

Green Technology and Its Effect on the Modern World

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ABSTRACT: *Green technology is a term that describes a form of technology that is deemed eco-friendly due to its manufacturing process or supply chain. Green technology's mission is to protect the earth and, in some situations, also to undo previous environmental harm. Excessive use of pesticides and over-exploitation of energy, among other factors, have resulted in a crescendo of the greenhouse effect, disrupted habitats, and global warming in the last two decades, prompting the development of green technologies. Green energy seems to be the only shining knight in shining armor who can save the world when the planet's natural resources run out. The current study has explained about the history of technology and green technology, green technology initiatives, objectives in different spaces of civilization, and its effects on different sectors. Alternative energy sources, biodegradable materials, recycling, and the construction of sustainable buildings are all aided by environmental technology. It also contributes greatly to carbon reduction, global warming mitigation, and natural resource preservation. Green technology encompasses a vast variety of gadgets, allowing people to be more concerned about the environment in their real experiences. Hence in future this technology has always come up with better solutions and implemented in very efficient ways. The shift to green technology should help to stabilize global movements toward improving people's well-being and social prosperity thereby reducing environmental concerns.*

KEYWORDS: *Food, Green, Nanotechnology, Resource, Technology.*

INTRODUCTION

Technology is characterized as a collection of procedures for developing, converting, exhausting, and interpreting apparatuses, machineries, processes, skills, systems, and approaches to shaping them towards solving a issue, improvise a foregoing explanation for problems, achieve a objective, maintain an functional contribution/production relationship, or execute a particular purpose. Technology has had a significant impact on the life of humans and other animal species. Technology has also had a significant impact on humanity and its surroundings in a variety of areas. It has aided in the growth of many more industrialized nations' economies and has aided in the creation of leisure class people, including their lethargy and laziness. Biotechnology research, including internet technology, nuclear technology, nanotechnology, air craft technology, and green energy technology, has applied various beneficial innovations to society, and these technologies also improved people's standard of living and delivered comfort ability.

Looking from the other side of this technological globe, there are certain unnecessary derivatives generated by using such technologies in abundance, which result in environmental waste, natural resource exhaustion, and harm to the earth's ecosystem. The ethical dilemma arises as a result of the impact of novel technology on values and society. To reform a society's current structure, it is common practice to equate it to a future, expected system of the kind known as "ideal systems," which refers to systems that have ideal features that are flawless in any way. It has been determined that scientists have continually developed the characteristics of realistic devices to enhance their performances by having those imaginary devices in mind. One of the features of ideal technology is the potential to be renewable and emit zero greenhouse gases into the atmosphere ideal technology is green technology [1].

1. History of Technology:

Technology has been around for even longer than we can remember. It seems to have already existed, in some form or another, for the majority of people. It's impossible to say when technology began. In the Prehistoric Era, technology consisted of hunting utensils and guns, as well as fire. Later times' technology consisted of metal-forged arms and utensils. The wheel was invented in 9500 BCE and also considered one of the most valuable pieces of technology ever created since it enabled its operators to be even more innovative in their goods transfer. The Egyptians were recognized for their technical skills as well as their ability to erect pyramids on slopes. The Chinese were well-known for their many inventions, including suspension bridges, printing

presses, cast iron, paper, black powder, and a variety of other innovations that are still used today. A watermill is an Asian Greek invention that was invented by the Greeks and they are credited for that invention. But it was the Greeks' vapor-powered engine, or Aeolipile, that was the most significant improvement. The primitive age and the Resurgence are two other well-known historical periods. This was also a time of significant technical advancement. It was the period that upright windmills, motorized clocks, and glasses were invented. During this time, cast metal style letterpress was created, allowing for more paper work to be produced.

The industrial revolution is one of the most recent important periods. Customers began to purchase more at this time, requiring existing companies to produce more stock in order to meet demand. The use of coal, an affordable resource that seemed to be plentiful, was one of the driving factors that caused the industrial revolution to take place. Mist locomotives were used in steamboats and trains in the nineteenth century. To allow trains that are not unsafe, telecommunication was built so that locations could connect with one another and prevent mishaps. The twentieth century was perhaps the most transformative, with mass manufacturing, assembly lines, and the invention of the automobile occurring at the start of the century, which was previously a major step forward.

