Benefits of Green Technology for Environment

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Abstract - *Different Enterprises, Societies and Governments largely facing with environmental issues and for this also adapting new technologies which are environment friendly[3]. To overcome these issues the concept Green Technology is emerged. In this research paper, I have explained in brief the benefits of this Green Technology for environment and how this Green Technology helps to reduce or overcome the environmental issues. In this research paper, I have mentioned objectives of green technology and why this is important. Also I have described the main sections where the green technology is mostly used. Lastly I have described the different areas where the green technology is implemented.*

Key Words: Green Technology, Benefits of Green Technology, energy conservation, environmental impact, economical perspective, social impact.

1. Introduction – Green Technology:

Green Technology is the technology which is environment friendly, developed and used in such a way so that it doesn't disturb or harm our environment and conserves natural resources. Green Technology is a part of renewable technology. Importance of this technology cannot be ignored[1]. Green Technology is also called as "Environmental technology" or "Clean technology"[4]. There are many more application of Green Technology. Its applications includes environmental science, green chemistry, monitoring of environment and also the electronic devices and equipment which are used to monitor, control, protect and conserve the environment and natural resources. It is related to sustainable technologies.

2. Green Technology:

We have seen the definition of Green Technology in introduction section. Now we need to focus on importance of Green Technology.

It is obvious that our planet starts to suffocate from all the types of pollution. But there are solutions to overcome this problem of pollution. One of them is Green Technology. The active use of green technology can help us to reduce the pollution. The main aim of green technology is to reduce global warming and greenhouse effect[15]. It also includes to develop the new technologies that do not damages to natural resources, should be less harm to people and environment.

3. Aims of Green Technology

There are many number of goals of green technology. Here, I have mentioned some of them.

To achieve the requirements of society without making any damage to natural resources on the earth, this is main aim of Green Technology. The focus is to fulfil the present needs without making any compromises. Green technology can often be a stated goal of a business segment or company. Now focus is being shifted on making products that can be fully or reused. One of the important goals of green technology is to change the types of production and consumption, we can overcome the waste and pollution and also we can reduce it[1]. Explore the goals of green technology, introducing sustainable living, develop renewable energy and reduce waste, conserve the utilization of natural resources, creation of products which are reusable and recyclable, and inventing alternatives to the practices which adversely affect the human and environment.

4. Main objectives of Green Technology

Green technology is mostly focused on developing new technologies which has no or little impact on environment and which is harmless to society. Some of the objectives of green technology are as follows:

1. To achieve the good quality of life [5].

2. To reduce increasing the rate of growth of energy consumption.

3. To enhance the economic development.

4. To reduce the level of pollution and waste generation thus protecting or improving the environmental quality.

5. To motivate for new innovations in Green Technology development.

6. To increase the awareness and education among the public about Green Technology [1].

7. To increase the use raw materials and to promote the utilization of residues, recyclable waste, local materials as raw materials for conversion process.

8. To encourage for sustainable development and preserve the environment for future generations.

5. Where Green Technology Concept is mostly used?

The main sections where the Green technology is implemented are as follows [1]:
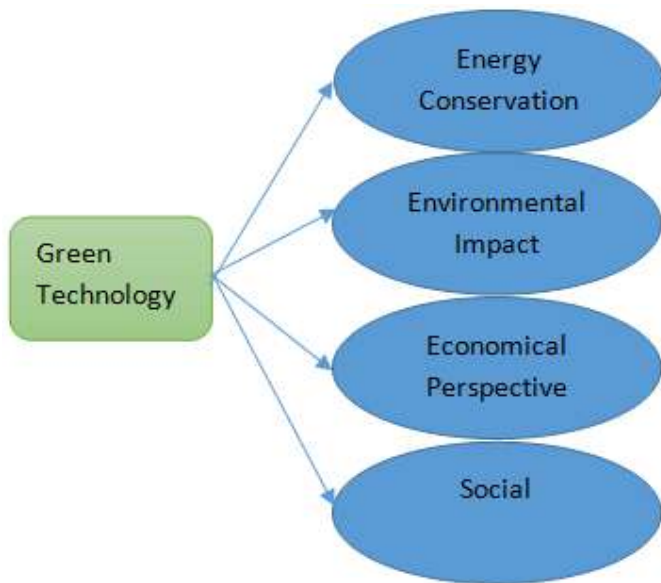

