

# Essay on wind energy and environmental conservation

[Environment](#), [Pollution](#)



## **The Role of Wind Energy in Environmental Conservation**

Concerns over environmental pollution have been on the increase worldwide since the first signs of global warming became apparent in the 1980s. In particular, concerns over the type of energy source used in the world today have been the most obvious, with different parties taking differing sides over these issues. Of interest is the use of wind energy as a solution to the greenhouse effect. Wind energy has been in use for thousands of years, with some evidences available that early Egyptians, Persians, Greeks and even Romans used wind energy to perform some simple tasks such as winnowing, blowing fire in smelting industries and also in navigation. Wind-generated electricity began sometimes in the 19th century, and was in use in many rural European and American farms in the early part of the 20th century (Anker & Olsen, 2008).

Wind energy is considered free and always available. Moreover, it is considered by environmentalist as a good way to reduce overdependence on fossil fuels, nuclear and hydroelectricity and as a good solution to reduce the ever increasing problems associated with global warming (Easton, 2008). However, some health and pollution concerns have been raised to question the viability and use of this form of energy, and therefore, it is quite debatable that wind energy could provide the world with the best solution in counteracting the effect of global warming and environmental pollution (Easton, 2008).

Wind as a source of energy has several advantages over other sources. The obvious advantage over fossil fuels is that wind turbines do not emit gases or chemicals as it is the case with burning fuels. Emissions given off by motor vehicles, industrial and farm machinery are the predominant form of greenhouse gases that are increasing the atmospheric temperatures.

Proponents of use of alternative forms of energy point out at the ability of wind turbines as a potential solution to counteract the emission of gases, and thus achieve reduced atmospheric temperatures. In particular, they argue that wind turbines could be located at strategic points such as in or near industrial areas, where the industries would easily obtain the power, and encourage them to reduce the use of fossil fuels (Anker & Olsen, 2008).

The American government has for sometime been reducing taxes and increasing subsidies for companies and individuals entering and operating the wind power industry, in order to ensure that more and more entities invest in wind power generation (Gipe, 1995). In 2001, the government set a target of making at least 5% of the energy used in America to be from wind energy, thus reducing dependency on fuels by at least 3%. United Kingdom, Switzerland, Germany, Netherlands and Japan are among the leading nations in terms of wind power generation, where industrial and domestic dependency on fossil fuels has been shown to reduce significantly (Anker & Olsen, 2008).

Farm machinery is known to have been the leading environmental pollutant in the rural areas in America and Europe. Farm mechanization and the need to increase agricultural production in the 20th century saw the increased use

of large farm machinery, most of which consumed large volumes of fossil fuels, releasing large clouds of greenhouse gases such as carbon and sulfur based gases into the atmosphere. This caused an increased rate of global warming (Gipe, 1995). Proponents of alternative source of energy argue that the use of wind energy will reduce the rate of environmental pollution, reduce the rate of crop failure while at the same time increase the profitability since most of the fuels used in American and European farms is exported. It is also possible that farms can generate their own wind energy, and thus reduce overdependence on the energy provided from the national grid system. They could stand at a better position to achieve self sufficient, and thus reduce frequent losses caused by fuel problems.

A common argument is that the cost of producing wind power and transporting it into the areas of use such as industries, homes and farms is quite cheap when compared to the transport of other fuels (Easton, 2008). For instance, proponents of the alternative forms of energy argue that since almost everywhere there is enough wind to drive large turbines, wind power generating stations could be located at places where the power is needed such as industrial areas, and thus reduce the cost of transmitting the power through lines and underground cables (Cunningham & Cunningham, 2008). This also reduces the risks involved in the transmission of electricity. In addition, it is quite easy to monitor and make quick repairs in cases of breakdowns.

Location of large scale wind power generators has been of great concern as far as alternative sources of energy are concerned. Opponents argue that

large turbines require large extents of land, which is a quite an issue in populated areas, and which may take up large tracts of arable land. They argue that since failure is inevitable, living near turbines may risk human life because in case of failure, turbines may injure people, animals and plants (Gipe, 1995).

