

# POLICY IMPERATIVES FOR MULTIPLYING ENERGY OPTIONS

**Nirupa Jain**

Researcher and Writer in the field of Renewable Energy

**Dr. Trilok Kumar Jain**

Professor, Researcher and Writer in the Field of Social Entrepreneurship and Social Innovation

jain.tk@gmail.com

## *Abstract*

*This is a conceptual discussion on possible challenges and options to prepare for the impending energy crisis. India has to prepare itself for the rising energy requirements and prepare for the future. The paper explores different possibilities and recommends the use of agriculture waste in bio-fuel production.*

**Keywords:** energy, crisis, future, challenges

Europe, China and a few other countries are witnessing “Energy Crisis” which is a situation of shortage of energy. Factories are closed, there are substantial challenges ahead due to this situation. Prices of natural gas and petroleum products are rising. There seems to be a situation for which we were not prepared. Did we make a mistake in planning? Were we unable to anticipate this situation? Are there any quick solutions? The answer is that there is no quick solution. The present situation could have been anticipated and could have been averted. Can we anticipate similar situations in future? The answer is yes, and we should actually prepare ourselves and avoid such situations.

Policy makers have an important role to play in bringing desired changes in laws and regulations. Government policies and support measures can change the directions for the future. Policy makers can completely change economies in a few decades through their policies and support mechanisms. We have witnessed transformation of many economies due to changes in policies and procedures. Governments can play an important role for creating the desired framework for development and growth.

As per sustainable development goal framework, every government must strive to achieve inclusive and sustainable development. Every government must prepare its action plan and proceed in the direction of sustainable development. Every government must strive to bring about desired changes in economic system. Governments must invest into planning and development.

Let us take ourselves fifty years ahead. Let us try to imagine the future. The future will not be present, in the same way as the present is not the past. Future will be different. The difference will be radical. The pace of change is now accelerating, and it will result in dramatic changes which are unthinkable now. We have to extend our imagination beyond the present day thinking to visualize the future. The future that we visualize is based on the assumptions and ideas about the future.

Energy is the backbone of our civilization, and its role is increasing every day. We may never be able to get ourselves detached from this resource. We have to prepare ourselves for the future which will offer us greater opportunities in energy sector. Energy consumption will increase manyfold, and it will become the most important pillar in our economic activities.

The existing sources of energy are all finite, and they will be exhausted when energy consumption increases at an accelerating pace. The civilization of the future will require massive energy - which will be many times more than the present. Thus, there will be many new sources of energy.

The future of our civilization depends on our ability to invent, develop, and expand our energy resources. A few resources like solar energy, wind energy etc. will continue to grow and support us. However, we will need many new sources of energy to be able to enter the world of the future.

There is a need to think about all possibilities that may happen in the future due to rising demand of energy and reducing supply of energy. A few instances of energy blackouts have already taken place. There will be many such instances. It will become difficult for our country to prepare instantly. Substantially planning and policy making is required to be prepared for the energy crisis of the future. Such instances are difficult to predict at present, but with the use of advanced simulation applications, it would be possible to prepare alternate scenarios and plan accordingly. There is a need to plan ahead and prepare for the different possibilities of disasters.

While the present is based on the past, but the future need not be based on the present. The energy sources available to us are depleting and will not be available in the future. Therefore, there is a need to explore new sources of energy. Years back, we were dependent on wood as a source of energy. Petroleum products dominated our energy requirements during last few decades. But the future will be based on some other sources of energy. We have to start supporting research, development, and manufacturing in new sources of energy. We have to fund some new sources which would meet our growing energy requirements. Some possible options are: -

- a. Solar energy
- b. Wind energy
- c. Biofuel
- d. Energy generation from waste
- e. Energy generation from ocean currents

The government has already taken a lead in solar energy and wind energy sectors. A large number of companies are investing into solar energy and wind energy. This is a positive indication. However, solar energy has its own limitations. Major expansion of these sectors will be at the cost of agriculture land. Reduction in agriculture land will become a source of another food crisis. We have to ensure that agriculture should not be compromised. Large energy plants are being established in western Rajasthan. The argument given is that this land is at present un-cultivable land. However, in future, this land would be converted into arable land and would help in meeting the rising food demand. There is a need to restraint any conversion of agriculture land into alternate uses.

Biofuel is very important source of energy. Biodiesel can easily be produced. A large number of plants and vegetations can become very rich source of biofuel. Thus, there is a huge potential in this sector. There is a need to invest into development of this sector. The production costs will fall substantially if there is mass-scale bio-fuel production and mass-scale refineries.

While agriculture waste is causing huge pollution and difficulties, it will become an asset for us in the form of principal source of energy. There is a need to invest into development of technologies which can reduce the cost of producing energy from the agriculture waste. Subsidies and government support can enable this transformation.

Development of biofuel will enable us to gain competitive advantage in context of sustainable development goals (Ghosh et al., 2019). It is pertinent for every country to scale up bio-fuel production to replace fossil fuel. Agricultural crops can be used to produce biofuels. (Darda, et al., 2019). Agriculture wastes are burnt and discarded, which are causing air pollution. There is a need to subsidize bio-fuel production from agriculture waste.

## CONCLUSION

There is an impending crisis due to rising consumption of energy. Fossil fuel will exhaust. There has to be a policy shift to finance and support new sources of energy. Biofuels can become an important source of energy. It will require investment in technologies. Agriculture waste can be used in production of biofuel. The cost per unit is very high at the present, but it will fall substantially if we scale up the production.

## REFERENCES

- Darda, S., Papalas, T., & Zabaniotou, A. (2019). Biofuels journey in Europe: currently the way to low carbon economy sustainability is still a challenge. *Journal of cleaner production*, 208, 575-588.
- Ghosh, P., Westhoff, P., & Debnath, D. (2019). Biofuels, food security, and sustainability. In *Biofuels, Bioenergy and Food Security* (pp. 211-229). Academic Press.
- Adewuyi, A. (2020). Challenges and prospects of renewable energy in Nigeria: A case of bioethanol and biodiesel production. *Energy Reports*.