

## Energy, Climate and Environment; Research and Innovative Perspectives

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### **Abstract**

It is a most alarming time for the state of the planet and human wellbeing. The number of people living on the planet has never been higher, their levels of consumption are growing and changes are taking place in the environment. Humans impact the environment in several ways. Common effects include decreased water quality, increased pollution and greenhouse gas emissions, depletion of natural resources and contribution to global climate change. Also our civilization and our standard of living depend on an adequate supply of energy. The main sources of energy are non-renewable which have been used over centuries. But now there has been the development of alternative energy due to energy crisis.

**Keywords-** climate change, environment, alternate energy, sustainable development.

### **INTRODUCTION**

People and the planet explored the rapid and widespread changes in the world's human population which, coupled with unprecedented levels of consumption, present profound challenges to the natural environment. Scientists know that recent climate change is largely caused by human activities.

If emissions continue on their present trajectory, then warming of 2.6 to 4.8 °C (4.7 to 8.6 °F), in addition to the 0.8 °C which has already occurred, would be expected by the end of the 21st century. Global warming of just a few degrees will be associated with widespread changes in regional and local temperature and rainfall. Climate change is also likely to affect the frequency and severity of extreme weather events such as floods, droughts and heat waves. A report resilience to extreme weather shows how and where these might change, analyses options which can protect communities from these hazards and recommends policy changes to build broad resilience. Decision makers need to take action to address these environmental challenges if they are to place the world on a more sustainable development path. Unsustainable consumption in the most developed and the emerging economies must be reduced. Global population growth needs to be slowed and stabilized through voluntary family planning and education. Mitigating actions, in particular reducing greenhouse gas emissions, would reduce the impact of climate change.

### **Reasons for Climate Change**

According to the U.S. Environmental Protection Agency, human activities are largely responsible for an increase in temperature around the globe, primarily due to carbon dioxide and other greenhouse gas emissions. This increase in temperature is leading to changes in where crops can grow and where certain fish or animals can be found, all vital for feeding an increasing human population. The rise in global temperatures is also causing glaciers to melt, releasing

water that causes sea levels to rise and threaten coastal communities and economies that rely on coastal resources.

Climate change is generally more gradual than habitat destruction, but it threatens ecosystem biodiversity because climate strongly influences the kinds of organisms that have adapted to each ecosystem. Average global temperatures are predicted to rise by up to 4°C by 2100, and most scientists argue that the increase in atmospheric carbon dioxide and methane from combustion and the burning of fossil fuels strongly exacerbates this. Overall climate pattern changes, including changes in precipitation, jeopardize food and water sources, negatively impact breeding and nesting habits, change species' geographic ranges, increase drought in some areas and flooding in others, alter competition patterns in species and pose other problems. Although climate change is relatively gradual compared to some factors affecting biodiversity, it is becoming more rapid and may be proceeding too swiftly for many native species to adapt.

In a 2011 report to United Nations member states, an international panel of scientists concluded that the magnitude of negative impacts to the oceans has been underestimated, and the speed of ocean degradation is now happening at a rate far greater than predicted. The cumulative impacts of warming and acidification, coupled with stressors from other human activities, including overfishing and pollution, have resulted in a dramatic decline in the health of the world's oceans. Perhaps most sobering, the panel warned that current conditions mirror those of every previous major extinction of species, a signal that marine life could be headed to a new mass extinction event, unprecedented in human history.

### **Energy Conservation**

Industrial development has been founded on cheap and abundant energy from burning fossil fuels. The consequent release of greenhouse gas emissions into the atmosphere has led to measurable changes to Earth's climate. There is no single solution to sustainably and affordably meeting the world's energy requirements in the next century. Instead a diverse range of technologies such as nuclear, wind, marine, solar and carbon capture and storage will be needed.

Alternate energy is an interesting concept which can be thought about. In our global society, it simply means energy that is produced from sources other than our primary energy supply fossil fuels. Coal, oil and natural gas are the three kinds of fossil fuels that we have mostly depended on for our energy needs, from home heating and electricity to fuel for our automobiles and mass transportation.

The problem is fossil fuels are non-renewable. They are limited in supply and will one day be depleted. There is no escaping this conclusion. Fossil fuels formed from plants and animals that lived hundreds of millions of years ago and became buried way underneath the Earth's surface where their remains collectively transformed into the combustible materials we use for fuel. Despite the promise of alternative energy sources — more appropriately called renewable energy, collectively they provide only about 7percent of the world's energy needs (Source: Energy Information Agency). This means that fossil fuels, along with nuclear energy— a controversial, non-renewable energy source— is supplying 93percent of the world's energy resources.

Nuclear energy, which is primarily generated by splitting atoms, only provides 6percent of the world's energy supplies. Still, nuclear energy is not likely to be a major source of world energy consumption because of public pressure and the relative dangers associated with unleashing the power of the atom.

## **Conclusion**

This critical situation of the world in which one side human activities are affecting the environment which leads to certain changes, on the other side these changes are effecting the humans back. So humans should think and act sustainably for their own wellbeing and also for the future generation.

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