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It's Time to be the Bio-Energised World

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Abstract – 'Energy' is the only element of entire civilization prospects since Stone Age of man. It is no doubt to say that, human being is moving towards success mile stones with the major contribution of energy only. In the present study, a caution basis evaluation is done for signalling the people, firms, systems and nations about the realistic developmental signs. The analysis results that unless creating the awareness from households to end of the earth boarders, it is simply impossible to aware and convert the habit of traditional fossil fuel utilization for energy generation to bioenergy generating societies.

Keywords – Exploitation, fossil fuels, biomass and bioenergy

I. INTRODUCTION

If the countries, firms and individuals are showing one-upmanship in energy generation contest by exploiting fossil fuels like coal and other resources of energy production, one day will come very soon, darkness spread over the globe. At that time no alternative chance will be leftover/ workout, because by complete exploitation of fossil fuels a huge damage will be occurred to the Earth's eco balance system. Eco balance is very important for making the world as living compatible for human beings, creatures and plants & trees. By damaging eco balance, the greenery will be turned in to desert quicker & quicker in some places and floods will come to washout the living hood in some places, the average atmospheric temperature will be moved in an upward direction so that the average sea level will be increased and hence some islands and creatures will be disappeared very soon.

Bioenergy is the exact alternative opportunity to generate required amount of electricity over traditional dependency on fossil fuels. Here in this study, out of all non traditional energy generating sources like solar, wind, small hydro and bioenergy, only biomass based energy is highlighted. The Global population is still rising in an exponential manner. Everyday 80 million births have been happening on the earth.[1]

As population increases, the required amount of food and other necessities are also increasing. Wastage generation is also increasing in same passion like population. Here wastage means, crop wastages, utility wastages etc. it is not possible to throw on the other planets. Instead it is best practice to use them as energy generating soruces.

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1.1 Definition of 'Biomass'

The left over part of the food crops, forest residues, food and utility wastages (municipal wastages) and sea plantations and wastages are considered as biomass. If these wastages are used as energy generation raw materials, then it will be helpful to the society in both the ways. One is electricity generation and second is waste management mechanism.

1.2 Objectives of the study

- To study the impact of natural resources exploitation for energy generation
- To find the permanent and multiple utility based alternative energy generation source.

II. REVIEW OF LITERATURE

Andrew Welfle, Paul Gilbert and Patricia Thornley have pointed out about the UK's projected biomass resource availability under different future contexts and constraints. For this purpose, they have used the technique of biomass resource model (BRM) in which they have used the land use & availability analysis, biomass resource availability and indigenous bioenergy potential.

They have explored four forecast techniques of potential pathways that will take UK to 2050, and measures the biomass resource availability and potential for the bioenergy sector. They are food scenario—where importance on UK's food security and productivity were stretched like increasing crop yield productivity, decreasing food waste, reduced food imports, replaced by domestic growth, emphasis on agriculture over forestry expansion, the dedication of available land for agriculture ahead of bioenergy crop growth. **Economic focus scenario**—where the UK places future emphasis on economic growth and resource demand and supply status with the bioenergy sector occurs like reduced restrictions on built-up area expansion, increased focus on forestry expansion and productivity

utilisation of forestry residues, increased exportation rates of food commodities and forestry products waste generation rates driven by economic growth and technological advancement; **conservation focus scenario**—increased emphasis on conservation & resource protection, restricted expansion of built-up land area, increased focus on forestry expansion and preservation, lower limit utilisation of forestry & agricultural residues for energy, decreased levels of waste generation, waste management strategies focusing on resource recovery, reduced dedication of available land for bioenergy crop growth where the conservation of land, biodiversity and resources are prioritised; **energy focus scenario**— focus on enhancing and expanding the bioenergy sector, increased dedication of available land for bioenergy crop growth, increasing focus on forestry expansion and productivity, increased utilisation of forestry residues,

agricultural residues and arboriculture arising where the UK places future focus on developing the bioenergy sector and mobilising biomass resource to meet energy/bioenergy targets. [2]

Ayhan Demirbas has highlighted the various types of bio fuels which can be converted by using biomass. They are bio-ethanol and bio-methanol which are considered as alternatives or additives to petroleum products. The other products from biomass are biodiesel, vegetable oils, biogas, bio-oil, bio-char, bio-synthetic gas and bio-hydrogen.

