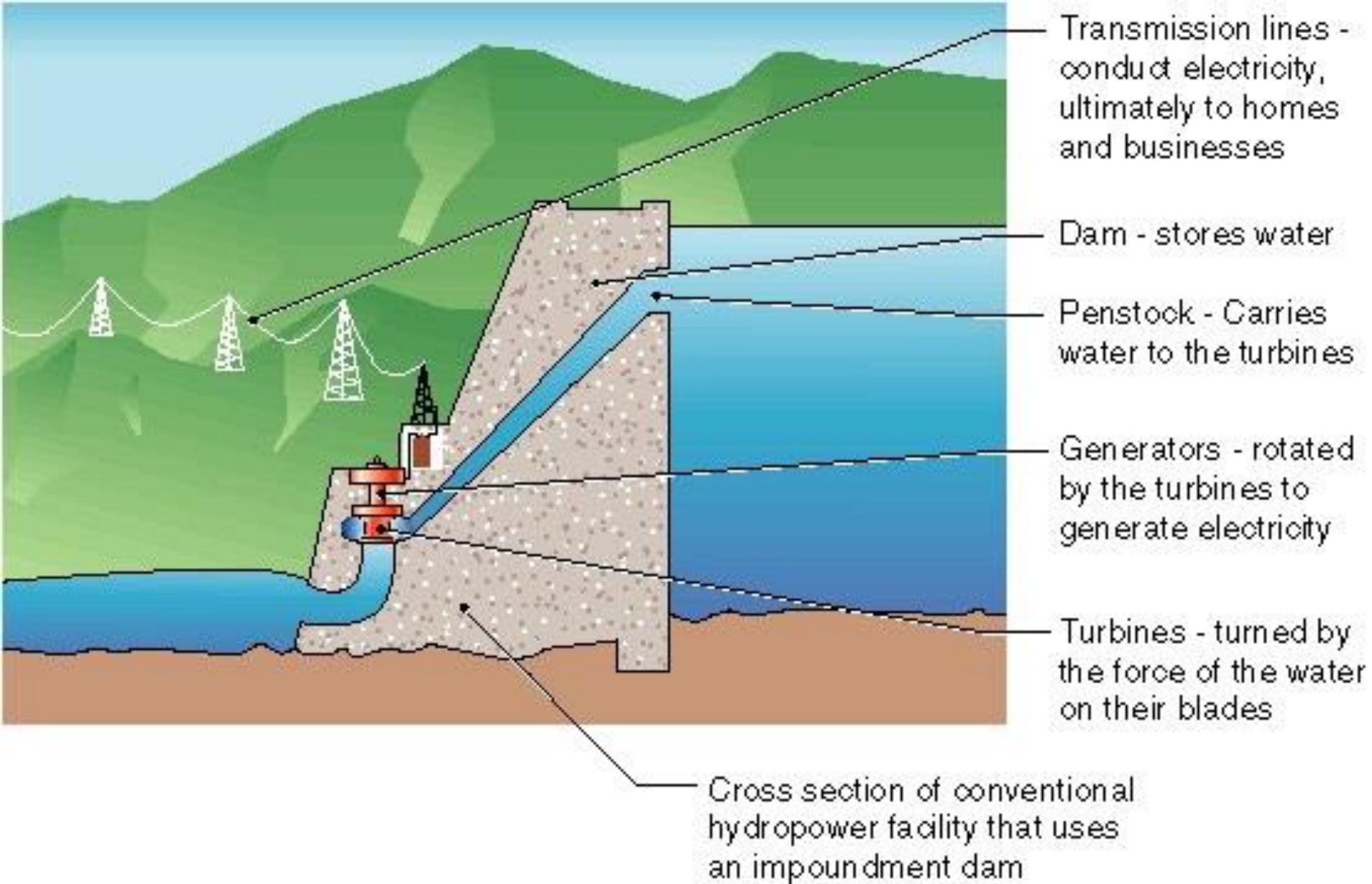
Early water power had problems

- Rivers and streams might be far removed from raw materials, workers, and markets
- Rivers are prone to flooding and drying
- Not enough rivers to provide the power needed to meet growing demand









- By 1800, steam engines were replacing water wheels as sources of power for factories
- Factories relocated near raw materials, workers, and ports

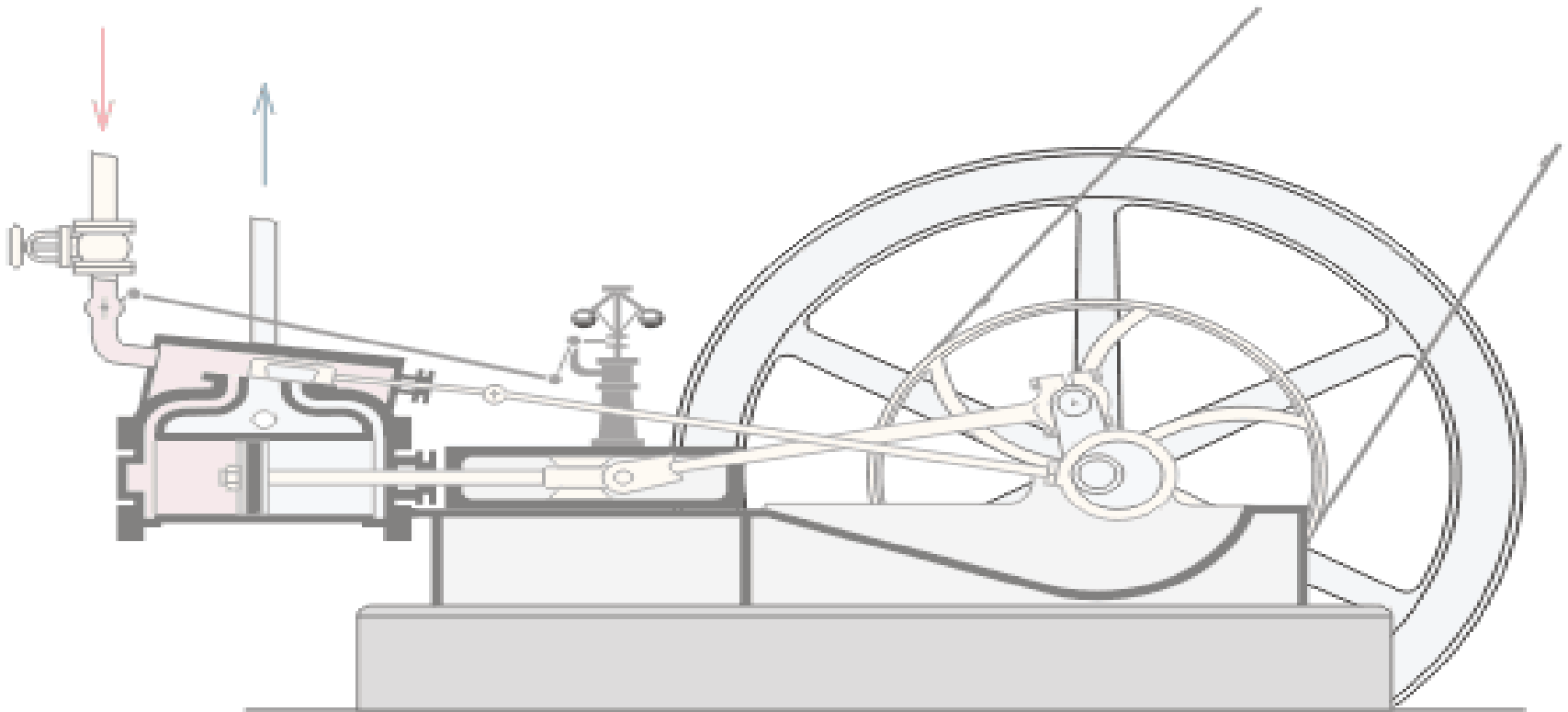


How the steam Engine Works:

