Key Environmental Problems associated with wind energy generation and their implications

The use of renewable energies results in lower greenhouse gas emissions and reduced air pollution, and thus is a key solution to reach a sustainable future (European Commission, 2007). Wind is clean, naturally produced and free and everlasting. There are no fuel-related environmental risks related as wind turbines do not require any type of fuel. Furthermore, generation of electricity from wind energy would not contribute to air pollutions as there is zero emission of carbon dioxide.

In contrast, wind turbines do have its implications; destroying ecosystems, killings birds, disturbing wild animals in their natural habitats by creating noise. The structure itself requires clearing of wild and natural settings to make way for each of the huge turbine. Vertical structures with moving parts pose several risks that may affect the birds. Firstly, the birds will collide with turbines typically the propellers causing death and injury. It also interference with the bird's movements which results in lower mortality and lesser breeding grounds. The habitats of local wildlife will also be destroyed and thus they have to migrate to another place. Extensive data collections and developments of models of risk can greatly improve the conservation effort.

Winds farms in offshore lands are bigger and larger than onshore infrastructure. Visual impact of wind farms on the landscape is certainly a debatable issue. Onshore wind turbines definitely contribute towards the noise pollutions by rotations of the propellers at high speed. The wind farms were normally located away from residences, thus human population are less affected by the noise generated. On the other hand, it is still produces low-frequency noise that affects humans. However this is not the case for offshore wind farms, the operation of the wind turbines and propellers produces acoustic noises. The noises are propagated in all directions through vibrations which affect the marine life several kilometres away from the wind farm. This results in behaviourial change marine mammals. For example, reports shown that a typical 1500kW wind turbine may disrupt the feeding and spawning areas and routes of fishes. The use of better construction methods can greatly reduce the environmental effects.

It is believed that land areas with wind farms affect the surface air temperature. The spinning of wind turbines during generation lead to a minor warming during the night and a slight drop in temperature during the day time. Conversely, the warming at night benefit agriculture as rises in ambient heat can reduce frost damage and prolong growing season. There are no conclusive studies stating that wind energy generation pose threat to global climate but yet deliver significant advantages by reducing emissions of CO2 and air pollutants.

In general, the advantages using wind to generate energy outweigh the implications of environmental impacts. It significantly reduces the global warming contribution and reliance on burning fossil fuels for energy.

(466 Words)

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