
Assessment of Statements Opposing Nuclear Energy

In our society, nuclear energy has become one of the most criticized forms of energy by the environmentalists. Thus, a look at nuclear energy and the environment and its impact on economic growth.

Lewis Mumford, an analyst, once wrote, 'Too much energy is as fatal as too little, hence the regulation of energy input and output not its unlimited expansion, is in fact one of the main laws of life.' This is true when dealing with nuclear power. Because our societies structure and processes both depend upon energy, man is searching for the most efficient and cheapest form of energy that can be used on a long term basis. And because we equate power with growth, the more energy that a country uses, - the greater their expected economic growth. The problem is that energy is considered to have two facets or parts: it is a major source of man-made repercussions as well as being the basis of life support systems.

Therefore, we are between two sections in which one is the section of 'resource availability and waste', and the other 'the continuity of life support systems pertinent to survival.'

Thus, the environmentalists believe that nuclear energy should not be used for various reasons. First of all, the waste product, i.e. plutonium, is extremely radioactive, which may cause the people who are working or living in or around the area of storage or use, to acquire leukemia and other cancers. They also show how billions of dollars are spent yearly on safety devices for a single reactor, and this still doesn't ensure the impossibility of a 'melt down.' Two examples were then given of Chernobyl and Three Mile Island, in 1979, when thousands of people were killed and incapacitated. Finally, the environmentalists claim that if society wastes less energy, and develops the means to use the energy more efficiency, then there would be a definite decrease in the requirement for more energy producing plants. On the other hand, some business men and economists say that the present conditions should be kept intact, as the other forms of energy, e.g. oil, natural gas and coal, are only temporary, in dealing with surplus, and give off more pollution with less economic growth.

Concurrently, countries wanted a more reliable, smokeless form of energy not controlled by OPEC, and very little uranium was required to produce such a high amount of resultant energy. Lastly, they said that renewable energy is (a) unreliable in that the wind, for example, could not be depended upon to blow, nor the sun to shine, and (b) were intermittent in that a 1,000 megawatt solar farm may occupy about 5,000 acres of land, compared with less than 150 acres of land for a similar capacity nuclear power generation station.

Because the energy technology that society employs directly influences the quantity and quality of life, the energy option that is chosen should have the greatest cost- benefit effectiveness as well as maximizing flexibility and purchases. However, those who believe in continuous energy consumption growth, seem to forget that there is only a limited supply of energy in every energy system, and to 'overdo' any resource may provide for an unacceptable impact upon global and regional ecology. Thus, if the business world pushes the environment as far as it can go, *Ceribus Paribus*, please refer to figure 1. Thus, to use petroleum as a substitute for uranium, which is needed to power the nuclear system, would not be economically or environmentally

sensible. I say this because, first of all, there is a major supply of uranium considering it was one of the last energy sources to be found as well as only a small amount of it is required to produce a lot of energy. Secondly, petroleum gives off carbon monoxide which is one of the reasons for ozone depletion; whereas, the uranium does not give off pollution except that it produces plutonium which needs to be buried for more than fifty years to get rid of its radiation.

Finally, because so much of the petroleum will be required to power the vast area that nuclear energy can cover, the cost to us as the consumer would be massive! This would mean slower economic growth and/or expansion, especially when compared to nuclear energy. Therefore: *Ceribus Paribus* - (a) if the cost decreases, the demand increases, and - (b) if the cost increases, the demand decreases. Please refer to figures #2 and #3 respectively. Nuclear plants are now replacing coal burning plants. It will cost the taxpayers far more than they are currently paying for electricity.

However, industrial officials claim that since the plants have useful lifetimes, they will save the consumers money in the long run. The problem with this is that this depends on hard to predict factors, such as the future price of oil and the national demand for electricity. It should also be noted that there is also a sharp jump in consumer costs when the plants are turned on to pay for the construction costs, plant manufacturers or other loan sources, plus interest. Thus, the cost of electricity may go up three-fold. New plants usually supply substantially more energy than the area requires; meaning that the consumer will be paying for this waste of energy, which is cost per kilowatt hour. It should also be noted that some plants are canceled during construction, which can raise the cost up to several billion dollars. This is absorbed by the government through tax laws, shareholders, and rate payers; and is considering the fact there is a continual rise in construction prices and a decrease in costs of alternative fuels, many utilities cancel plants, when almost half completed. (Late cancellation cost is an increase in the proportion to the amount that has been invested.)

Albert Schweitzer, an ecologist wrote, nuclear power 'threatens the present and forecloses the future. It is unethical, and inferior to non-fission futures that enhance survival for humans, alive and yet to be born, and nature, with all its living entities.' Therefore, in conclusion, it is clearly evident why nuclear energy should be abandoned, even though it may be considered as economically sound, and that we should concentrate more on conservation and quality rather than expansion as we have done in the past.