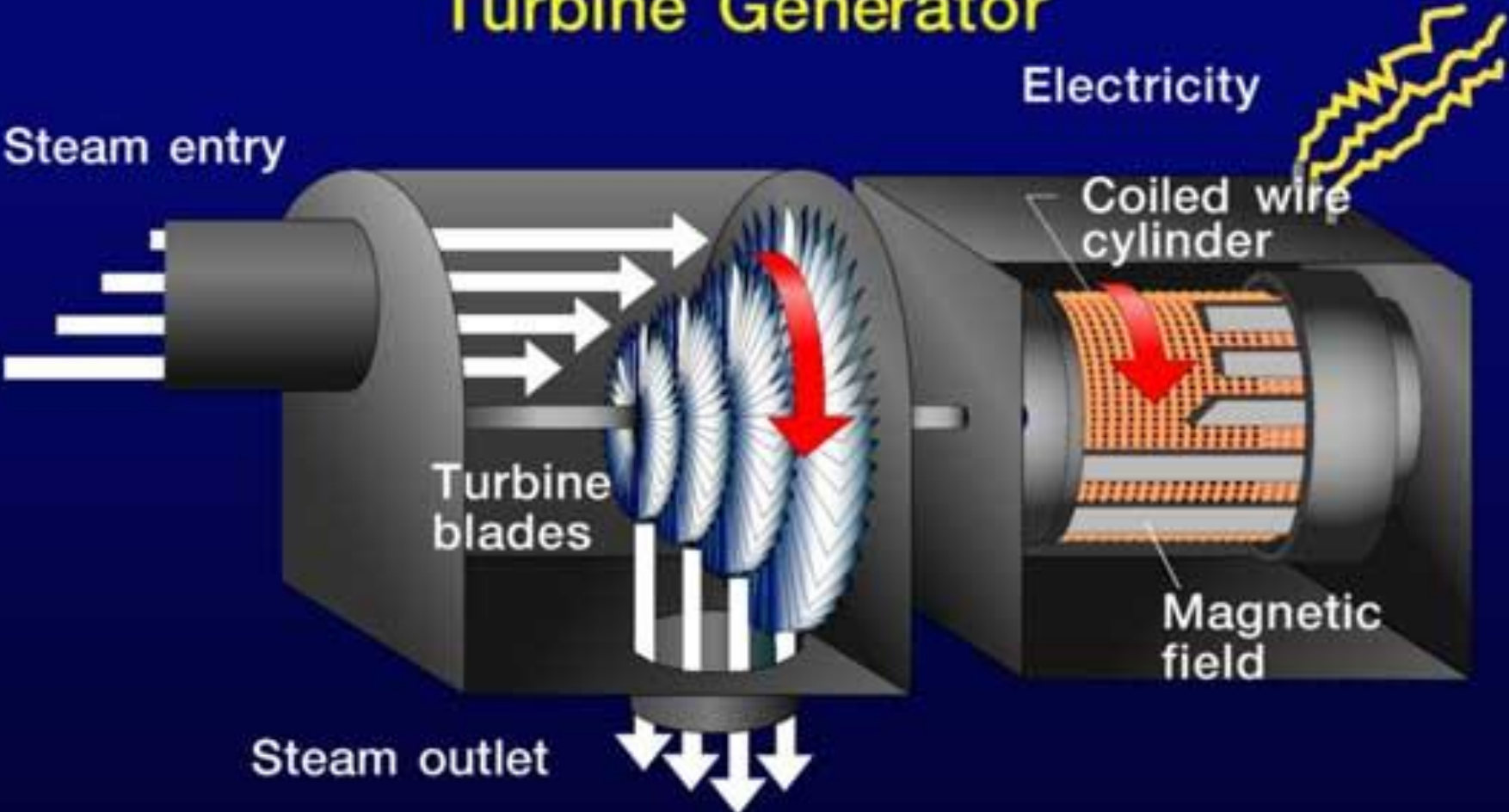
- Coal heats water making steam in a boiler



- The steam is released causing a piston to move

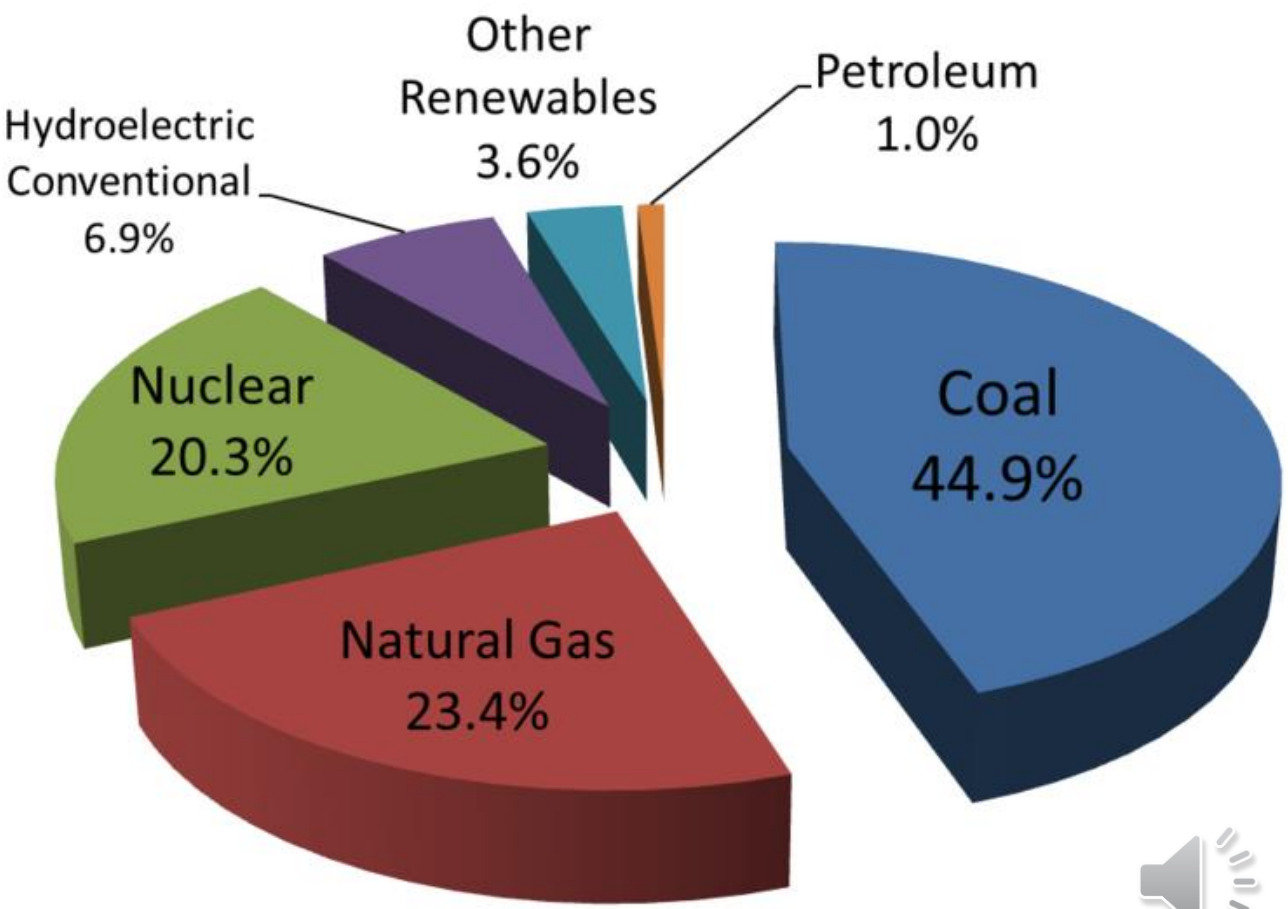
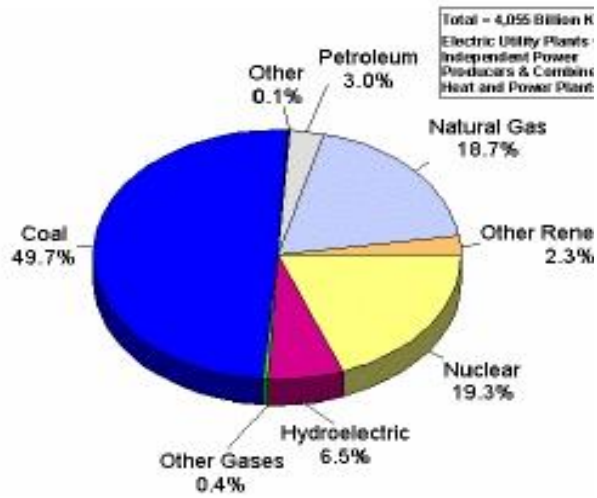


Turbine Generator



This is how we get most of our electricity today

2009 U.S. Electricity Generation by Source



Electric Power Generation by Fuel Type (2004) United States



The main source of power for steam engines is from burning coal.