Around this time, electrical energy became more affordable; it had historically become too expensive for widespread use, and only the wealthiest could afford it. Finally, the present day, the twenty-first century, has begun, and it remains to be seen how much humankind can advance with its machinery. The majority of people have mobile phones and computers, and they are being more rational and trustworthy than in the previous century. In today's world, people are focusing on quantum processors, drone equipment, nanotechnology, exotic fuel supplies, simulated realism, among many other items[2].

2. *Green Technology Initiatives:*

In terms of rising worldwide threats such as weather alteration, population progression, ecological degradation, and unproductive usage and exhaustion of natural resources, nations must hire machines and methods for monetary operation that are less environmentally damaging and conserve natural resources. Sustainable growth is connected with less ecological damage and is determined by rigorous and all-inclusive approaches, both global and regional, that accounts for future peers' needs. Several of these proposals advocate for the use of renewable technology. Natural resource depletion, weather variation due to crowding, and the accelerating monetary expansion of modern developed realms correlated with detrimental environmental impacts are all well-known risks.

They necessitate the implementation of new commercial development and change policies that put a greater focus on non-renewable resources in order to minimize the usage of natural resources while enhancing people's living conditions. Green technology stimulates enduring improvement, which involves identifying ecologically responsible sources of production, establishing environment - friendly markets, and creating more jobs and machinery. Green technology is the growth and utilization of resources, apparatus, and assemblies that helps in protecting the natural realm and resources by minimalizing and decreasing the destructive effects of anthropological activities. Green Technology denotes to goods, apparatus or schemes which satisfy the following criteria shown in Figure 1[3].



Figure 1: Satisfactory Criteria's for A Technology to be Considered as Green Technology[3].

In other words, Green Technology (GT) is an ecologically beneficial expertise that decreases the ecological costs incurred by chemicals and machinery for the benefit of humans. Green systems maintain the use of renewable carbon-based energy while avoiding the emission of greenhouse. Green innovations do not lead to any form of environmental destruction. Green technologies aids in the resolution of both basic and advanced public policy problems. Table 1 demonstrates the function of green technologies in some of society's most fundamental and creative fields[1]. Green energy has a longer history than most people know. Thousands of years have passed since the invention of green technology.

The Egyptians used wind to propel ships through the sea as early as 7000 years ago. In antiquity, anthropological efforts, water power, animal power, wind, and logs were the primary sources of renewable energy. Wind power has been used to propel vessels down the Nile River since 5000 B.C., and it is still widely used today. Solar power is a comparatively modern technique because it needs multifaceted and special panels that can hold the sun's vitality. Solar energy is commonly used in houses, as well as flat land that gets a lot of sunshine, such as deserts. The energy is stored or traded to someone who needs it. Hydro-power harnesses the energy of moving water to generate electricity. Hydropower has been produced in over 150 countries, making it the most commonly used clean energy source[2].

Table 1: Green Technology Objectives in Different Spaces of Civilization[1].

S. No.	Area	Objectives of Green Technologies
1.	Aircraft & Space Travel	Use of green energy and green materials and environmental friendly processes in air and space travel
2.	Agriculture	To avoid environmental degradation in agricultural processes.
3.	Health	Use of green technology and green processes in all health and medical services.
4.	Food Processing	To eliminate poisonous contents in food and to avoid green gas emission and environmental degradation in all food packaging processes.
5.	Education	Use of green technology in all education services.
6.	Potable water	To large scale filter used water and sea water through green processes without environmental degradation.
7.	Computer and Information Communication	To develop and utilize environmental friendly, recyclable electronic and computer components which uses renewable energy and efficient performance
8.	Sustainable Energy	To develop technologies for harvesting potential natural energy sources to generate required energy to human civilization without degrading environment
9.	Industrial Automation	To develop industrial processes which are environmental friendly, no green gas emission, recyclable waste products using green energy.
10.	Consumer products	To produce variety of new generation consumer products without side effects and without degrading environment in any production, packaging and in actual use by consumers.
11.	Construction	To build environmental friendly, energy efficient, smart buildings.
12.	Automobiles	To produce energy efficient, zero emission automobiles using renewable energy processes.

