

Vinyl 2010 Essay Competition Submission Template

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Summary:

Food and energy crises are inter-related and any attempt to increase energy production through biofuels or other forms of energy at the expense of food exacerbates the already existing food crisis. Energy management, pursuance of green energy, interest in biotechnology to produce GM foods and technological innovation of products which do not depend on oil could be the way forward.

Essay:

Energy crisis refers to a prolonged shortage of oil, electricity and other natural resources. Similarly, food crisis refers to a prolonged shortage of food distribution. The two terms, food and energy, are related in a sense that modern day food production depends on oil, in the form of fertilizers and pesticides, energy for conveying and processing farm products.

Let us look at major current energy and food crises globally. Oil price has escalated as at 2003 and the cause of this escalation in oil price can be blamed on the decline in oil production due to U.S invasion of Iraq. Iraq is the third largest oil reserve in the world falling behind Saudi Arabia and Iran. Another reason for the escalation in oil price is increased demand from the U.S and China and India. The per capita energy consumption of countries such as China and India, and other developing countries continue to be on the rise as people adopt more energy intensive lifestyles. The world's population continues to grow at a quarter of a million per day, leading to increased consumption of energy which ultimately leads to price escalation in oil prices. Another crisis is the 2008 central Asia crisis caused by extreme cold temperature and low water level in areas dependent on hydro-electric power. There is also electrical energy crisis in South Africa which could last up to 2012. The crisis in South Africa will lead to a rise in price of platinum and reduced gold production. Concerning food crisis, almost 60 % of the world's population are malnourished.

Bio-fuel has been hailed as a clean, renewable energy option that can reduce industrial nations' emissions of greenhouse gases responsible for global warming. This however, creates a paradox for poorer countries struggling with high food prices. The U.S for example, in an attempt to reduce her heavy dependence on oil has shifted to biofuel production as an alternative source of energy that is mostly made from food crops. Ethanol, a biofuel, which the Bush administration made a key element of its bid to reduce the heavy reliance of U.S on oil from foreign countries and other hostile countries are produced from maize, whiles Brazil produces ethanol from sugar cane. Other countries

use edible oils to produce diesel fuel. The World Bank stated that ethanol produced from U.S ate up nearly all of the increased global maize production from 2004-7 which led to a rise in the price of maize and they have gone on to state that a boost in bio-fuels production is largely to blame for an 83 percent increase in food prices over the last three years. As a result of rise in prices of food, many social unrests have occurred, for example in Haiti, where at least 5 people died in food riots. Again, current food crisis could cause social unrests among 32 nations according to the World Bank

The question is, is there any policy justification for the richer nations shifting to bio-fuels? The answer is emphatic no! Growing crops such as corn, soya bean and sugarcane for biofuel use water and energy sources. These energy sources and water are very important for the production of food for human consumption. Professor Pimentel et al look at the efficiency and cost associated with converting a range of crops into biofuels in the U.S. In their paper, more energy is used in the process of converting food crops into biofuels than the final energy obtained from the biofuels. The research revealed negative energy return of 46 percent for corn ethanol, 50 percent for switch grass, 63 percent for soya bean biodiesel and 58 percent for rape seed. The most promising palm oil production even resulted in a net energy return of negative 8. In addition to the negative returns from these biofuels, there are also environmental concerns linked to the conversion of these food crops to biofuels. These concerns include water pollution from fertilizers and pesticides used to produce the food crops for the biofuel production, global warming and air pollution

So what is the way forward? Do we produce more biofuels in order to exacerbate food crisis? I believe the answer is no! Efficient mechanisms such as Negawatt power will encourage a more efficient use of electricity. That is, increased efficiency from suppliers could be traded off with consumption efficiency on the side of consumers. In that case, less or no biofuels may not be produced to supplement out depleting fossil fuel reserves. Green energy such as fuel cell technology, liquid nitrogen, hydrogen fuel, solar energy, geothermal energy, tidal energy, wind energy, fusion power, wave power, etc. can also be exploited through intensive research. Currently, only hydro-electricity and nuclear power are significant alternatives to fossil fuel. Hydrogen gas is currently produced at a net energy loss from natural gas whose production is on the decline in North America. When hydrogen is not produced from natural gas, it still needs other source of energy for its creation which gives a net negative energy return. The United States and other countries could also emulate Argentina by raising cattle which depend on grass instead of grain. New products which do not depend much on oil could be introduced into the market to conserve the already depleting fossil fuel. For example, innovations like folding bicycle, railway electrification systems, electrifying passenger transports are some of the innovative products which do not depend on oil or depend less on oil. Genetically modified (GM) foods could also be encouraged and consumers should be educated more on GM foods to help solve starvation in poorer countries.

Reference:

Articles: Pimentel D et al (2009). Food versus biofuels: environmental and economic costs. Human Ecology DOI 10.1007/s10745-009-9215-8.In.Food or Energy? The Biofuel Food Crisis Debate