Proved recoverable coal reserves at end-2006 (million tonnes (teragrams))^[41]










Country	Bituminous & anthracite	SubBituminous & lignite	TOTAL	Share
 USA	111,338	135,305	246,643	27.1
 Russia	49,088	107,922	157,010	17.3
 China	62,200	52,300	114,500	12.6
 India	90,085	2,360	92,445	10.2
 Australia	38,600	39,900	78,500	8.6
 South Africa	48,750	0	48,750	5.4
 Ukraine	16,274	17,879	34,153	3.8
 Kazakhstan	28,151	3,128	31,279	3.4
 Poland	14,000	0	14,000	1.5
 Brazil	0	10,113	10,113	1.1
 Germany	183	6,556	6,739	0.7
 Colombia	6,230	381	6,611	0.7
 Canada	3,471	3,107	6,578	0.7
 Czech Republic	2,094	3,458	5,552	0.6
 Indonesia	740	4,228	4,968	0.5
 Turkey	278	3,908	4,186	0.5
 Greece	0	3,900	3,900	0.4



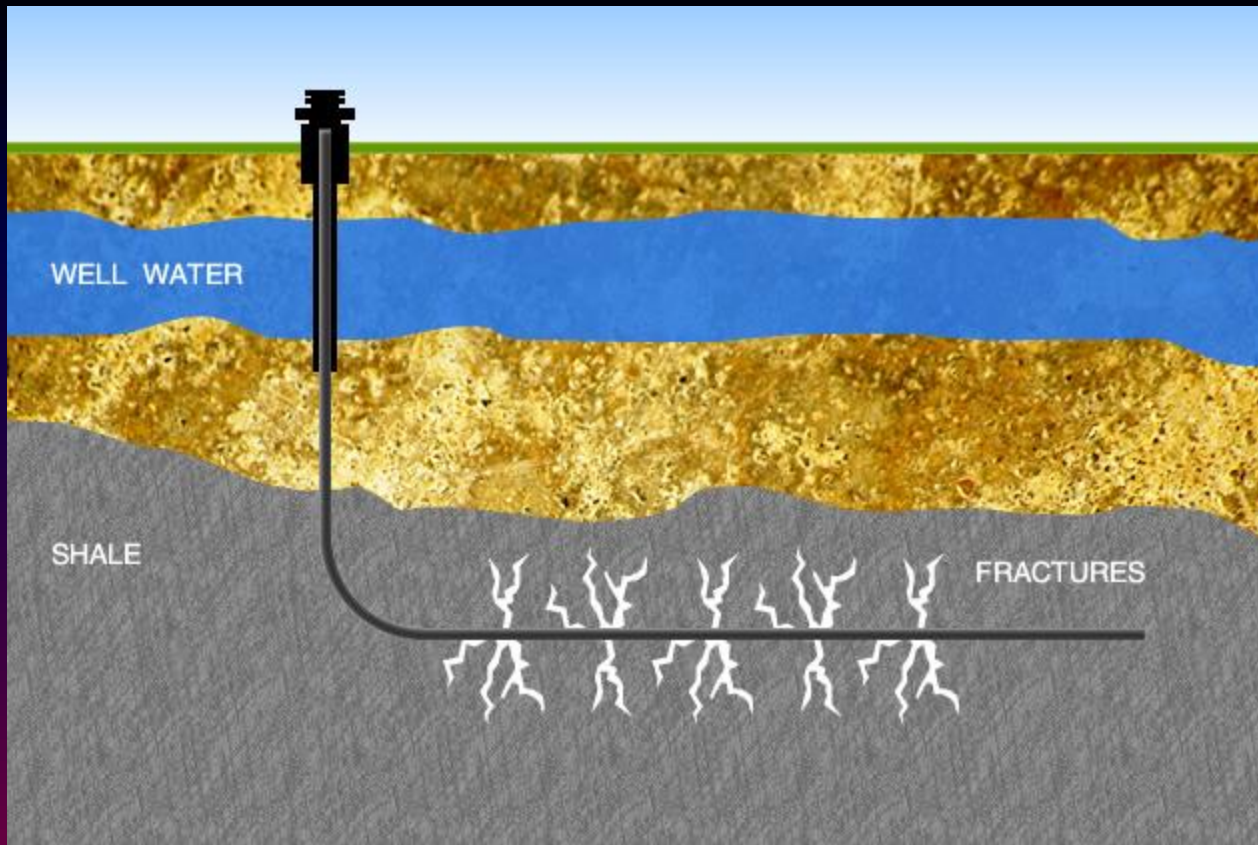
Major coal producers

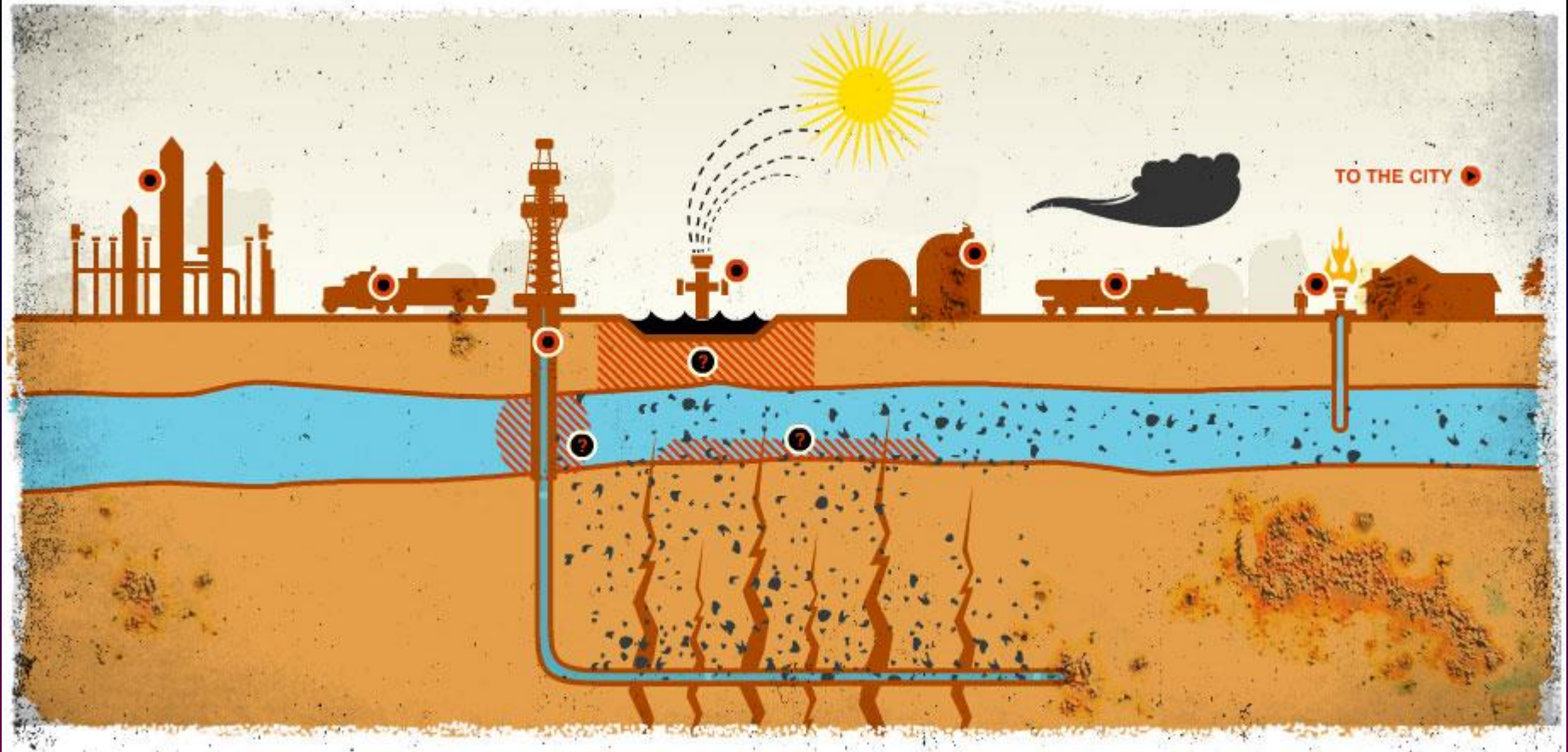
The reserve life is an estimate based only on current production levels for the countries shown, and makes no assumptions of future production or even current production trends.

