

Renewable Energy Resource from Textile Industry Waste

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Energy access and availability are fundamental for individual consumers' quality of life, economic growth, and employment opportunities. Increased energy supply and consumption lead to improved economic development and higher living standard. The human development index of a country is directly proportional to its energy prosperity. A shortage in the energy supply is a barrier to the development, economic growth, and prosperity of a country and adversely affects its environment, water availability, the agricultural productivity and human health. However, the increasing consumption of non-renewable fossil fuels also negatively affects a country's development because of exposure of its population to the adverse impacts of climate change. According to the International Energy Agency, the per capita electricity consumption in developed countries is markedly higher than that in other countries, resulting in the release of greater amounts of greenhouse gases such as methane, carbon dioxide, and sulphur dioxide into the atmosphere. This, in turn, results in environmental problems such as air pollution, deforestation, global warming, and climate change, and also inflicts several respiratory diseases. Despite these serious environmental threats, the world still consumes non-renewable energy sources on a large scale. In this context, awareness of climate change and resource depletion has been raised considerably by international treaties and protocols like the Kyoto Protocol and the Copenhagen Summit, which encourage the world to gradually shift to renewable energy sources to reduce greenhouse gas emissions. Today, many countries exploit such sustainable and environment-friendly renewable energy sources such as biogas and solar and wind energy systems. In India, biogas is familiar to residents of rural areas, where it is produced from biomass through the process of anaerobic digestion. On a global scale, biogas provides nearly 16% of primary energy, and it is the fourth largest energy source. However, the challenge to environmentalists is to increase the adoption of biogas technology, which is influenced by various factors in different countries. Previous researchers developed a new strategy for the biological transformation of such sugar containing sugar cane waste from sugar cane industries convert to produce methane. In Tamil Nadu, particularly in Tirupur and Chennai the textile industries are developing fast due to several benefits but on the other side it is one main reason for causes of environmental pollution. Generally the textile industries huge amount of pollution is released in all stage of processing like fibre and fabrics. Previous researchers suggested that the 90,000 tons of dyes used in various industries, paper mills, cosmetics, etc. But the textile industries only division alone consumes the total dyes generation. At present this effluent waste is not put into any uses except to some extent, as compost for cultivating some vegetables. Mostly, it is deposited through by burning. This is a causes may increase the carbon dioxide level in the atmosphere and also pollute the environment. The problems mentioned above can be solved using biogas technology. Therefore the biogas is a renewable source of energy which is obtained as a result of using industrial waste as a source. Hence, the waste disposal occurs, industrial effluent gets converted into biogas which is a renewable source of energy.

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