Advanced Energy Resources

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Abstract: The consumption of energy increases due to population increased day by day. This is necessarily in each step of life. Energy resources are of two types, one is renewable energy sources and other is non renewable energy sources. But we know that non renewable sources will exhausted. The importance of renewable sources cannot be underestimated. According to utilization of renewable sources, the fundamental point is impact on environment. In this paper we discuss about the some pros and cons of renewable sources and future trends. In recent years, the more prices of fossil fuels and greenhouse effects have built the opportunities in the production of renewable energy resources. Renewable energy is considered a more better source of fuel than nuclear power now a days because they are more safe than non renewable energy sources.

Keywords: renewable, non renewable, Bio Mass Energy, Geothermal Energy, Hydroelectric Energy, Solar Energy, Wind Energy

I. INTRODUCTION

Renewable energy is the energy which is derived from a infinite source. Proper use and distribution of energy resources is the main concern these days. It is required to select where to use particular source of energy and its reason behind that particular usage. Factors such as cleanliness, cost, stability, efficiency and environmental effects must be taken into consideration. It is a sad truth that many industries around the world are still using fossil fuels for electricity production [3]. These fossil fuels are more widely used due to efficient power production, but they are not useful in long time. Fossil fuels may be depleted in nearby future, so the industries must change to renewable energy sources. Moreover, these fossil fuels provide a more environmental friendly and doesn’t cause ecological hazards. The renewable energy sources supply is increasing day by day[4]. Now a days more investment has been made and the advancement of technology has helped countries to produce renewable energy more cost effectively. Due to some negative and irreversible difficulties coming with conventional energy production, it is imperative to promote and develop renewable energy supply technologies and its cost effective distribution.[5]. These technologies may not be comparable with conventional fuels in terms of cost effectiveness, but they could be comparable if we consider their associated difficulties, such as their environmental and social effects. Also, it should be considerable that economies of scale could play a effective role in reducing the unit production cost. Here We discuss about the development of the main renewable energy supply techniques[6].

II. PROPOSED METHODOLOGY

1. Bio Mass Energy: Biomass is prepared from living organisms, such as plants and animals. Plants, wood, and waste are utilized as a most preferable biomass materials known as biomass feed stocks. It is also a renewable energy source. It is derived from sun. The sun’s energy absorb by plants by using a method of photosynthesis. It change carbon dioxide and water into glucose and oxygen. The energy from these organisms may be changed into usable energy by direct and indirect method[7]. Heat can be created by burning of biomass, changed into electricity (direct or by bio fuel). Biomass energy is available at cheaper cost and it does not harm the environment. It also controls the pollution of the environment. Biomass energy can be good renewable energy source for rural areas in India. Production of Biomass energy has huge scope for innovation and its application in remote & rural areas. We will need efficient resources, Sustainable, renewable, non-conventional and equally essential resources of energy is needed to fulfill the potential of India in the future. [1] The availability of biomass in the worldwide due to by-product of many industrial and agricultural processes[2]

WATER + CARBON DIOXIDE+SUN LIGHT =GLUCOSE+OXYGEN

Types of Biomass

Fig 1. Bio Mass Energy

2. Geothermal Energy: In 1904, Italian scientist Piero Ginori Conti invented the first geothermal electric power plant in which steam was used to generate the power. Geo, means earth, and thermal means heat. It is also renewable energy resources. The energy produced by heat below the Earth[8]. It is utilized to produce electricity, provide heat for buildings. It is clean due to produced without burning fossil fuels. The types are

1) Direct use and district heating systems method
2) Electricity generation power plants method
3) Geothermal heat pumps method[9]
3. Hydroelectric Energy: The first modern water turbine – the Francis turbine developed by British-American engineer James Francis in year 1849 – which remains the most widely-used water turbine in the world today. It, is a type of renewable energy that uses the water stored in rivers and dams to produce electricity in hydro power plants. In this the energy of falling water to generate electricity[10]. A turbine changes the kinetic energy of falling water into mechanical energy. Then a generator changes the mechanical energy from the turbine into electrical energy. It is used to produce electricity. Benefits for Business, Enabling Irrigation for Agriculture. There are three types of hydropower: impoundment, diversion, and pumped storage[11].

4. Solar Energy: The photovoltaic effect explains how electricity can be produced from sunlight discovered by Alexandre Edmond Becquerel in year 1839. The energy obtained through Sun and change it into electricity called Solar Energy. The use of sun energy as to light up our homes and streets., and power machines and cook food and heat water. The most common types of solar energy are Photovoltaic systems, Solar water heating systems, Solar power plants, Passive solar heating[12]

5. Wind Energy: In 1888, Cleveland, Ohio by Charles F. Brush invented the first electricity-generating wind turbine. Wind energy is a type of renewable energy. It does not contaminate, it is inexhaustible and reduces the use of fossil fuels, which are produce of greenhouse gasses that cause global warming. For these reasons, production of electricity by wind energy and its efficient use contributes to sustainable development. [13]
III. CONCLUSION

Renewable energy sources is new in our daily life. These sources are integral part of the energy. These sources are to reduce the environmental effects generated with non renewable energy sources eg. coal, oil and natural gas. These are money saving over the long time, but prevent the environment from the hazard of fossil fuel emissions. Awareness campaigns may be initiated at school and college level about the use of renewable sources. Moreover, power companies should gradually resort to the use of renewable resources as they are decline and will never deplete. Social media also help by writing articles on pros and cons of renewable energy resources. Education will be provided about renewable energy resources as a compulsory subject at each level.

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