Wind turbines wikipedia

Wind turbines wikipedia

A wind turbine is a rotating machine that transfers kinetic energy from the wind into mechanical energy. If the mechanical energy is used directly by machinery, such as for pumping water, cutting lumber or grinding stones, the machine is called a windmill. If the mechanical energy is instead converted to electricity, the machine may be called a wind turbine generator (WTG), wind power unit (WPU), wind energy converter (WEC), or aerogenerator.

Although wind turbines are a renewable source of energy and don"t pollute the environment as a result of generating power, they have an environmental impact. Some people think that wind turbines create a lot of noise and look unappealing. However, wind turbines are placed no closer than 300 meters from residential homes. At that distance, a wind turbine is no louder than an average household air conditioner.[3]

With the development of electric power, wind power found new applications in lighting buildings remote from centrally generated power. Throughout the 20th century, parallel paths developed small wind plants suitable for farms or residences and larger utility-scale wind generators that could be connected to electricity grids for remote use of power. Wind-powered generators operate in sizes ranging between tiny plants for battery charging at isolated residences up to near-gigawatt sized offshore wind farms that provide electricity to national electrical networks.

Sailboats and sailing ships have been using wind power for at least 5,500 years,[citation needed] and architects have used wind-driven natural ventilation in buildings since similarly ancient times. The use of wind to provide mechanical power came somewhat later in antiquity.

The Babylonian emperor Hammurabi planned to use wind power for his ambitious irrigation project in the 17th century BC.[16]

Wind-powered automata are known from the mid-8th century: wind-powered statues that "turned with the wind over the domes of the four gates and the palace complex of the Round City of Baghdad". The "Green Dome of the palace was surmounted by the statue of a horseman carrying a lance that was believed to point toward the enemy. This public spectacle of wind-powered statues had its private counterpart in the "Abbasid palaces where automata of various types were predominantly displayed."[25]

Windmills were used to pump water for salt making on the island of Bermuda, and on Cape Cod during the American revolution.[24]In Mykonos and in other islands of Greece, windmills were used to mill flour and remained in use until the early 20th century.[29] Many of them are now refurbished to be inhabited.[30]

In 1891 Danish scientist, Poul la Cour, constructed a wind turbine to generate electricity, which was used to

produce hydrogen[6] by electrolysis to be stored for use in experiments and to light the Askov Folk High School. He later solved the problem of producing a steady supply of power by inventing a regulator, the Kratostate, and in 1895 converted his windmill into a prototype electrical power plant that was used to light the village of Askov.[35]

In the American midwest between 1850 and 1900, a large number of small windmills, perhaps six million, were installed on farms to operate irrigation pumps.[36] Firms such as Star, Eclipse, Fairbanks-Morse, and Aeromotor became famed suppliers in North and South America.