Journal of Advances and Scholarly Researches in Allied Education
Vol. 16, Issue No. 4, March-2019, ISSN 2230-7540

Assessment of Power Generation Potential By Using Combination of Non Woody Biomass Species Namely Gulmohar And Cassia Tora Separately With Coal Briquette in Four Varying Ratios – A Review

Kanhaiya Kumar[1]* Dr. M. K. Chopra[2]

[1] M. Tech (Thermal)

[2] Assistant Professor, MBIT Engineering College, Forbesganj, Araria, Bihar

Vice Principal Dean Academic & HOD, RKDF College, Bhopal

Abstract – Biomass is more economically viable for almost all the continents in the world. Biomass is a carbonaceous material and provides both the thermal energy and reduction for oxides, where as other renewable energy sources can meet our thermal need only. There are various types of renewable energy sources available such as solar, wind, hydropower, biomass energy etc. Biomass power generation in India is an industry that attracts investments of over Rs.600 crores every year, generating more than 5000 million units of electricity and yearly employment of more than 10 million man-days in the rural areas.

Keyword: Proximate Analysis, Ash Fusion Temperature, Electricity Generation, Energy Content, Non-Woody Biomass Species

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I. INTRODUCTION

Biomass is organic material that comes from plants and animals, and it's a renewable supply of energy. Biomass contains keep energy from the sun. Plants absorb the sun's energy during a method referred to as photosynthesis. Once biomass is burned, the energy in biomass is released as heat. Biomass may be burned directly or converted to liquid biofuels or biogas that may be burned as fuels. The term "biomass" refers to organic matter that has keep energy through the method of photosynthesis. It exists in one kind as plants and will be transferred through the food chain to animals' bodies and their wastes, all of which might be converted for everyday human use through processes like Combustion, that releases the CO2 keep within the plant material. Several of the biomass fuels used nowadays is available in the form of wood product, dried vegetation, crop residues, and aquatic plants. Biomass has become one among the most usually used renewable sources of energy within the last two decades, second solely to hydropower within the generation of electricity. it's such a wide utilized supply of energy, most likely because of its low price and indigenous nature, that it accounts for pretty much 15% of the world's total energy provide and the maximum amount as 35% in developing countries, principally for cooking and heating.

II. BIOMASSANDBIO-ENERGY

The Biomass is renewable organic matter derived from trees, plants, crops or from human, animal, municipal and industrial wastes. Biomass is often classified into 2 sorts, woody and non-woody. Woody biomass comes from forests, plantations and forestry residues. Non-woody biomass includes agricultural and agro industrial residues and animal, municipal and industrial wastes. Biomass doesn't add dioxide to the atmosphere because it absorbs an equivalent amount of carbon in growing because it releases once consumed as a fuel. Its advantage is that it are often accustomed generate electricity with an equivalent equipment that's currently being employed for burning fossil fuels. Biomass is a vital supply of energy and also the most vital fuel worldwide once coal, oil and fossil fuel. Bio-energy, within the style of biogas that comes from biomass is expected to become

one among the key energy resources for international property development. Biomass offers higher energy efficiency through style of Biogas than by direct burning. Biomass contains hold on energy from the sun. The energy in plants gets passed on to animals and other people who eat these plants. Biomass could be a renewable energy supply as a result of we can continuously grow additional trees and crops and waste will continuously exist. Some samples of biomass fuels are wood, crops, manure and a few garbage. Once burned, the energy in biomass is free as heat. During a hearth, the wood that's burnt could be a biomass fuel. Wood waste or garbage can is burnt to provide steam for creating electricity, or to produce heat to industries and houses. Burning biomass isn't the sole way to release its energy. Biomass are often regenerate to alternative usable varieties of energy like paraffin gas or transportation fuels like grain alcohol and biodiesel. Crops like corn and sugar cane are often hard to provide the transportation fuel, ethanol. Biodiesel, another transportation fuel, are often made from left- over food product like vegetable oils and animal fats. Biomass fuels offer concerning three percent of the energy employed in the us. Individuals in USA try to develop ways in which to burn additional biomass and less fuel. Using biomass for energy will cut back on waste and support agricultural product full-grown within the us. Biomass fuels even have variety of environmental advantages.

III. LITERATURE REVIEW

J.C. Boudri et al. developed a completely unique approach to evaluate the price effectiveness of renewable sources of energy in pollution abatement in Asia. Our analyses show that renewable energy sources give sulfur- and carbon free alternatives to traditional fuel provides. We tend to use the RAINS-ASIA model to explore SO2-emission control-strategies for China and Republic of India for the approaching 20 years. All ways explored during this study aim at cost optimal allocation of emission reduction measures across the assorted emission sources in Asian countries to attain environmental targets. The RAINS-ASIA approach demonstrates that optimization analysis could help finding efficient ways for pollution abatement. It ought to be stressed that the choice of a target may be a political, not a scientific choice.

Ayhan Demirbas describes the potential applications of renewable energy sources to replace fuel combustion because the prime energy sources in varied countries, and discusses issues related to biomass combustion in boiler power systems. Here, the term biomass includes organic matter made as results of photosynthesis also as municipal, industrial and animal waste matter. Transient summaries of the essential ideas concerned within the combustion of biomass fuels are conferred.

Jose Goldemberg et al. Renewable energy is basic to reduce poorness and to permit sustainable development. However, the construct of renewable energy should be carefully established, significantly within the case of biomass. This paper analyses the property of biomass, comparison the supposed ‘‘traditional’’ and ‘‘modern’’ biomass, and discusses the requirement for statistical data, which can permit the elaboration of situations relevant to renewable energy targets within the world.

IV. CONCLUSION

In the present work 2 non-woody biomass species Gulmohar and Cassia tora were elect. Experiments to see the proximate analysis, calorific values and ash fusion temperature was done on every of the parts of the chosen species like main wood; leaf and nascent branch were performed. Estimation was done to analyse what quantity power will be generated in one hectare of land from every of those species.

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Corresponding Author

Kanhaiya Kumar*

M. Tech (Thermal)