Fig 1 - Main sections where the Green technology is implemented

5.1 Energy Conservation:

Energy conservation is nothing but the use of energy. We in our daily life use the energy in different ways. If we use enrgy in a very large amount which is generated from toxic chemicals, fossil fules, ect. then it causes many adverse effects on environment and society also. So thus Energy Harvesting is the main aim or objective of Green technology[6]. Energy Harvesting is the process in which energy is obtained from external resources like winf, solar, thermal,kinetic, etc. and also energy is obtained from useless waste. To conserve the energy in a small amount, we should use the euipments which need small amout energy. This energy should be obtained from natural resources. Thus automatically there is low consumption of electricity; thereby reducing the use of fossil fuels to generate the same. Thus, energy harvesting end efficient use of energy are energy reduction technques[2].

5.2 Environmental Impact :

We live in this environment and of course the activities or our behaviours have impact on this environment. Thus, because of these activities or behaviours, the health of environment contribute to skill and nature of other activities in other sections like economic, social and culture[1]. There are many different major global environmental challenegs as follows : increasing human population, climate change which exhausting the nonrenewable resources, floods, reducing biodiversity, ocean acidification, acid rains, diminishing natural habitats, other natural disasters, etc. Of course, all of these issues have economic, social and cultural element. In this section, also Green technology is focusing.

5.3 Economical Perspective :

In this section, focus is on encouraging and prmoting people and businesses for sustainable developmens without degrading the environment. Its aim is at reducing environmental risks[7]. But, this is very diificult to obntain the sustainable development. This can be achieved by involving the talented, skilled people in the public, private, and non-profit sectors in India[1]. Thus, in this section, green technology is also focusing. So, today, many bussinesses and organizations creating jobs are main components of strong and sustainable economy.

5.4 Social :

The social equity is main section of green technology. This helps the social agencies to create the awareness about green technolgy amont the people, community and societies[1]. They also encourging them by making awareness about how to plan and act according to that plan to achieve their needs without affecting the environment. Its result will be a good well-being of whole community. Since green technology is new in the worl, it suggests the people about how to use natural resources and the environment. The things that usually being used, cars driven on the raod, clothing and grocery bags being changed to environment friendly item is a way of going green[8].

6. Different areas where Green Technology is used:

There are many different areas where green technology is used. We will see some of them as follows:

6.1 Device Recycling:

Fig 2 – Device Recycling

Most of the hardware devices like mobile devices, electronics, tablets, personal computers, etc. are developed in the environment friendly way [9]. Specifically the development of these devices include the use of toxic chemicals, hazardous materials, etc. So if we use these devices for small time and throw them, they will create the e-waste or e-garbage. Thus we have to use them for longer time or we can recycle them in proper way. This will reduce electronic waste and devices will be used in longer life time.

6.2 Server Technology:

Fig 3 – Server Room

Many organizations and businesses require to store huge amount of data regularly [9]. For this purpose they need data centers or data servers to store the data. These data centers or servers require huge amount of energy. Also there is large amount of CO_2 emissions. Green technology suggests that we should provide the energy need of these data servers or data centers through natural resources like wind, solar, etc. Also suggest that data centers or servers should be developed in a way that require less amount of energy. We can also combine different data servers or centers as per our need. Therefore cooling system required for these data centers and data servers are also in small amount.

6.3 Green Architecture:

Fig 4 – Sustainable Architecture

Green Architecture is the environment friendly technology. This technology focuses on controlling urban resource use and making the urban expansion more sustainable[10]. This includes green buildings. These green buildings are constructed in a way that they use natural light. Also it is the implementation of design in structures, buildings and commercial space that are environment friendly and eco-friendly, environmentally accountable and resource efficient throughout the process of development of buildings from planning to actual use. Features of green architecture include use of materials form urban waste, reduces waste production and aiming zero levels of emissions, water waste, energy waste, etc.