EFFECT OF GREEN TECHNOLOGY IN VARIOUS SECTORS

1. Nanotechnology:

Nanotechnology is the study of materials at the molecular, atomic, and densely complexed levels. Humans' fundamental needs and expectations are required to be fulfilled by nanotechnology as it evolves. Food, potable water, clothing, electricity, accommodations, well-being, and the climate are all requirements for humans, necessitating computerization of every ground, increased lifespan, and so on. Nanotechnology production that is planned and supervised contributes to ecological protection and can therefore be classified as green technology. Green Nanotechnology can have a major effect on nearly all sectors and fields of culture by delivering better-built, harmless, long-lasting, smarter, and healthier items for the household, electronics, pharmacy, transportation, agriculture, and businesses. Nanotechnology may thus be developed as a renewable technology for a sustainable culture if it is used in a managed manner for environmental sustainability.

2. *Green Technology in Agriculture and Food:*

Identifying a suitable methodology that is acceptable for capital production through sustainable agriculture, researching the consequences, and suggesting national standards for making approvals for the expansion of suitable technology are all obstacles for green technology in agriculture and food. Inventions in farming that are based on sustainable green technologies are supposed to resolve difficulties in the foodstuff area and increase agronomic production. Green technologies will provide keys by precise cultivation, nano-pesticides, and low-cost decentralized water decontamination, when there is an ever-increasing ultimatum for foodstuff and suitable nourishment.

3. *Green Technology for Drinkable Water:*

Green technologies inventions for low-cost water decontamination are expected to address the world's potable water problem by supplying everyone with sustainable drinkable water. By 2030, the demand for water would have grown by 60% to feed an extra 2 billion people. By the year 2050, two-third of the realm's economy will be pretentious by scarcities, based on current rates of consumption, development, and population. Via cost-effective localized water decontamination, identifying toxins at the molecular level, and dramatically improved purification systems, green technology will provide an explanation for this issue. This assists in the reprocessing of rainwater into uncontaminated drinkable water, as well as the recycling of seawater into large-scale drinkable water at a low rate.

4. *Green Technology for Sustainable Energy:*

By 2025, worldwide energy demand is estimated to rise by 50%, with natural fuels accounting for the majority of this increase. About 1.4 billion people do not have access to energy, and 2.2 billion depend on vegetal materials, flora, or agronomic left-over as a source of energy and warmth. By reinventing the power network, green technologies will address the need for energy sources by more effective lighting, energy cells, solar cells, hydrogen storing, locally disseminated power supply, and regionalized generation and loading. Nanotechnology, as a green technology, allows wide scale inexhaustible solar and wind energy creation and dissemination at low cost lacking addition damage to the environment, thus leading to a clean energy approach.

5. *Green Technology in Building Construction:*

Green technology opens up exciting new possibilities in the construction industry, such as the creation of energy-efficient, incredibly, extended, and incredibly lightweight construction materials. Now it is possible to monitor concrete properties, appearance, and hardness by influencing the fundamental construction of cement phases. Nano-modification also provides vital statistics for more accurately estimating the material's operating life and understandings of how to refine it even further.

6. *Green Technology in Aircrafts and Space Travelling:*

Space exploration would provide us with a way of detecting the wellbeing of the earth, a source of energy, and a blank canvas for our creativity. Humans will be able to live more carefully in space thanks to green technologies. Impulsion oils, coverings, basic fabrics, smart costumes, sensors, and life-sustaining environments are all possible uses where green technologies can have an effect on space travel. Green nanotechnology is expected to produce constituents that are more effective, tougher, self-healing, and feather light than presently accessible ones.

7. *Green Technology in Healthcare and Medication:*

Human well-being is a major and important field of green nanotechnology science. Green nanotechnology research opens up a number of possibilities for innovation in the medical industry. Fair and simple diagnostics, creative drug delivery technologies, and faster production of new drugs are just a few of the green technology applications in this field. Long-term and much more controlling green nano-technology breakthroughs will restore DNA (deoxy ribonucleic acid) and cellular impairment, as well as alter drug therapy. It's been proposed that with the right rejuvenation therapies, people could live up to 1,000 years. Microscope machines will be able to fly into our bodies in 30 or 40 years, replacing damaged cells and tissues and effectively eradicating diseases.

