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IMPORTANT GREEN TECHNOLOGIES FOR SAVE HUMAN HEALTH AND ENVIRONMENT

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ABSTRACT

Green Technology means that is eco-friendly and does not have any negative impact on the environment. Energy plays a central role in the global economy, and for more than a century one of the cheapest and most prevalent sources of energy has been fossil fuels-coal, oil, natural gas and the power generated from these fossil fuels. CPI analysis demonstrates that a transition to a low-carbon energy system could free up trillions of dollars over the next 20 year to invest in better economic growth. Solar energy panels and wind turbines generate zero emissions of pollution in their generation of electricity. Society can be benefited not only from shifting electricity generation off of a finite resource, but it can also be benefited from shifting to modern green technology. Developed and developing countries are drawing their attention to produce more energy and conserve it by newly developed green technologies which are not harming environment, making earth free from pollution and suitable for the life of human race. Nanotechnologies have made many devices such as catalytic converters in automobiles field that are used to remove pollutants. Other sources which are pollution free are hydro power, solar power, tidal power, geothermal power and biogas. Renewable sources of energy are only the alternatives of fossil fuels and C.N.G. i.e. Compressed Natural Gas is best alternative of the diesel. Our sources are fast depleting due to more industrialization, unequal distribution and growing population. Therefore it is requirement of sustainable use of resources. WHO estimated about 154,000 people died in India in 2005 only due to ambient fine particulate matter (PM 2.5). This number has now most likely increased.

KEYWORDS: Green Technology, Energy, Environment, pollution, population

INTRODUCTION

Green Technology means that is eco-friendly and does not have any negative impact on the environment. Energy plays a central role in the global economy, and for more than a century one of the cheapest and most prevalent sources of energy has been fossil fuels-coal, oil, natural gas and the power generated from these fossil fuels. CPI analysis demonstrates that a transition to a low –carbon energy system could free up trillions of dollars over the next 20 year to invest in better economic growth. Developed and developing countries are drawing their attention to produce more energy and conserve it by newly developed green technologies which are not harming environment , making earth free from pollution and suitable for the life of human race. Nanotechnologies have made many devices such as catalytic converters in automobiles field that are used to remove pollutants. Other sources which are pollution free are hydro power, solar power, tidal power, geothermal power and biogas Renewable sources of energy are only the alternatives of fossil fuels and C.N.G. i.e. Compressed Natural Gas is best alternative of the diesel. Our sources are fast depleting due to more industrialization, unequal distribution and growing population. Therefore it is requirement of sustainable use of resources. WHO estimated about 154,000 people died in India in2005 due to ambient fine particular matterPM2.5 alone, this number has now most likely increased.

GREEN TECHNOLOGIES

1. Production Of Biodiesel:-

Biodiesel fuel has been studied. Production of biodiesel occurs from non-edible oil. The essential part in this process is the trans esterification of the used non-edible oil methanol, using a base catalyst to yield an ester i.e. methyl ester as a product (Bio diesel) and glycerol as a byproduct which can be used

in soap production, in cosmetic industries and pharmaceutical industries. Biodiesel fuel produces no net output of carbon in the form of CO₂,as the oil crops the same amount of CO₂ as is released when the biodiesel combusted. Composition is Carbon 77%, Hydrogen 12% and Oxygen 11%.It is nontoxic, biodegradable and renewable source of energy. Environmental benefits of its use include lower exhaust emission of particulate matter and green house gases, such as CO,CO₂ and SO_x.Biodiesel is an environmentally friendly biofuel since its provides a means to recycleCO₂,biofuel does not contribute to global warming. It protects human health and environmental quality.

2. Biogas:-

Biogas is also known as GOBAR GAS which is obtained by anaerobic break down and fermentation of biomass.CompsitionCH₄ (Methane) 50-70% and CO₂ (Carbon dioxide) 30-40% with traces of hydrogen. In China million of small farmers are using such type of technology for the production of energy. Anaerobic digestion of sewage sludge and animal manure is biomass utilizing method which creates a valuable synergism between recycling and energy production. The Biogas is much better option for domestic fuel. Such technology also helps for maintaining clean India.

3. Botanical Remedy:-

Certain plants play very important role to make environment clean some of them increase the oxygen level where some of them are able to suck the harmful pollutants and decrease their concentration up to limit. Plants kept inside chambers are able to slowly degrade toxic substances and absorb them in their dense leaves. The following plants can be useful in removal of formaldehyde, benzene and carbon monoxide from air are

COMMONAME	BOTONICALNAME
Chinese Ever green	Aglaonema modestum
Bamboo Palm	Chamaedorea seifritzii
Heart leaf Philodendron	Philodendronscandens
Spider Plant	Chlorophytum sp.
Chrysanthemum	Chrysanthemum sp.
Peace lily	Spathiphyllum”MaunaLoa”
Gerbera daisy	Gerbera jamesonii
Boston fern	Nephrolepis exaltatabostoniensis

These plants can be used in decoration of indoor house and many other plants are also know for pollution control at their houses.

