

The Brief Review on the Green Technology and its Numerous Uses

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ABSTRACT

"Technology" refers to the use of science for practical reasons. The field of "green technology" encompasses a rapidly growing community of techniques and materials, ranging from energy-generation tactics to non-toxic cleaning solutions. This article also focuses on the same subject of green technology and its many applications, but in greater depth or in a more diagrammatic manner, such as an overview of green technology, which includes the definition of green technology and the numerous kinds of green technology (Ocean Energy, Solar Energy and Wind Energy etc.). This paper also discusses the various advantages and disadvantages of green technology (such as sewage treatment, capture and storage technology, renewable energies, solid waste treatment and management, and water treatment), as well as the various applications of green technology (such as sewage treatment, capture and storage technology, renewable energies, solid waste treatment and management, and water treatment). Using environmentally friendly technologies Companies and utility providers are taking the necessary measures and exerting considerable effort to meet societal needs with long-term solutions that may be utilized now and in the future without creating environmental harm or depletion.

Keywords

Carbon, Energy, Green Technology, Solar Energy, Sustainable.

1. INTRODUCTION

Green technology is a term used to describe a kind of technology that is considered ecologically beneficial because of its production process or supply chain [1]. Although green technologies has a fancy moniker, it essentially means "clean technology." Sustainable technologies were formerly known as green inventions. From the perspective of information technology, green innovations are ecologically friendly products that reduce greenhouse gas emissions[2]. They've always been seen as a more costly alternative to the less expensive, non-sustainable technology that's been used for. Green technologies promote sustainability by developing nature-friendly or eco-friendly technology that not only meet human needs but also decrease waste production and improve the quality of life now and in the future. Wind energy, ocean energy, and solar energy are examples of green technologies that seek to protect the environment and conserve natural resources (Figure 1)[3].

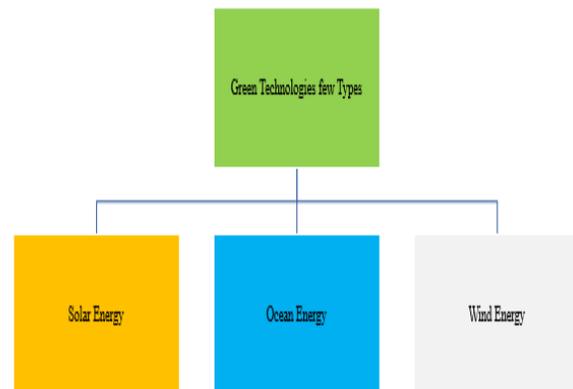


Figure1: FewTypes or Examples of Green Technology (Ocean Energy, Solar Energy and Wind Energy)

1.1 Solar Energy

Solar energy is radiant light and heat from the sun that is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaics, solar thermal energy, solar architecture, molten salt power plants and photosynthesis. Solar energy is rapidly gaining traction as a viable alternative energy source. At any given time, nearly 90petawatts of electricity are available, which is six thousandtimes power used by all of human society[4]. The planet receives as much solar radiation in 14.5 second as mankind uses in one day. Solar energy can be used in a variety of ways. Solar electricity, for example, can be used to distill water by evaporation [5].

1.2 Wind Energy

The technique of using wind to produce power is known as wind energy. Wind turbines convert the kinetic energy of the wind into mechanical power. Wind energy is a potential alternative energy source, however the wind's unpredictability creates concerns. Wind turbines don't have the greatest aerodynamic efficiency when the wind isn't constant, and abrupt, uneven gusts decrease blade output [6].

1.3 Ocean Energy

Ocean energy is a source of energy, and the possibility of globally dominating, large-scale ocean energy facilities is just that. Like all contemporary technology, current maritime energy solutions have disadvantages. Construction and upkeep of these structures may be prohibitively expensive at this time, and not all locations are suitable for their effective deployment. However, these obstacles will very certainly be solved in the near future, and ocean energy conversion will soon produce as much energy as land-based energy conversion [7].

1.4 Applications of Green Technology

There are various applications used in green technologies some are given below:

- Sewage Treatment

Wastewater treatment is the process of removing particles, nutrients, and organics from residential and business effluents. Sewage therapy has been known since the dawn of time. To help remove biological, chemical, and human pollutants from effluents and make them ecofriendly, green technologies have been integrated into this area of modern culture. Wastewater disposal is critical because it ensures that industrial waste water is treated before being discharged back into the atmosphere. A detailed model of the treatment plant is shown in Figure 2. The four stages of wastewater treatment include screening, primary care, secondary treatment, and final treatment. When designing a wastewater treatment plant, the following factors are taken into account.

- Remove all natural and biodegradable materials.
- Take out the solid part.
- Getting rid of harmful germs.