6.4 Solar Technologies:

Fig 5 – Stirling engines for low-temperature solar-thermal-electric power generation

Solar technologies is the most accessible green technology[10]. In this, from local people to commercial spaces use solar energy to reduce dependence on limited energy resources[10]. Of course the main source of solar technology is the Sun. In solar technology, solar power is used which is the conversion of energy from sunlight into electricity[11]. There are three basic main technologies by which solar energy is used: the first is PV i.e. photovoltaics, the second is CSP i.e. concentrated solar power and third one is SHC i.e. solar heating and cooling systems[12].

6.5 Green Mining Technologies:

Fig 6 – Green Mining

The Mining industry is very dirtiest industry. This mining industry have also adopted the green technology concept. By adopting this green technology mining industry reduces its environmental impact and increases its saving cost[10]. Mining industry that adopt green technology is called Green mining. This green mining includes different new technologies for mining and new processes. Using these new technologies and processes, mining industry can reduce its impact on environment which are related to extract and process the materials and different metals.

Examples of green technology include to reduce the level of greenhouse gases, some mining approaches to reduce the ecological footprint and reduction in the use pf chemicals[13].

6.6 Green Technology in the Agro Science:

Fig 7 – Agriculture pesticide spraying drone

To satisfy the increasing global need for food, the agriculture field has to depend on advances in production techniques and expansion in production areas over the years. Huge amount of growth in population and increase in number of human activities resulted in exploitation of environment and threatened the capability of agriculture field to provide food and income for the people. Green technologies are the new emerging technologies which are contributing to the enhancement of economic and efficient production of safe and high quality food [14].
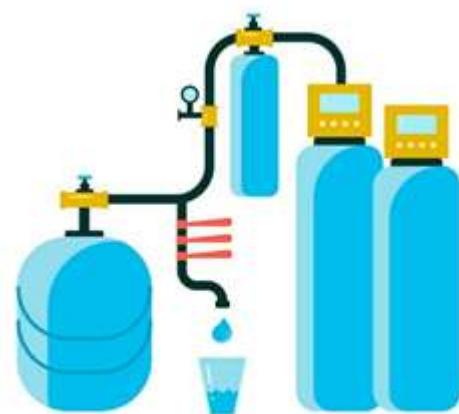
6.7 Air Purification:

Fig 8 – Air purifiers technology

Air pollutions is the situation of air when characteristics of air are changed. When the air is polluted, it contains the pollutants such as dust, chlorofluorocarbons (CFC), ash, carbon dioxide, carbon monoxide, lead, etc. Air purification refers to the green technologies and production of plants which reduces CO_2 in environment and produces fresh air. To control the pollution of air there are many methods are available such as combustion, absorption, adsorption, mechanical devices, fabric filters, etc[2].

6.8 Water Purification:

WATER PURIFICATION SYSTEM

Fig 9 - Water purification system

Water purification is the process of purifying the water which satisfy the water need of users. The main objective of water purification is to remove the pollutants from water, so it can be able for further use. Then this water can be used for drinking, medical use, industrial use and other uses. The main focus in water purification is to overcome the negative impact of water that is returned to environment. The methods used for water purification are disinfection, filtration, settling, etc[2].

7. Benefits of Green Technology:

1. Green technology helps to reduce emissions, saves water, reduce the waste and requires less energy.

2. Green technology does not emit any harmful thing into air.

3. It supports for renewable which will never run out.

4. Green technology does not have any negative effects on our earth and it uses sustainable production of energy.

5. It includes the new innovative technologies which support for the development of products which are environment friendly.

8. Conclusion:

From the above discussion, I conclude that Green Technology is a major big source for environmental sustainability and helpful for people also. Green technology includes various innovative methods and technologies that we can use to reduce environmental problems and can make our life more comfort. Green technology does not harm to anyone in the environment. We should increase the use of green technologies.

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