Production of Coal by Country and year (million tonnes)^[41]

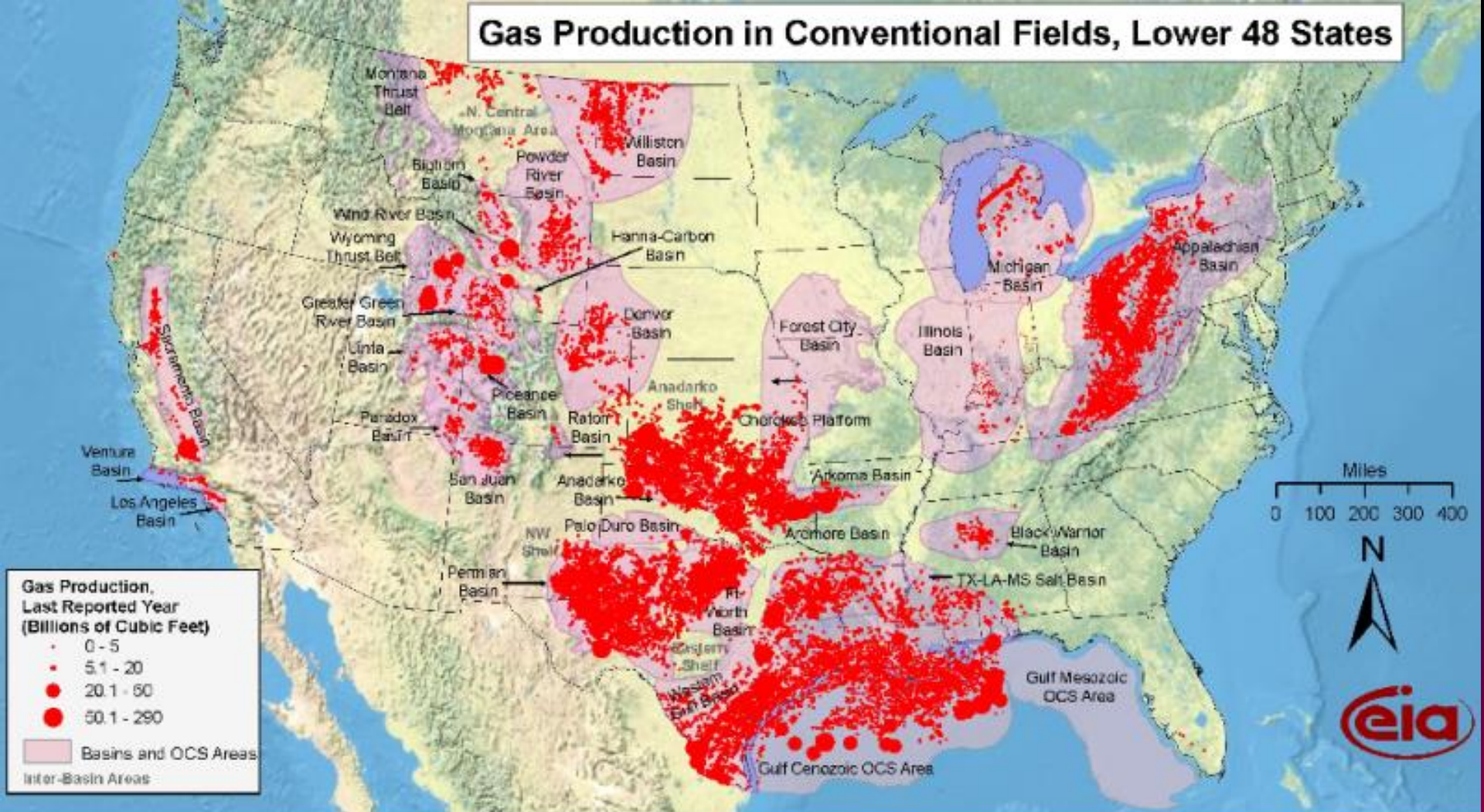
Country	2003	2004	2005	2006	Share	Reserve Life (years)
 China	1722.0	1992.3	2204.7	2380.0	38.4 %	48
 USA	972.3	1008.9	1026.5	1053.6	17.0 %	234
 India	375.4	407.7	428.4	447.3	7.2 %	207
 Australia	351.5	366.1	378.8	373.8	6.0 %	210
 Russia	276.7	281.7	298.5	309.2	5.0 %	508
 South Africa	237.9	243.4	244.4	256.9	4.1 %	190
 Germany	204.9	207.8	202.8	197.2	3.2 %	34
 Indonesia	114.3	132.4	146.9	195.0	3.1 %	25
 Poland	163.8	162.4	159.5	156.1		90
Total World	5187.6	5585.3	5886.7	6195.1	100 %	142







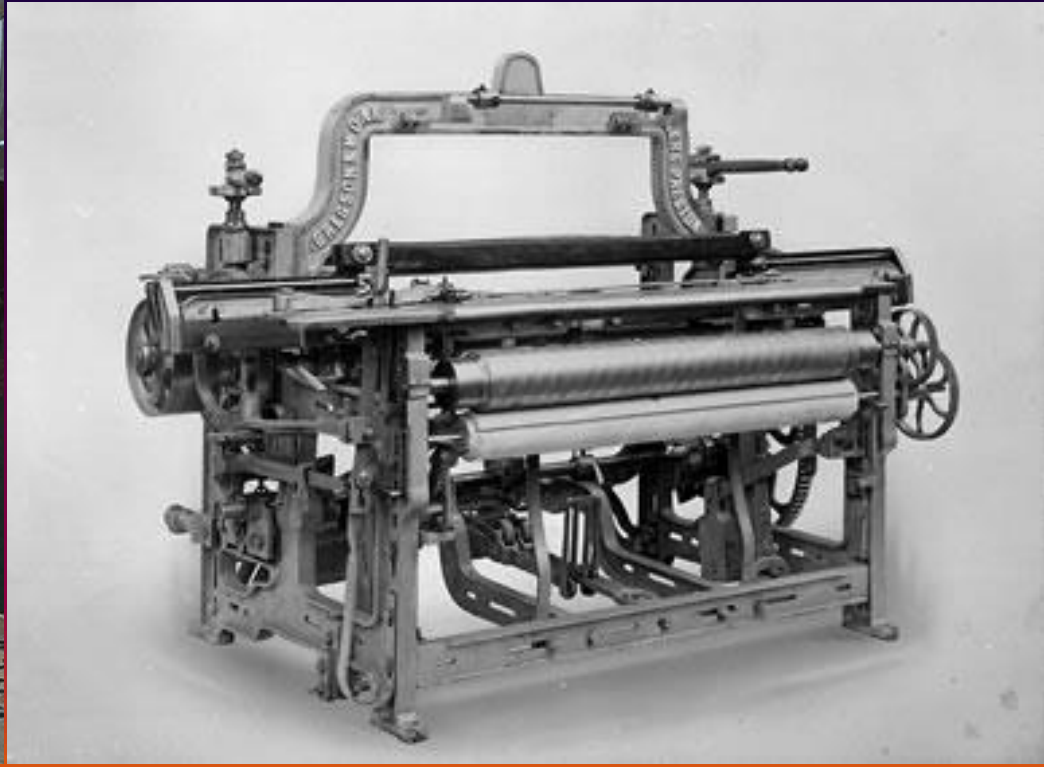
Gas Production in Conventional Fields, Lower 48 States