He has pointed out the benefits of biomass bulk utility on a futuristic basis are- energy security reasons, environmental concerns, foreign exchange savings, and socioeconomic issues related to the rural sector. [3]

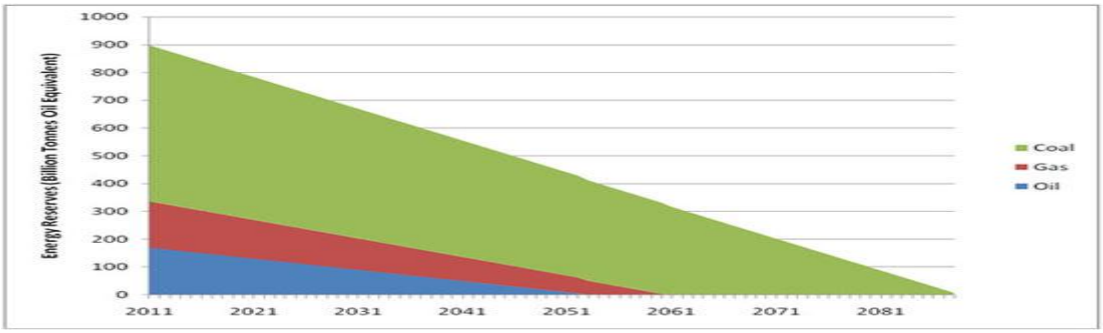
Bishnu Raj Upreti has aimed to examine the causes of conflict over biomass energy development in the United Kingdom. He has discussed social dimensions of development of biomass power plants. He has attempted to examine this issue in greater depth with the objectives to explore the main concerns of the public, to identify factors contributing to conflict over biomass energy development and to navigate in a right direction from past experience studies for the future course of action. His study has revealed that public opposition is one of the major obstacles to promote biomass energy. Main causes of public conflict over biomass energy development were related to the location of the plant, perceived risks, and negative effects on ecology and landscape compared to few economic benefits to local people. Other factors contributing to the conflict were feeling of injustice, weak public relations with the developers and low level of awareness. He disclosed some reasons for rejection of bioenergy plants in the UK like, North Wiltshire Biomass Power Plant (NWBPP), Cricklade was rejected due to that it has almost covered the openness of the rural landscape, resulting in a loss of countryside creating an inappropriate form of major development in the rural buffer and contradicts with local plans and it would cause demonstrable harm to the amenity and rural character of the countryside, significantly impacting on the open landscape of the area by virtue of the proposal's scale and design contrary to the provisions of local plans.

Integrated Wood Processing Plant, New bridge located in Wales was rejected because of a significant increase in the use of existing access leading to increasing in a number of traffic movement that caused the existing potential hazards and lack of detail environmental assessment, potential negative impacts on the sensitive ecology of the area and harmful effects to the environment. Finally the reasons for rejection of Elean Power Station (EPS) were pollution due to the proposed use of municipal waste, visual impact (height of the boiler house), traffic pressure and associated risks, noise, environmental and landscape impacts. [4]

Carlo Ingrao, Jacopo Bacenetti, Alberto Bezama, Vincent Blok, JuttaGeldermann, PietroGoglio, Emmanuel G. Koukios, Marcus Lindner, Thomas Nemecek, Valentina Siracusa, Anastasia Zabaniotou and Donald Huisingh have addressed about bio-economies, which are having sustainable, post-fossil, equally balanced characteristics. They have stated that these bio-economies must have indicators of controlled GHG emissions and almost arresting the utility of fossil fuels in energy generation. They said that, it is the time to think about each activity, utility with long standing nature about benefits and consequences. [5]