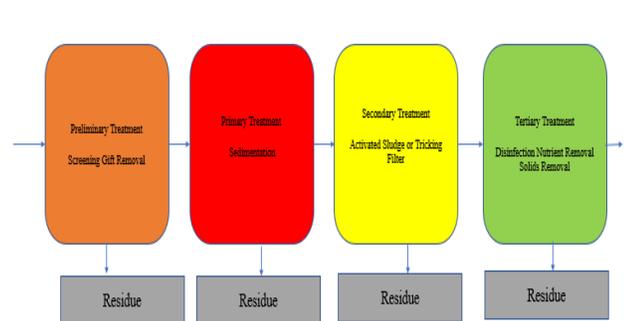


Table 1: Emission Factors of Fossil Fuels for Electricity Generation

Fuel	Emissions Factor(kg per kWh)			
	Sulphur-Dioxide	Carbon-Dioxide	Carbon-Monoxide	Nitrogen-Oxide
Gas	0.0006	0.5400	0.0006	0.0010
Petroleum	0.0165	0.8600	0.0003	0.0026
Coal	0.020	1.190	0.0003	0.0053

In Figure 4, illustrates the emission factors of fossil fuels for electricity production, with carbon-dioxide from petroleum, gas, and coal having the highest value emission factor, and petroleum having the highest value emission factor, with a value of 0.8600

Figure 2: Four Phases of Wastewater Treatment Screening (Primary Care, Secondary Treatment, and Final Treatment)

1.4.1. Captures and Storages Technology

Carbon capture and storage (CCS) is a technique for reducing greenhouse gas emissions. Carbon capture and storage (CCS) is a technology that captures carbon dioxide from the atmosphere and stores it on suitable surfaces. As seen in Figure 3, it follows a three-step procedure. The process includes capturing carbon dioxide from power plants, exporting carbon dioxide through tubing, and storing carbon dioxide. CCS technologies are used to store carbon dioxide at oil and gas recovery sites or unmineral coal mines.

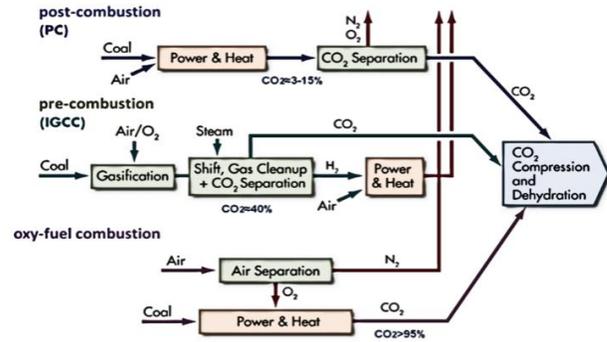


Figure 3: Carbon Dioxide Capture Technologies(8).(Power Stations, Exporting Carbon Dioxide by Tubing, and Storing Carbon Dioxide are all Part of the Operation)

1.4.2. Renewable Energy

Carbon capture and storage (CCS) is a technique for reducing greenhouse gas emissions. Carbon capture and storage (CCS) is a technology that captures carbon dioxide from the atmosphere and stores it on suitable surfaces. As seen in Figure 3, it follows a three-step procedure. The process includes capturing carbon dioxide from power plants, exporting carbon dioxide through tubing, and storing carbon dioxide. CCS technologies are used to store carbon dioxide at oil and gas recovery sites or unmineable coal mines.

kg per kWh. Petroleum and coal have the lowest emission factor of 0.0003.

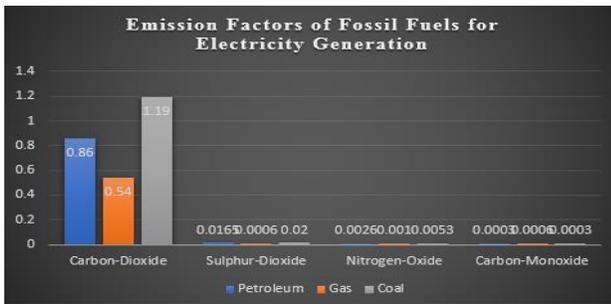


Figure 4: Graphical Representation of Emission Factors of Fossil Fuels for Electricity Generation

Renewable energy sources are essential for the long-term economic and environmental sustainability of a country. Green technologies have the ability to generate enormous quantities of energy while generating less greenhouse emissions. Renewable energy is expected to account for more than half of all power generated by 2050, according to the International Energy Agency. However, a long-term infrastructure is required to achieve long-term renewable energy sustainability.

1.4.3. Solids Waste Treatments and Managements

One of the most important aspects of recycling that has recently received attention is solid waste management. The development of innovative trash reduction techniques has resulted from government-sponsored solid waste management programs. Every business has a responsibility to maintain accountability and keep the environment free of hazardous waste, according to Australia's Product Stewardship Bill 2011. These laws and codes were essential to the country's long-term economic and social stability. Long-term sustainability is incompatible with landfill trash disposal. As shown in Figure 5, there are six stages in the suggestions for a sustainable growth: reuse, reduce, recover, recycle, landfill, and incinerate.