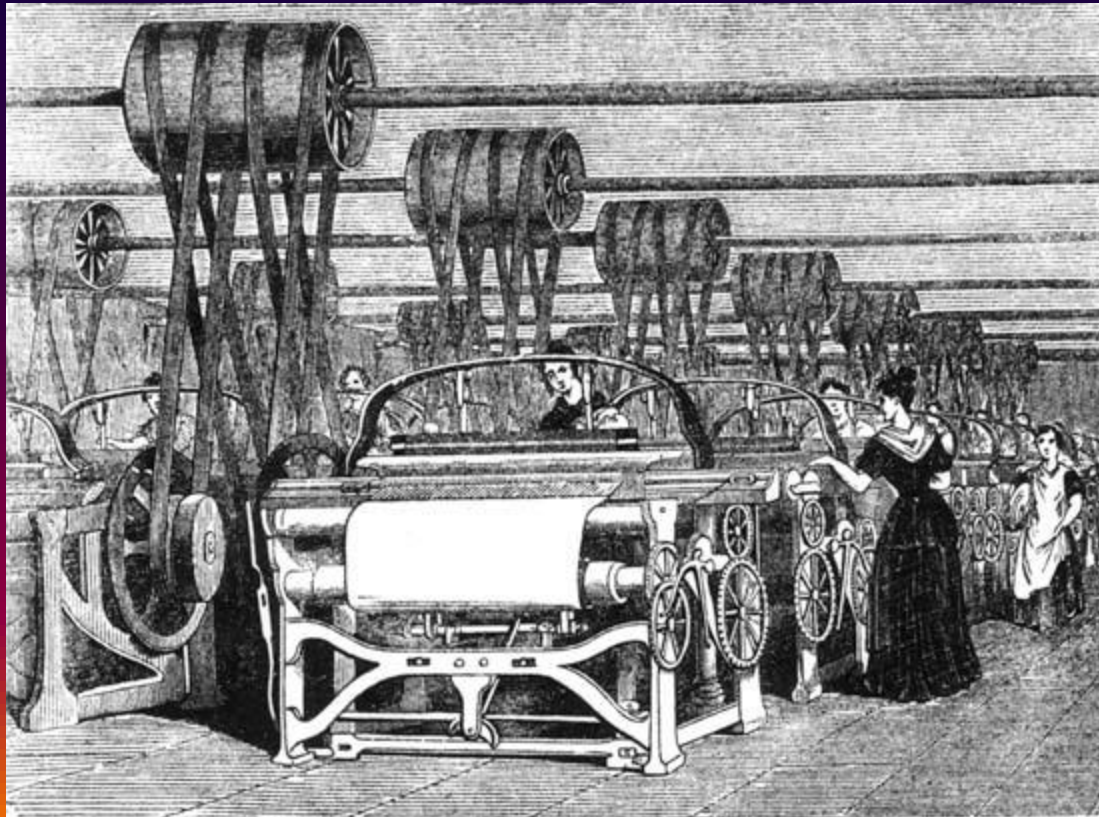
Source: Energy Information Administration based on data from HPDI, IN Geological Survey, USGS
 Updated: April 8, 2009



- Machines were invented which replaced human labor



The first industries to increase production through extensive use of the steam engine were textile and iron.



The Birth and Growth of the Textile Industry

John Kay (English)

Flying shuttle,
1733

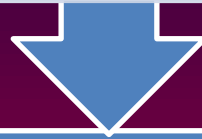
Hand-operated machine which increased the speed of weaving



James Hargreaves (English)

Spinning jenny,
1765

Home-based machine that spun thread 8 times faster than when spun by hand



Richard Arkwright (English)

Water frame, 1769

Water-powered spinning machine that was too large for use in a home – led to the creation of factories



Samuel Crompton (English)

Spinning mule, 1779

Combined the spinning jenny and the water frame into a single device, increasing the production of fine thread



Edward Cartwright (English)

Power loom, 1785

Water-powered device that automatically and quickly wove thread into cloth



Eli Whitney (American)

Cotton gin, 1793

Device separated raw cotton from cotton seeds, increasing the cotton supply while lowering the cost of raw cotton



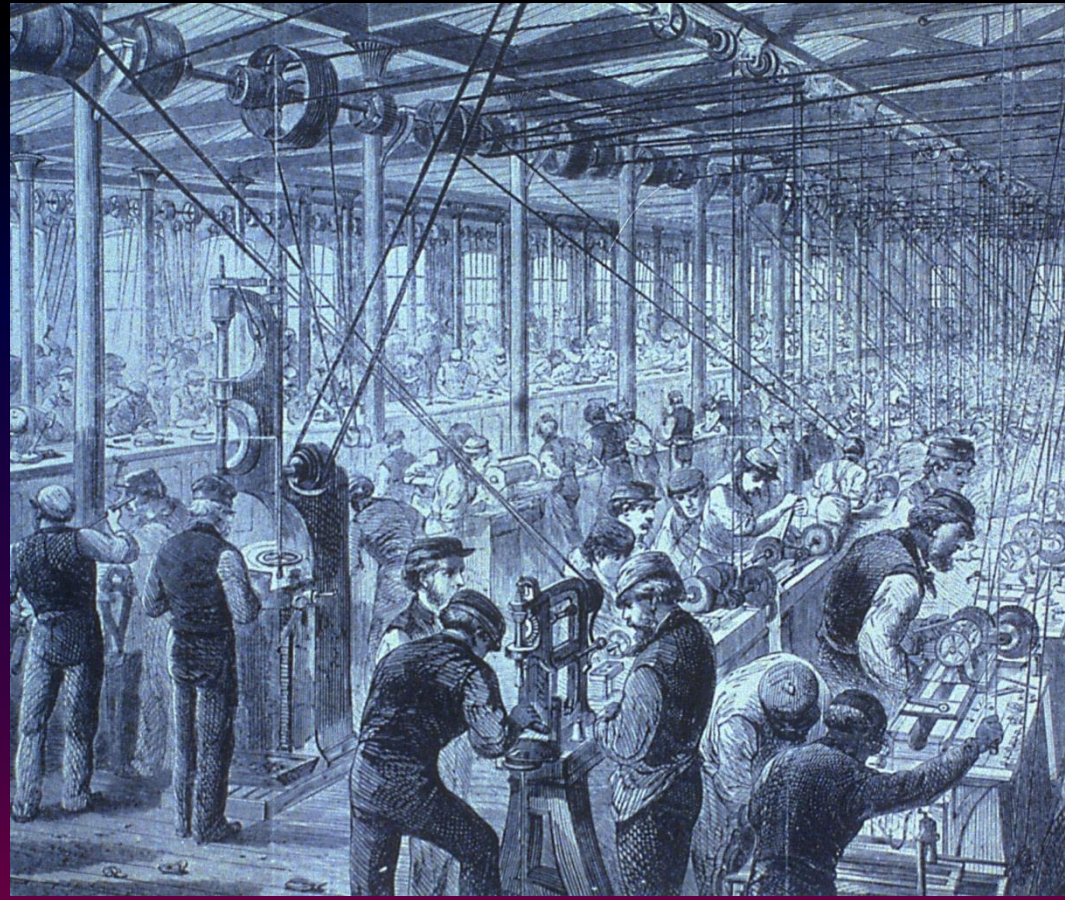
Elias Howe (American)

