

## **Timeline for World Civilization and Industrialization: A History of Energy Consumption**

1. 700,000 B.C. – Homo Erectus discovers fire
2. 11,000 B.C. – Humans domesticate large animals
3. 8000 B.C. – 7000 B.C. – Humans develop farming in the Middle East and China, allowing for food storage, larger populations, and better nourishment
4. 5000 B.C. – Development of cities allows people to specialize in one job, leading to the development of farming tools, clay pottery, wheels, cast bronze tools and weapons, reading and writing, and a government and religious bureaucracy
5. 3500 B.C. – Bronze Age begins
6. 1500 B.C. – Iron Age begins
7. 1000 B.C. – Rise of Greek city states, which would eventually lead to the studies of mathematics, engineering and science, as well as the creation of democratic government
8. 0 – Christ is born
9. 1708 A.D. – Jethro Tull invents the mechanical seed sower, permitting large scale planting of crops in rows
10. 1709 — Abraham Darby invents the use of coke to smelt iron, making it more economical and efficient
11. 1712 – Thomas Newcomen invents the first steam engine
12. 1765 – James Hargreaves invents the spinning jenny used in weaving cloth
13. 1775 – James Watt revolutionizes the steam engine making it more efficient
14. 1779 – First steam powered cloth mills appear
15. 1787 – Edmund Cartwright builds the first power loom
16. 1792 – William Murdock becomes the first person to light his home with coal gas
17. 1793 – Eli Whitney invents the cotton gin, revolutionizing the cotton growing industry

18. 1807 – Robert Fulton introduces the steamboat
19. 1821 – Michael Faraday demonstrates electro magnetic rotation, the principle of the electric motor
20. 1831 – Michael Faraday discovers electro magnetic current
21. 1838 – Samuel Morse invents the telegraph and Morse code
22. 1843 – Great Britain launches the first iron, screw propelled steamship
23. 1854 – Henry Bessemer invents the Bessemer process for refining iron into steel
24. 1858 – The first Trans-Atlantic cable is laid
25. 1859 – Drake drills the first oil well in Pennsylvania; 2000 barrels of oil are recovered
26. 1867 – Alfred Nobel invents dynamite
27. 1873 – James Clerk Maxwell describes the laws of electro-magnetic radiation
28. 1876 – Alexander Graham Bell invents the telephone
29. 1877 – Thomas Alva Edison invents the phonograph
30. 1879 – Thomas Edison invents the incandescent lamp
31. 1886 – Karl Friedrich Benz builds the first automobile with an internal combustion engine
32. 1896 – Guglielmo Marconi patents wireless telegraph
33. 1900 – 64 million barrels of oil are recovered world wide
34. 1901 – Marconi sends first Trans-Atlantic radio message from the U.S.
35. 1903 – The Wright brothers invent the airplane
36. 1908 – Henry Ford introduces the Model T and puts the world on wheels
37. 1920-25 – Opening of Texas and Persian Gulf oil fields inaugurates era of cheap energy
38. 1926 – Robert Goddard launches the first liquid fuel rocket

39. 1928 – John Logie Baird transmits television signals from Great Britain to the United States
40. 1945 – J. Presper Eckert Jr. and John William Mauchly create ENIAC, the first electronic computer
41. 1947 – William Shockley, John Bardeen and Walter Brattain invent the transistor
42. 1959 – Jack Kilby and Robert Noyce patent the first computer chip
43. 1968 – the U.S. Defense Department initiates *ARPANet*, a network of university and military computers. *ARPANet* is the forerunner of the internet
44. 1971 –The silicon chip microprocessor is used in calculating machines
45. 1976 – Stephen Jobs and Michael Wozniak introduce the Apple II, the first easy to use personal computer
46. 1983 – The first commercial cellular system is introduced in the United States
47. 1991 – The Word Wide Web arrives
48. 2000 – 29 billion barrels of oil are recovered world wide
49. 2005 – 6.5 billion tons of coal are recovered world wide