The average person who can't afford their own coal-powered power plant is generally capable of purchasing a home solar array or small. .

RENEWABLE ENERGY

It is generally better for the Environment Every year, power plants in the US alone put more than 2.5 million tons of CO₂, a major greenhouse gas, into the atmosphere. Fossil fuels are also responsible for a significant amount of land, water, and air pollution beyond their CO₂ production. For example, coal mining brings solid wastes to the surface that would normally remain underground and the areas around a mine can remain barren for generations if due to the lack of proper topsoil. The burning of coal for energy also produces many different types of particulate matter that pollute the air. The finest of these particles can be inhaled deeply and cause various respiratory health problems in people living around the power plant. These pollutants make their way into the water cycle and fall the ground as acid rain, which can destroy land and pollute large bodies of water.

Wind turbines can impact migrating bird species and dams can severely disrupt the ecology of surrounding areas. There is also an argument that renewable energy options are not as efficient as fossil fuels; however this is purely an economic argument. When one factors in the various non-financial costs of fossil fuel use such as pollution, climate change, and the impact on biodiversity, renewable energy is actually far more efficient than fossil fuels. There are a lot of good reasons to move toward the use of renewable energy both now and in the future. However, the most powerful of these arguments is simply that at some point you will no longer have the option.

Wave Energy-It is non exhaustly resource for the generation of electricity. In which a platform with sloping ramp collection basins and low head turbines is required to convert wave power into electricity. A Commercial wave powered plant is working near Bergen, Norway.

Hydroelectric Energy- It is most common nonpolluting commercial source of energy. Electricity is generated by turbines that run with the help of falling water. In U.S. About 300 large dams generate 9.5 of its total electrical power production.

Nanotechnologies have made many devices such as catalytic converters in automobiles field that are used to remove pollutants

SOLAR ENERGY FOR ELECTRICITY PRODUCTION

Solar power is the conversion of sunlight into electricity, either directly using photovoltaics or indirectly using concentrated solar power (CSP). CSP systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. Photovoltaic cells converts light into electric current using the photoelectric effect.

Solar power is anticipated to become the world's largest source of electricity by 2050, with solar photovoltaic cells and concentrated solar power contributing 16 and 11 percent to the global overall consumption, respectively.

Photo voltaic cells:-

In the last two decades, photovoltaic cells, also known as solar cell, has evolved from a pure niche market of small scale applications towards becoming a mainstream electricity source. A solar cell is a device that converts light directly into electricity using the photoelectric effect. The first solar cell was constructed by Charles Fritts in the 1880s

Concentrated solar power:-

Concentrating Solar Power (CSP) systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. The concentrated heat is then used as a heat source for a conventional power plant. A wide range of concentrating technologies exists; the most developed are the parabolic trough, the concentrating linear Fresnel reflector, the Stirling dish and the solar power tower. Various techniques are used to track the Sun and focus light. In all of these systems a working fluid is heated by the concentrated sunlight, and is then used for power generation or energy storage.

Application of solar Energy in Agriculture and horticulture:-

Agriculture and horticulture seek to optimize the capture of solar energy in order to optimize the productivity of plants. Techniques such as timed planting cycles, tailored row orientation, staggered heights between rows and the mixing of plant varieties can improve crop yields. While sunlight is generally considered a plentiful resource, the exceptions highlight the importance of solar energy to agriculture.

Greenhouses convert solar light to heat, enabling year-round production and the growth (in enclosed environments) of specialty crops and other plants not naturally suited to the local climate.

Production of Fuel by Solar Energy:-

Solar chemical, solar fuel and artificial photosynthesis Solar chemical processes use solar energy to drive chemical reactions. These processes offset energy that would otherwise come from a fossil fuel source and can also convert solar energy into storable and transportable fuels. Solar induced chemical reactions can be divided into thermo chemical or photochemical. A variety of fuels can be produced by artificial photosynthesis. The multi electron catalytic chemistry involved in making carbon-based fuels (such as methanol) from reduction of carbon dioxide is challenging; a feasible alternative is hydrogen production from protons, though use of water as the source of electrons (as

plants do) requires mastering the multi electron oxidation of two water molecules to molecular oxygen. Some have envisaged working solar fuel plants in coastal metropolitan areas by 2050 – the splitting of sea water providing hydrogen to be run through adjacent fuel-cell electric power plants and the pure water by-product going directly into the municipal water system. Another vision involves all human structures covering the earth's surface (i.e., roads, vehicles and buildings) doing photosynthesis more efficiently than plants.