Sewing machine, 1846

Speed of sewing greatly increased

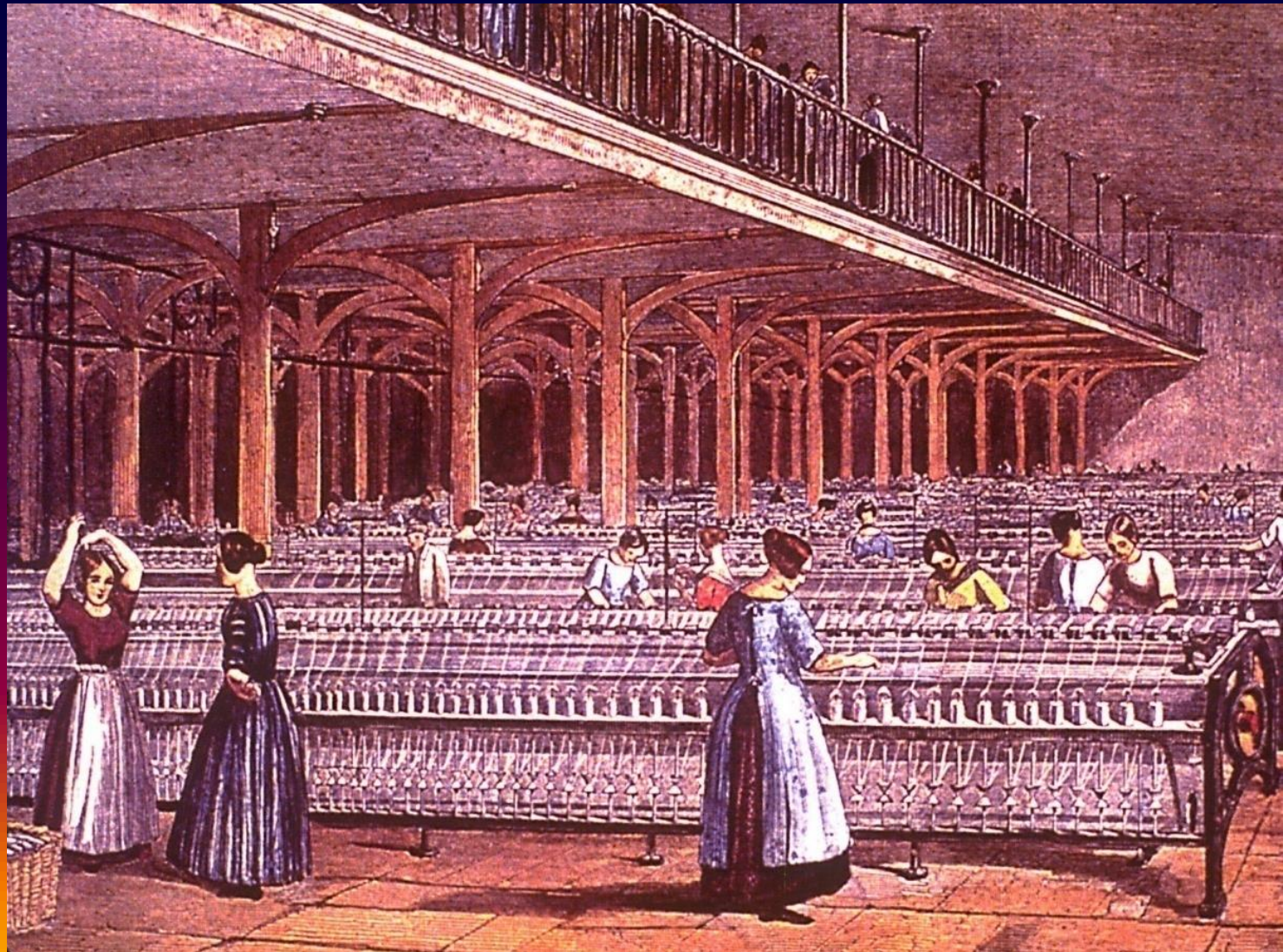


- Development of factory system: Mass production of goods plus faster method of production equals lower prices



Factory System

Replaced the domestic system of production



	Domestic System	Factory System
Methods	•Hand tools	•Machines
Location	•Home	•Factory
Ownership and Kinds of Tools	•Small hand tools owned by worker	•Large power-driven machines owned by the capitalist
Production Output	<ul style="list-style-type: none"> • Small level of production • Sold only to local market • Manufactured on a per-order basis 	<ul style="list-style-type: none"> • Large level of production • Sold to a worldwide market • Manufactured in anticipation of demand
Nature of Work Done by Worker	•Worker manufactured entire item	<ul style="list-style-type: none"> •Worker typically made one part of the larger whole •Henry Ford's assembly line (early 20th century) kept workers stationary
Hours of Work	•Worker worked as much as he/she would and could, according to demand	•Worker worked set daily hours
Worker Dependence on Employer	•Worker had multiple sources of sustenance—other employers, own garden or farm, and outside farm labor	•Worker relied entirely on capitalist for his/her income—urban living made personal farming and gardening impractical



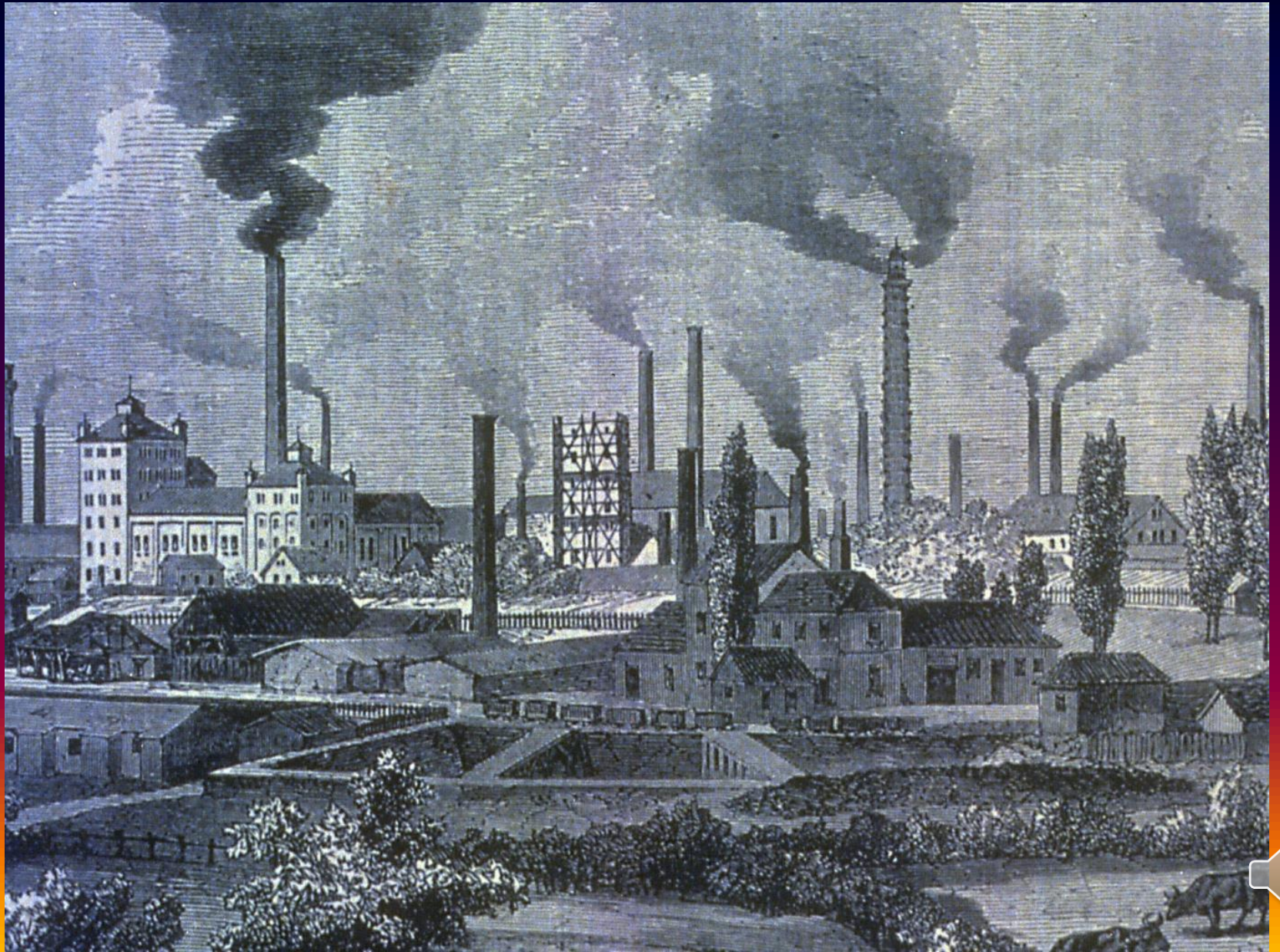
The cottage industry or domestic system involved manufacturing in the home. Domestic system could not keep up with demand



- Workers concentrated in a set location



- Cities grew around the factories



- Rural-to-urban migration: People left farms to work in cities





**25
Largest
Cities
1900**

© 1997 Matthew White





- Communication improved (Telegraph, Telephone, Radio)

Samuel F.B. Morse
(American)

- Telegraph (1844)
- Rapid communication across continents

Alexander Graham Bell
(American)

- Telephone (1876)
- Human speech heard across continents

Cyrus W. Field
(American)

- Atlantic cable (1866)
- United States and Europe connected by cable



• Transportation Improved

Robert Fulton
(American)

- Steamboat (1807)
- Sped water transportation

Thomas Telford and
John McAdam
(British)

- Macadamized roads (1810-1830)
- Improved roads

George Stephenson
(English)

- Locomotive (1825)
- Fast land transport of people and goods

Gottlieb Daimler
(German)

- Gasoline engine (1885)
- Led to the invention of the automobile

Rudolf Diesel
(German)

- Diesel engine (1892)
- Cheaper fuel

Orville and Wilbur
Wright (American)

- Airplane (1903)
- Air transport



Before the Industrial Revolution

- Canal barges pulled by mules
- Ships powered by sails
- Horse-drawn wagons, carts, and carriages

After the Industrial Revolution

- Trains
- Steamships
- Trolleys
- Automobiles



The most important transportation improvement in the eighteenth century was the canal. Canals are manmade waterways dug between 2 large bodies of water.





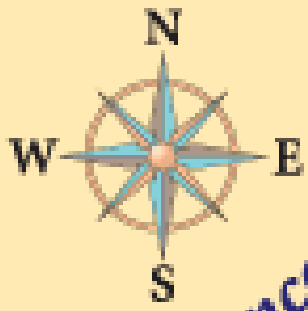
The Erie Canal was a short cut from the Atlantic Ocean to the Great Lakes.