On the contrary, proponents argue that the location of turbines may not be very problematic, since the land necessary to support the power stations can be located at any ground, and the best one being on hilly and mountainous areas, where farming, settlement and industrial processes are very minimal. This implies that the turbines could be located at lands thought to be less useful, and therefore reduce all the risks involved (Easton, 2008).

A common argument concerning the generation of wind power has been the environmental impact of the turbines. While the proponents argue that the development of turbines and other equipment involved in wind power harnessing also contributes to environmental degradation due to the large sized and number of steels used, proponents argue that this only takes place once, and once installed, the turbines contribute significantly to prevention of further atmospheric degradation (Cunningham & Cunningham, 2008).

Opponents have argued that wind power generators are quite large, and that the process of transporting and installing them utilizes heavy trucks, which utilize petroleum fuel, and therefore contribute to global warming. On the contrary, proponents of this form of energy argue that the process of

installing such equipment would only take place once and that once installed, further environmental degradation is prevented (Vasi, 2011).

Economic advantage of large scale generation and use of wind power has been another concern, with opponents arguing that it is quite economically unviable to generate large volumes of wind power. This is because the amount of resources required to make, transport and install, repair and maintain wind power generators and equipments is very high compared to the value and volume of the power that such stations can generate (Vasi, 2011).

In addition, the technology involved is quite expensive while transmission may be even costly if the location of the turbines is placed at far places. While this is quite true and logical, governments in America and Europe have realized this, and initiated programs that will attract more investors into the industry, and several attempts to increase profitability have been established. These include subsidies and lowered taxation on equipment. This has achieved some great steps, with several researches showing that the industry is quite profitable, while at the same time contributing to environmental conservation and sustainability (Easton, 2008).

Ecological impact of wind power energy is quite little. The systems seem to be very friendly to both flora and fauna. There are few cases of environmental impact reported so far, and as long as the site for locating the wind generators is wisely chosen, only few animals and plants could be

affected. However, concerns have been raised over the number of bats and birds killed by turbines.

In America and European nations, there are large numbers of bats and birds found to have been killed as they fly past the turbines. Concerns have therefore been raised over the impact of the turbines on the ecology (Cunningham & Cunningham, 2008). This is especially so because most turbines are located in areas where there is quite a lot of wind in order to increase the probability of harnessing large amounts of power. Surprisingly, these areas are usually inhabited with many varieties of birds and bats, and where ecotourism is prominent. It therefore seems that these turbines may reduce the number of birds and bats (Hester & Harrison, 2003).

Ecological impact of wind energy generating turbines has also been observed at game reserves and animal parks. For instance, the turbines normally produce a lot of sound as they rotate, and given that multiple turbines are required for production of optimum amount of electricity. The sound is quite a nuisance to world life, and several studies have shown that most animals tend to avoid such places or are scared to go near them. It seems that the turbines normally drive away wild animals, thus making their essence questionable. In addition, constructing such turbines near homes and schools is quite questionable because of the noise they produce, thus contributing to noise pollution (Vasi, 2011).

Proponents of developing alternative sources of energy argue that the site for locating wind power turbines should be chosen with great caution to

avoid noise pollution and the impact on the wildlife (Hester & Harrison, 2003). For instance, they propose that offshore, mountains and arid areas are very suitable sites for locating the turbines. For example, in Britain and Netherlands, there are numerous number of turbines located offshore where little impact on marine life and wildlife is observed. Moreover, these areas have little or no use, and thus the presence of the turbines do not hinder development of any other utility (Vasi, 2011).

The viability of wind power is expected to increase with increased technology, and currently more and more efforts are being directed towards making more efficient, cheaper and less noisy turbines (Hester & Harrison, 2003). These efforts seem to be producing some positive effects, and soon the world could be having some of the best means of producing power. For instance, in America, the government has achieved at least 5% power from wind energy, while in Britain and other European nations as well as Japan; the figure is quite higher (Hester & Harrison, 2003).

In conclusion, wind power is a cheap and environmental friendly method of generating power, and as long as wind is absolutely free and no efforts are needed to 'dam' wind, human beings have an opportunity of reducing dependency on fossil fuels. Human efforts should therefore be directed towards increasing the efficiency and reducing the environmental impact of the turbines and the risks, cost and other controversies associated with wind power generators.



## References

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