Modern Life Style and P.M. Particles concern with LUCKNOW CITY:-

Modern architecture of houses according western countries style where lower side temperature is found 45°C to 46°C. Gomti river water is gradually becoming less therefore the air which comes from river side is less cool, this year 2015 Gomti water content is almost negligible. Without any restriction the ground water is continuously taken.

Hence earth moisture is being reduced. Unbearable heat during the summer is making life difficult. Air conditioners are used to make the heat bearable but such air conditioners are responsible for the increase of temperature in the environment because hot air and gases are emitting to the environment from outside of air conditioners. Use of air conditioner % has been increased. Almost every house is using one air conditioner. The temperature difference between day and night is becoming less. Today we see lot of new diseases which somehow growing due to the degradation of the environment. According to Indian Institute of Toxicological Research (I.I.T.R.) report, due to increase of pollution in the city Lucknow, people are facing the problem of respiratory, pulmonary diseases and also getting untimely death. Maximum danger factor is small particle P.M.10 and P.M.2.5 in the air and increase of % of carbon dioxide, carbon monoxide, sulphur dioxide and nitrogen oxide and problem is also in the air mixture of petrol, diesel and CNG.

These are highly injurious to health. P.M.10 [240.9 & 224 microgram Per cubic meter] and P.M.2.5 [116.5 & 114.8 microgram per cubic meter] are found in the area of Alambag and Charbagh, not in the city but in the city P.M.10 [197.5] and P.M.2.5 [100.9] are found. The biotic environment is made up of all living being including their reaction, interaction and interrelated action. Shrinking green cover, vanishing water bodies and unplanned urbanization are damaging ecosystem of the many cities of India. Gasping for a breath of fresh air, delved on life-threatening vehicular pollution and chirps fade away, and focused on disappearance of birds whose presence is an indicator of environmental health.

World over for green environment and sustainable development we should think for new modern methods, technology and best practices. Today we should make the people aware and realize what they have lost and also highlighted how at individual level we can keep environment clean and green. Important thing of our life and green environment is green vegetation. Population boom and fossil fuel based technological advancement have taken a serious toll on our natural environment. So now we need to do our part in reversing the effect of degradation in order for humanity to continue living in a habitable and sustainable way. Deterioration of environment is one of the greatest problems in the world. Countrymen are not following the laws of environmental protection and these laws are not sufficient to make the people aware towards the environment. People are still destroying the natural resources. It is need to save FUEL; ENERGY and WATER i.e. save (F.E.W). Due to increase of industrialization in the world 40% of carbon dioxide has increased in the atmosphere. It is expected up to year 2050, population will become 9.5 billion in that time three planets like earth will be required for life. We must think for the use of minimum natural words in our mind REDUCE, REUSE and RECYCLE. REDUCE means we must use natural resources in minimum amount like water and fuel energy in daily life. REUSE, we should purchase those things which can be reused. For example newspapers, old books and clothes. Plastics, utensils and paper made things can be recycled. The nature is the precious gift of god. We must keep good intact with life.

RESULTS AND DISCUSSIONS

As the solar energy is radiant light and heat from the sun which has a unique role in sustainable energy production. The solar energy resource additionally far exceeds what can possibly be envisioned as a level of human consumption necessary to support even the technologically advanced society. The development of affordable, inexhaustible and clean solar energy technologies will have huge longer term benefits. It will increase countries energy security through reliance on an indigenous, inexhaustible and mostly import independent resources, enhance sustainability, reduce pollution, lower the cost of mitigating global warming, and keep fossil fuel prices lower than otherwise. Arguably the most attractive method for this energy conversion and storage is in the form of chemicals bond, by production of cheap solar fuels. Significant advances in basic science however are needed for this technology to attain its full potential. Chemistry will assume a special role in this endeavor because new materials must be created for solar capture and conversion.

The progress of scientists in chemistry, biology, engineering, materials science and physics in addressing the basic science challenges involved to enable humans to use the sun sustainably as their primary energy source. Our sources are fast depleting due to more industrialization, unequal distribution and growing population. Therefore it is requirement of sustainable use of resources.

Several epidemiological studies have identified that most of chronic diseases like throat cancer, Bronchitis, Asthams normal as well as chronic, lung cancer, skin cancer and preexisting heart problem may cause cardiac failure due to presence of highly polluted air in most of polluted cities in the world. Delhi is now most **AIR POLLUTED CITY** in the world.

We must think for green and clean environment, and always the use of green technologies because which make human being healthy.

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