CANADA



Duluth

Lake Superior

Lake Michigan

Lake Huron

Lake Erie

Lake Ontario

Saint Lawrence River

UNITED STATES

ATLANTIC OCEAN

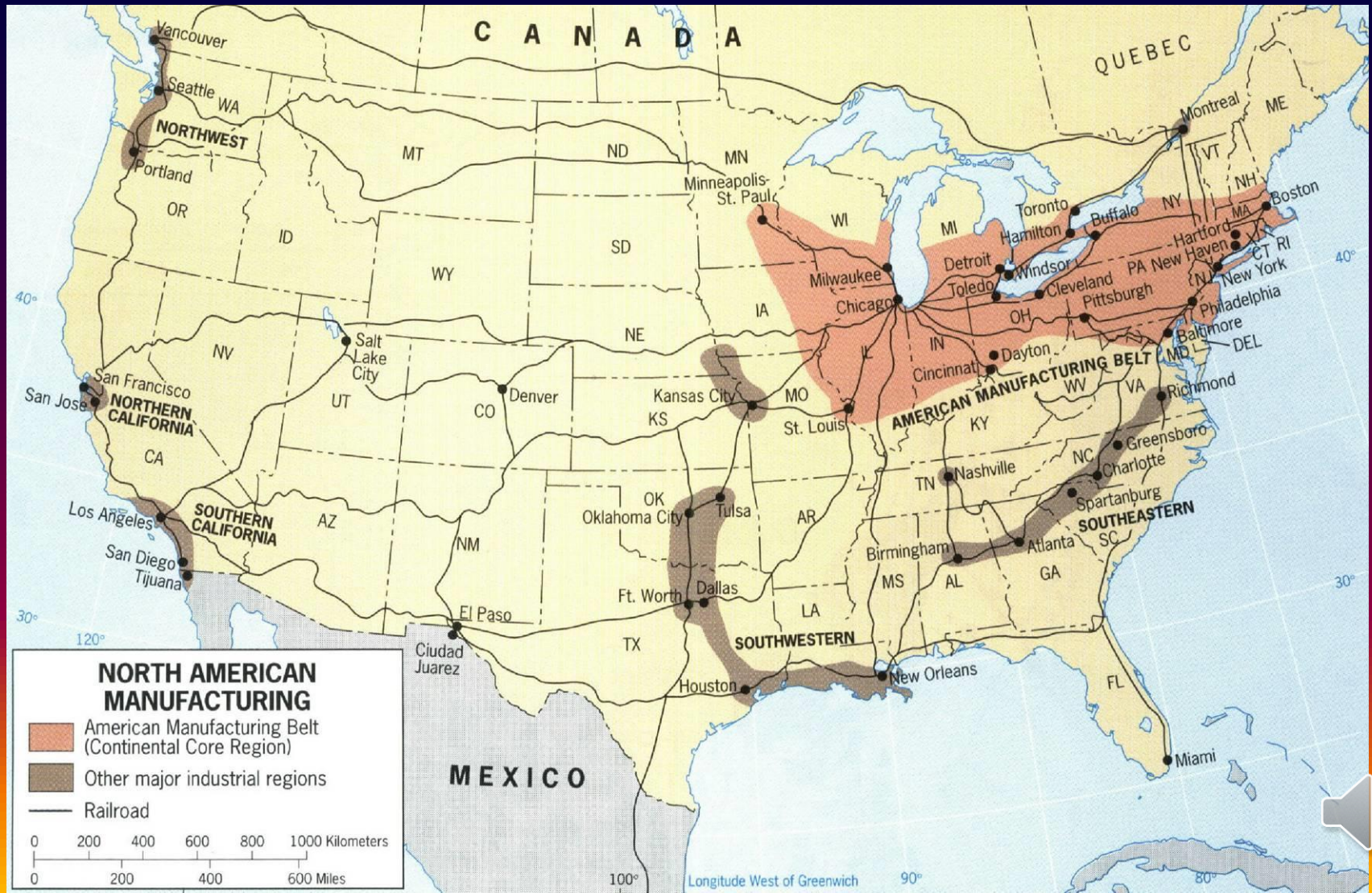


The Great Lakes and St. Lawrence Seaway

Connecting the Atlantic Ocean and the Great Lakes, the St. Lawrence Seaway opened in 1959.



This canal system helped to bind the Manufacturing Belt together.



4 ways Railroads revolutionize life.

1. Spurred industrial growth by giving manufacturers a cheap way to transport material and finished products

2. Created jobs (railway, and mining)

3. Boosted agricultural and fishing industries

4. Encouraged country people to take distant city jobs



The Industrial Revolution began in England (Great Britain) around 1750.



Reasons 18th century
Britain was ideal for
industrialization

1. Large supply of labor

- More food because of the Agricultural Revolution equals more people
- Less farmers were needed with mechanization



2. Availability of capital (money to be loaned out so people can make money).

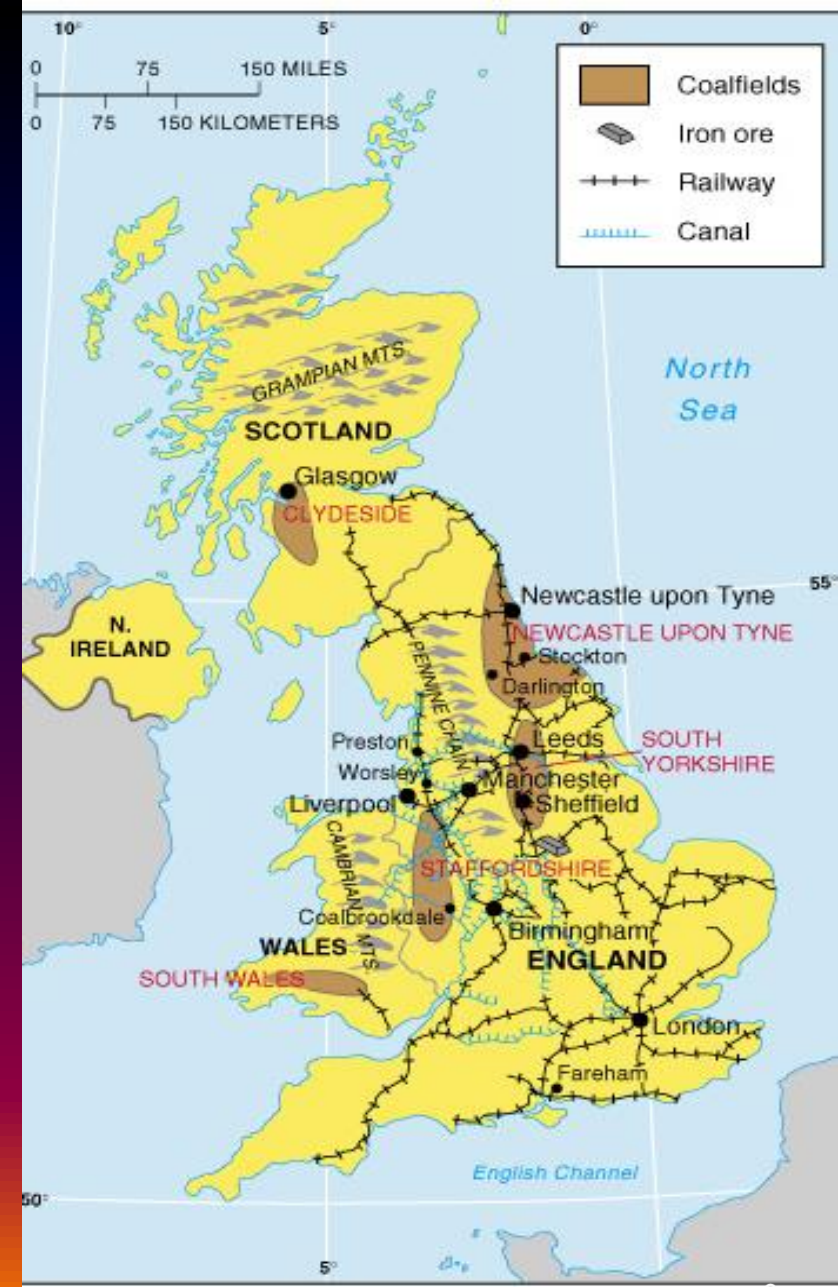
3. Large Market for their goods because of the growing population and a large empire