8. *Green Technology in Food and the Food Processing:*

Finding a sustainable balance between food quantity and ultimatum that ensures the human species' long-term survival would be one of humanity's most important challenges. Green technologies in the foodstuff and food handling industry face tasks in reducing the generation of process-induced contaminants, which necessitate the use of experts. Biological conservation, non-thermal technologies, electronic and magnetic wave warming, and electrical and magnetic fields are only a couple of the technologies available. There are potential prospects to remove process-induced poisons in foodstuffs, and also the environmental impacts of food production and storage, underneath the large category of nanotechnology and biotechnology[1].

9. *Green Solutions:*

Many factors contribute to the depletion of natural resources and contamination of the atmosphere, the most important of which are consumer buying habits and daily life habits. Simple changes can make a big difference; for example, if each office worker used one fewer staple per day, we'd save 120 tons of metal. Per year, over 14 billion pounds of garbage is poured into the oceans of the kingdom. The majority of it is made of plastic, which is toxic to marine organisms. The deterioration of ecological quality is a direct result of millions of decisions taken without thought to the consequences on the creation. These statistics are unquestionably shocking, but people have the power to change the world; after all, about 75% of the waste in landfills is biodegradable. Many people underestimate the strength of the discrete, especially their dominance when it comes to matters that are significant to them.

Customers are the only ones that have the ability to influence the world; even though it doesn't feel that way, customers effectively control how companies work[2]. The lack of a widely recognized categorization scheme for green technology sometimes stymies its advancement and adoption. In 2016, China founded the Green Technology Bank (GTB), a virtual databank of green technologies, to promote and preserve sustainability improvement and speculation. This research planned a level three classification system of green technology (CSGT) using an amalgam approach that assimilates bottom-up and top-down methodologies to have a coherent metric for categorizing these skills. Green technologies are divided into five main classes, comprising ecological quality, resources use, energy consumption, safe living, and environmental protection, with 30 subordinate groups and 87 tertiary groups, according to the proposed CSGT. The CSGT allowed the investigation of 2453 specific examples of renewable energies. The outcomes provided useful statistics for judgment makers and green stockholders to comprehend the expansion of green technology from the viewpoints of multiple bases, divisions, implementation stages, and spatial delivery.

LITERATURE REVIEW

J. Charles Rajesh Kumar. J et al. addressed the present substantial accomplishment, predictions, estimates, electricity generation, along with challenges, speculation and occupation chances due to the expansion of sustainable green energy in India. The author is well aware of the many challenges that the clean energy sector faces. The utilization of renewable green energy and ensuring people's access to fair, consistent, sustainable, and contemporary energy are two ways to achieve sustainable green energy growth. Strong government funding and a steadily improving economic condition have propelled India to the forefront of the realm's most lucrative green energy marketplaces. The administrations have devised strategies, agendas, and a welcoming atmosphere in order to entice international investment and accelerate the country's entry into the clean energy market. The green energy sector is expected to generate a vast number of local jobs in the coming years. Modernizers, lawmakers, project planners, investigators, companies, stockholders, accompanying owners, agencies, and academics benefited from the references focused on the analysis findings.

Mahesh Kumar described the environmental, monetary and social influences of green energy resources. The author explained that though traditional energy dependent on oils, gases, and coal is very vital for the development of every nation's economy, these resources have some negative effects on the ecological climate, and this disadvantage restricts the usage of conventional resources in excess, and this problem has shifted the focus to sustainable green natural resources. Both fiscal, social, and environmental problem can be avoided by using inexhaustible energy, since these fuels are called eco-friendly and do not emit greenhouse gases such as carbon dioxide, Sulphur dioxide, or carbon monoxide. Wind energy is known to be one of the most workable

clean energy bases, followed by solar energy, photovoltaic solar cells, and hydro-electricity. The correct application of renewable energy systems will result in native occupation, improved health, job opportunities, business growth, consumer choice, life pattern improvement, communal bond forming, revenue production, demographic impact, and public development.