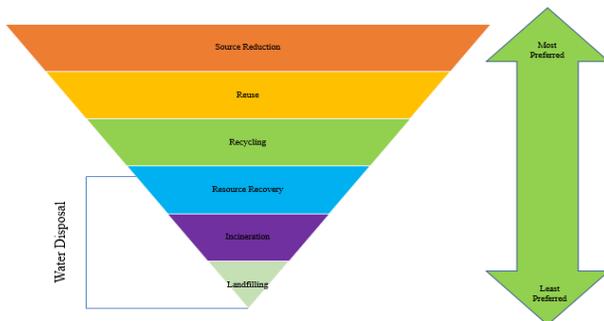


Figure 5: Solid Water Management Hierarchy (Source Reduction, Reuse, Recycling, Resource Recovery, Incineration and Landfilling)

1.4.4. Water Treatments

Water is a critical part of life. Several parts of the planet are plagued by water pollution and shortages. The process of eliminating unwanted toxins from water is known as water treatment. Biological, physical, and even chemical contaminants are examples of undesirable compounds, rendering them viable for use of other applications. Many developed countries prefer water treatment as a means of mitigating water tension.

Depending on the application, such as industrial or human interaction, this approach can be based on various viewpoints [8].

2. LITERATURE REVIEW

The following are some of the researchers and their studies on green technology and related topics: According to Zaffar A. Shaikh, global warming, climate change, oil shortages, and other environmental problems have spurred the development of green technology. Researchers have discovered that Climate change, global warming, energy depletion, and other environmental concerns have sparked interest in green technologies this year. It may also have a significant impact on long-term sustainability. In today's world, technology advancements have influenced human creativity and innovation. Such innovations, on the other hand, have caused devastation on the globe on both a global and local scale. Green technologies have a bright future in meeting long-term economic viability requirements. Environmental and social sustainability concerns, on the other hand, must be reinforced in tandem. It is critical to examine both the economic and environmental consequences of a technology before adopting it. It should be a win-win situation when economic and environmental growth are emphasized. Their article focuses on green technology, as well as the challenges that come with developing and implementing it, as well as advances that contribute to long-term sustainability. Their report also discusses government tactics and budgetary concerns [9]. N. Attia and colleagues examine current environmental sustainability strategies and the role of green technology in sustainable development, as well as assess different green technologies for urban living in a sustainable climate from the standpoint of adaptation and deployment issues. For day-to-day operations, Human Society develops and employs a wide variety of technologies. Acceptance of technology is low, and it has negative consequences for the planet and human civilization. As a consequence, new innovations that are more eco and ecologically friendly will be utilized to complement current living habits. As a consequence of improved knowledge and current advances in energy conservation science, new inventions are more effective and ecologically friendly. These technologies are referred to as "green" or "clean." Green technologies address recycling, energy efficiency, health concerns, renewable energy safety, and a variety of other issues [10]. Xian Zhiyong attempts to develop a basic structure for environmental systems improvement from the perspective of the green technology innovation paradigm, specifically including improvements to the framework of environmental rules and legislation, using comparative studies on conventional technological and green technology innovation, as well as a difference study of environmental systems improvement. System of environmental professional standards and system of economic advantages for the environment [11]. After study and reads the researcher researches on topic green technology they have little missing of some point which is compensate by this paper. This paper gives meaning of green technology and their few types in detail manner. This paper also gives full details of applications of green technology and various advantages and disadvantages from green technology.

3. DISCUSSION

Green technology and its many uses are studied and evaluated by a large number of researchers. This article also focuses on the same subject of green technology and its many applications, but in greater depth or in a more diagrammatic manner, such as an overview of green technology, which includes the definition of green technology and the numerous kinds of green technology (Ocean Energy, Solar Energy and Wind Energy etc.). This paper also discusses the various applications of green technology (such as Sewerage Treatments, Captures and Storages Technology, Renewable Energies, Solid Waste Treatments and Managements, and Water Treatments), as well as their benefits (no hazardous substances are released into the atmosphere, the potential to provide economic opportunities to many regions, and so on) and drawbacks (Exorbiation, for example).

4. CONCLUSION

This paper is about green technology, and it contains a definition of the term as well as examples of different types of green technology (such as wind energy, ocean energy, solar energy, etc.). This article also discusses the different applications of green technology (such as sewage treatment, carbon capture and recycling, clean energy, solid waste treatment and management, and water treatment, to name a few), as well as the advantages and disadvantages of green technology. Using environmentally friendly technologies Companies and utility providers are taking the necessary measures and exerting considerable effort to meet societal needs with long-term solutions that may be utilized now and in the future without creating environmental harm or depletion.

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