4. Was politically stable.



5. Geography and Natural Resources

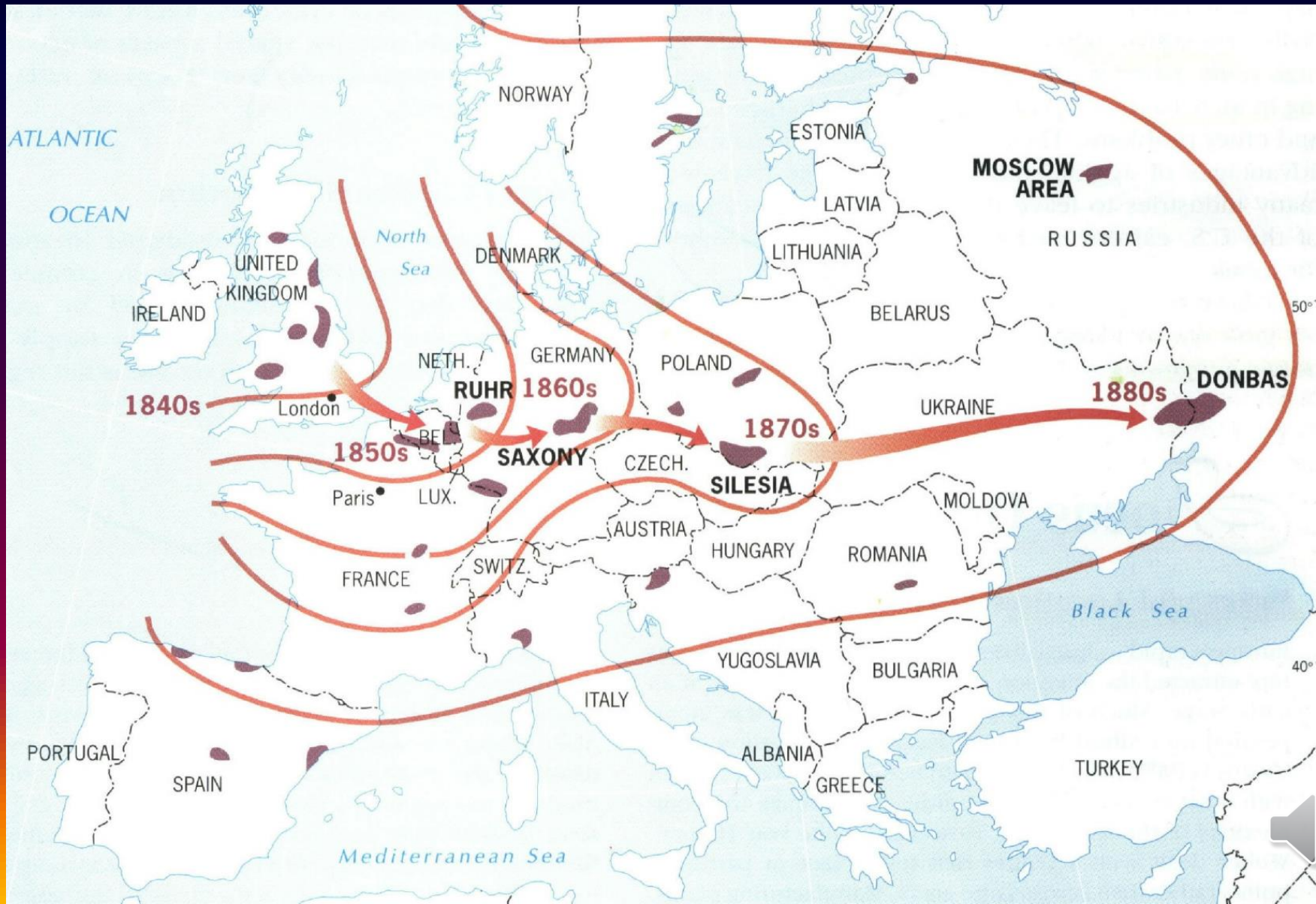
- a. rivers for power and transport
- b. excellent harbors and ports
- c. island protects it from some wars and encourages trade
- c. coal for power
- d. iron ore for steel

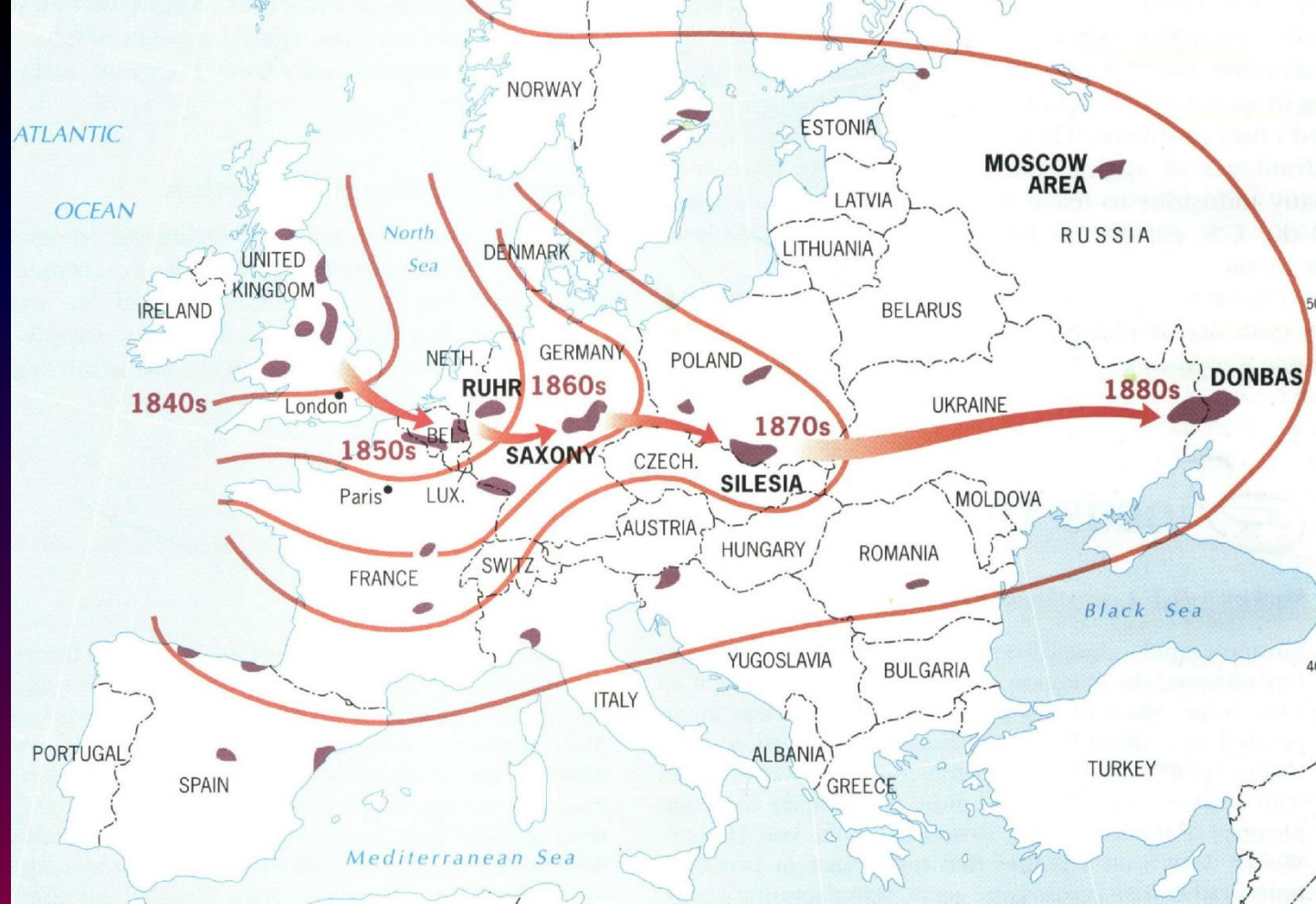


Great Britain produced as much coal and iron as every other country combined



The Industrial Revolution in Europe then diffused from west to east.





NOT southwestern France and northeastern Spain



Global Communications and Transportation Revolution

Technology:

- Containerization of Cargo (1950s)
- Nuclear Energy (Fission)
- Television (1950s)
- Inexpensive International Air Transport (1960s - present)
- Internet and earlier Arpanet (1960s)
- Personal Computer (1980s)
- Satellite Communications (1990s)



Advantages of industrialization:

- Increase in material wealth
- Replacement of a subsistence economy with a commercial economy
- Widening the range of personal choices
- Increasing employment opportunities



Disadvantages of industrialization include:

- Increased environmental pollution
- Depletion of natural resources
- Disappearance of traditional ways of life
- Building of unattractive landscapes



Before industrialization can occur in a country, the agricultural sector must have developed to the point where a surplus is being produced to feed the industrial workers.



For this reason, a balanced development strategy in an LDC wishing to industrialize would usually emphasize the development of agriculture before manufacturing.