Chet Narayan Acharya explained how green power policies, preparation, and administration could help Nepal for long-term growth and poverty reduction. Carbon use has increased significantly as a result of increased global economic growth and improved conventional living standards. The exponential growth in the use of fossil fuels, as well as the consequences, have compelled the quest for alternative energy sources. Green energy, as the name implies, is a renewable source of energy. Nepal is an ironic enough country for renewable energy sources, despite its inability to accelerate its development and expansion agenda. It is an effort to examine and comprehend green power implementation, proper organization, and the Nepalese economies potential. The study findings showed that using green energy instead of fossil fuels helps to transform poverty and ensure its long-term survival.

Usman Aminu Umar et al. discussed the material resources standards and the effects as a workable assessment device. As knowledge and awareness about ecological and sustainability concerns such as resource depletion, biodiversity loss, and weather alteration grow, so does the necessity for covering projects that have fewer negative impacts on the atmosphere while allowing living standards to be maintained. Constructors, inventors, and resource suppliers have responded to this need by developing strategies and skills that reduce electricity, water, and primary material use, reduce greenhouse gas secretions, and maintain or improve nearby environmental structures and amenities. In total, a number of government and non-governmental organizations have worked to improve the construction industry's efficiency by expanding green ranking schemes that can be used to estimate the sustainable value of new and existing buildings[4].

Vardeep Singh Dhillon et al. explained in their study that how approaches like green hospital in health sector is contributing to weather change. The resources required to provide modern health care are incredibly limited. Hospitals operate 24 hours a day, 365 days a year, using cutting-edge medical expertise to carry out complicated medical procedures that necessitate the use of appropriate lighting and temperature. This is impossible to do without more power. Climate change is an unavoidable reality, and contemporary healthcare not only responds to but even exaggerates this serious phenomenon. Hospitals, as resource-intensive establishments, were discovered to consume large amounts of power, water, nutrition, and building materials in order to deliver high-quality maintenance. This was also discovered that many healthcare organizations would significantly reduce their environmental impact by taking easy, insistent, and long-term steps. However, given the local circumstances and increasing consumer opportunities, constructing Green Hospitals can be difficult[5].

DISCUSSION

Green technology is described as technology that is environmentally sustainable, designed and utilized in a mode that does not harm the atmosphere and preserves natural resources. Green technology is also known as sustainable technology and sustainable energy. The aim of green technologies is to fulfil societal needs without harming or depleting natural capital on the planet. The goal is to fulfil current demands without sacrificing quality, so the focus is now on creating materials that can be entirely recycled or re-used. As one of the major priorities of green technology, efforts are being taken to minimize waste and emissions by shifting manufacturing and usage habits. Alternative solutions must be developed to determine more health disruption, as well as the benefits and drawbacks of green technology. The current research looked into how green technology is being implemented and how it is affecting different industries. The report proposes a number of strategies for establishing sustainable development and its significance in the future. According to the findings, green technology's value cannot be overstated as part of the clean energy division of the sustainable technology revolution, and going green will only serve to alleviate the current difficult situation. The importance of green technologies should be recognized in order to fix this crisis before it worsens.

CONCLUSION

Technology has had many impacts on society and the world, as well as aiding in the advancement of more industrialized economies, such as the modern financial economy. Just a handful of the advances that science has contributed to society include aircraft technology, automotive technology, biotechnology, electronic technology, telecommunication technology, Internet technology, clean energy technology, atomic and industrial technology, nanotechnology, and space technology. These technological advancements have changed people's lives and provided warmth. In order to preserve their comfort in society, people must be vigilant about the environment's welfare. In this article, we suggest how innovations can be made more efficient by incorporating renewable components, preventing environmental deterioration and converting them to new technologies, ensuring a unpolluted planet for future groups. The paper further addresses the benefits and problems of green technologies in irrigation, potable water, solar energies, buildings, aircraft and space travel, education, food and manufacturing, and health and medicine in the twenty-first century. To track sustainable development and green growth, countries need well specified action programmes and indicators. The shift to green technology should help to stabilize global developments that aim to improve people's well-being and social prosperity while lowering potential impacts. One of the most appealing facets of green technology is that it consents individuals to live their life in a more environmentally friendly manner. Green technology spans a wide range of appliances, making it possible to be more environmentally conscious in daily life.

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