

# Effects of energy transformation on the environment essay sample

[Environment](#), [Plants](#)



## **Introduction**

The environment is affected in different ways as the energy industry is trying to get the energy needed. The impact of energy transformation on the environment varies from one source to another. During any particular energy transformation, the energy is lost as heat to the environment. However, there has been increasing awareness by energy industry on protecting the environment, and thus is in the process of reducing its impact in the long-term (European Environment Agency & AEA Technology Environment, 2002).

## **Effects of Electricity Generation and Transmission on the Environment**

All the methods employed for converting energy to generate electricity have various effects on the environment. These impacts can either be active such as releasing of pollutants that are airborne, or passive such as habitat modification or aesthetics effect. In addition, those methods which are considered environmental friendly for instance, solar, hydro, and wind, have some significant effect on the environment. Environmental effect does not only result from the final electricity production, but also its transmission with concerns over aesthetics, land use and electromagnetic fields. Therefore, the entire cycle of generation of electricity should be considered while assessing the environmental impact and it includes production as well as transportation of fuel to be converted. This especially applies to nuclear power plants and fossil fuel that consumes huge quantities of fuel obtained from the earth. The environmental impact of energy system composed of

fuel transportation, spent fuels emissions, electricity transmission, and fuel recovery and production.

## **Effects of Raw Fuel Production on the Environment**

Production of oil: This takes place in power plants where burned fuel oil is a byproduct of petroleum industry, thus electricity that is partially produced is the one responsible for various environmental issues due to burning of hydrocarbon and oil. The burning of these fuels produces what is called greenhouse gases that bring about in global warming. Other effects are spills, blowouts, release of hydrogen sulfide and disposal of brine. The effects of oil refining on environment are air emission, odor, noise, water runoff and explosions.

Production of coal: This is mainly produced in order to generate electricity. The extraction of coal, especially on surface mining, causes both the short and the long term effects on the land, for instance, water drainage noise, and dust. Its transportation and storage releases dust and water drainage problems.

Production of natural gas: The possible effects on the environment during its production include emissions of hydrocarbon, leaks, trace metal emissions, and blowouts.

## **Effects of Producing Electricity on the Environment**

The great effect on the environment is generally caused by the fossil fuel power plants, whereby the process of burning of fuel releases airborne pollutants over a wide area. However, the nuclear power plants possess the most dangerous effect which includes radioactive particles that are harmful

to human.

The fossil fuel power plants: These plants causes environmental effects that includes use of water and land, thermal releases, solid waste disposal, noise, air emissions such as smog (causing infeasibility in the air), visual and climatic impacts resulting from cooling of towers, and ash disposal. However, the great effect of fossil plants is the release of air pollutants such as carbon monoxide, sulphur oxide compounds, nitrogen oxide compounds, and carbon dioxide gases during its production stage and at end use by motor vehicles.

The carbon and hydrocarbon compounds are referred to as greenhouse gases that destroy the ozone layer thus resulting in greenhouse effect that leads to global warming and changes in climatic conditions. The nitrogen oxide and sulphur oxide compounds produce acid that is responsible for formation of acid rain.

The nuclear power plants: These plants have only one issue on the environment, that is, if an accident occurs in the plant, very large quantities of radioactive particles would be released, and thus causing loss of life and thus the surrounding environment becomes impossible to live.

### **Effects of Transmitting Electricity on the Environment**

The transmission of electricity from the generation plant to the end users uses suspended wires which are held on by large towers, referred to as transmission lines. These lines over the past have been known to be an aesthetic nuisance that interferes with communications as well as being hazard to aircrafts that are flying at low heights. But today, there are several other issues about these lines that are considered to affect the natural

habitat, and it includes the effect of electromagnetic fields on the health of human.

The European countries have put more effort towards reducing these impacts. The government policies of green energy aim at producing energy in a way that it minimizes its destructive impact on the environment. The above discussed energy sources bring about global warming as well as climate change, and thus they are substituted by green energy sources which include geothermal, wind and bio-fuels, hydro energy and solar as the alternative sources. However, bio-fuels have widely been used as an alternative source of fuel in Europe. The successful development of bio-fuels in Europe has been initiated by the effectiveness of the national policy as well as the international agreements which stipulate the set environmental standards that is required by the body (Faaij, 2004).

For instance, Ireland formed an agreement with nine other states, ACER (EU representative association), EU Commission and the ENTSO-E (Transmission System Operators), the agreement was known as North Seas Offshore Grid Initiative in order to maximize the Northern Seas' renewable energy resources (T. D. Pat, 2012).

## **Bibliographies**

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