III. ANALYSIS AND INTERPRETATION

Traditionally countries and their technologies are dependable on utility of fossil fuels to generate energy. The amount of energy generation is increased day by day with the utilization of fossil fuels. Then a question to be raised that - how long it will be feasible to exploit fossil fuels to generate energy? The answer is – we don't have much opportunity to exploit these fossil fuels and we haven't invented much bigger other resources of existing sources of energy generation.



Source: https://www.ecotricity.co.uk/our-green-energy/energy-independence/the-end-of-fossil-fuels

*MG=moyennegenerale#DM = Devoirs maison

Oil reserves are the best example that supports the above statement: 16 of the 20 largest oil wells have reached to peak level of production. The second challenge in front of the society is to keep the increase in global warming below the 1.5°C per year; it is the urgency to leave up to 80% of reserves of fossil fuel for the sake of the natural balance.

From the above diagram, it is clear that the oil reserves will be completely exhausted very quickly out of three fossil fuels, as the availability also lesser than remaining fossil resources.

It is estimated that, if we exploit with current pace, then at the rate of 2050, the total oil reserves will be completed.

The next fossil fuel is 'gas', which is also having lesser importance than oil but more valuable than coal. If we use gas for energy production with current pace, it results of complete exhausted situation around 2061.

The final and the serving fossil fuel since hundreds of years is 'coal', as many developing and developed countries are entirely rely on producing thermal energy to satisfy their current energy demands. If we exploit with current pace, it results the status of complete exhausting position around the year 2085.

Pitfalls of using fossil fuels

- Carbon emissions
- Air pollution
- Ocean pollution
- Habitat destruction
- Transportation costs of fossil fuels

Out of all the Renewable energy sources – why we need to choose biomass for energy generation?

At some places on the earth, it is not possible to find the relevant amount of sunlight to produce solar energy continuously and consistently. Wind energy production is also not possible in all the areas on the earth, transmission losses happen while transmitting from the producing areas to necessitated places.

Coming to the part of biomass, it is available at almost all the places in various forms and available continuously and consistently. The challenge in front of the governments is that choosing appropriate level of technologies according to biomass availability.

IV. FINDINGS & SUGGESTIONS

From the above diagram and its interpretation, it is clear that we, traditionally dependent on fossil fuels to generate electricity. There are lot of hurdles like economic barriers, technological barriers, psychological barriers and policy formulation barriers to turn up to the completely bio-energised world. Even governments don't have such greater courage to flip the entire existing traditional situations in any area of society in a single movement. But now it is the time to adopt the new culture of bioenergy markets rather than traditional energy markets forcefully, so that we can leave 'something' valuable to the next generations.

Ayse Hilal Demirbas and Imren Demirbas have disclosed that, it is only possible to make the bioenergy as a promising alternative for fossil fuels, when a great cooperation will be achieved between rural bodies, people, producers and governments in all aspects of biomass, from cropping to energy generation stage. [6]

It is the primary responsibility of the States to facilitate a detailed picture of using fossil fuels and their drawbacks in front of the society, funding agencies (lenders), entrepreneurs, farmers and end users.

Simultaneously, benefit of bioenergy, and types of biomass which is useful for energy generation are to be explained to the above mentioned surrounded linkages.

Giving the appropriate level of subsidies to those farmers, who are ready to produce bioenergy suitable crop.

Creating awareness to the house holds about waste management, so that Municipal Solid Waste (MSW) electricity generating plants to be established at each crowded places of states.

The government needs to control the competition of the biomass purchasers, so that a steady supply chain mechanism can be build and creating a good market to the bioenergy, so that entrepreneurs will tend to show interest to start their bioenergy plant without risk.

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