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A Review Paper on New Trend in Green Technology

Dr. Rahat Ashraf
RIMT University, Mandi Gobindgarh,
Punjab, India
Email Id- rahatashraf@rimt.ac.in

Dr. Sachin Kishor
RIMT University, Mandi Gobindgarh,
Punjab, India

ABSTRACT
The adaptation of science to human needs is technology. Technology the current technological developments are accelerating to the point that they can permanently harm our planet. Every technology has advantages and disadvantages, but they prefer to ignore the bad effects that are producing major disruptions in human life and animal habitats. As a result, green technology aims to protect the environment through the use of never-ending natural energy. It also serves to minimize the effects of atmospheric pollutant emissions by replacing trash with renovated goods, which leads to greenery and greening. There are just a few divisions. They all have no adverse effects and will thus be learned by future generations. It is only because we damage this world that we are accountable for rescuing. In addition to the green technological advantages, this study shows value. Over $100 billion was invested in 2007, setting new global records for new renewable energy resources, industrial plants and research & development. However, since renewable energy aspirations fall behind practice due to the rapid rate of transformation in recent years.

Keywords
Green Building, Green Energy, Green Technology, Pollution, Renewable Energy.

1. INTRODUCTION
In addition to the conservation of the natural resources of the world. It is also helpful to decrease. Another name for it is clean technology. Sustainable development is the core principle here. This technology is a technology and technology for the production of renewable power. Examples are photovoltaic, wind turbines, hydropower generation and other technologies that generate energy. Green technology works by avoiding or changing the causes that generate toxins within the environment. This contributes to the economic and biological balance of the ecosystem. It seeks to minimize greenhouse gas emissions and loss of ozone layer, raising essential research and development components. Systems which contribute to sustainable practices are essential for a stable, secure and balanced planet. The Government of Denmark has decided to turn renewable power to 100% by 2050 [1]. This paper collects the facts and provides a 2007 overview of the global status of renewable energy. The research examines economics, investment, industry and policy patterns and renewable energy from the rural sector (off-grid). The essay is not meant to comment on current problems or anticipate green energy for the future [2-6]. Many of the achievements have demonstrated the relevance of renewable energy to traditional energy [7]. This research examines the rise in the usage of energy in the data centers in the US and worldwide from 2005 to 2010. It creates a coherent time series using data and the same methodology as previous evaluations. The major results of the study are as follows:

- The growth of an installed server base in data centers had already begun to decline before early 2007 due to virtualization and other causes.
- The financial crisis of 2008 and its consequent recession as well as further progress towards virtualization led to a significant drop in the real server installation base in 2010, in contrary to the installed basis projection of 2007.
- Between 2005 and 2010, the increase in energy utilization per server was probably more demand-intensive than between 2000 and 2005.
- Assumed that the intermediate point between the Upper and Lower Boundaries is a real reality, worldwide use of energy from data centers rose by around 56% between 2005 and 2010 instead of doubling (as it was from 2000 to 2005) and by approximately 36% in the USA.
- The overall energy consumption of global data centers was estimated in 2010 to be between 1.1% and 1.5%. The number in the United States ranged from 1.7% to 2.2%. In the United States, the quantity of power utilized in 2010 was somewhat lower than predicted in the Congress 2007 assessment of data centers. This conclusion showed lower growth rates for electricity than previously projected in this research (see Figure 1), prompted mostly by a smaller installed server basis than was expected rather than by the expected performance increases predicted in the Congress report [8-13].
- Although Google is a highly profile database server user, less than 1% of the world's energy utilizations by database centers accounted for the company's data center activities. In summary, the exponential growth that occurred between 2000 and 2005 in the data center electricity usage decreased significantly between 2005 and 2010, accounting for approximately 1.3 per cent of the total use of electricity by the data centers and 2 per cent for use by the United States in 2010 [14].

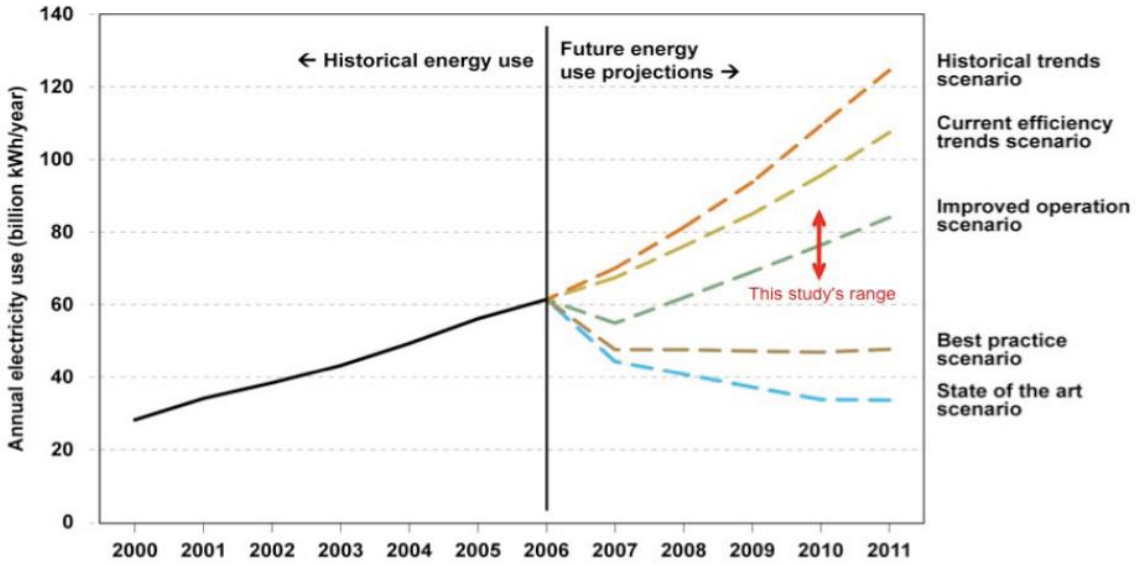

Figure 1: The Spectrum Measured In This Analysis an the Predicted US Energy Usage for Data Centers from the EPA Report to Congress (EPA 2007) [14]

In 2007, Intel has set themselves the objective of reducing its greenhouse gas global warming impact by 20 percent through 2012. By changing its IT activities and overall intellectual transactions via sustainable IT use, the Intel information technology group is regarded as an essential contribution to the business's sustainability goal [15-19]. According to this study, Intel has realised the benefits of sustainability to date by enhancing four major functions. The technologies were incorporated into the maturity framework for Sustainable Information Communications Technology (ICT), a model developed by an industry consortium in which the authors played an important role. The essay closes with lessons learned from Intel's insights into the application of firms and IT managers in other companies (see Figure 2) [20].

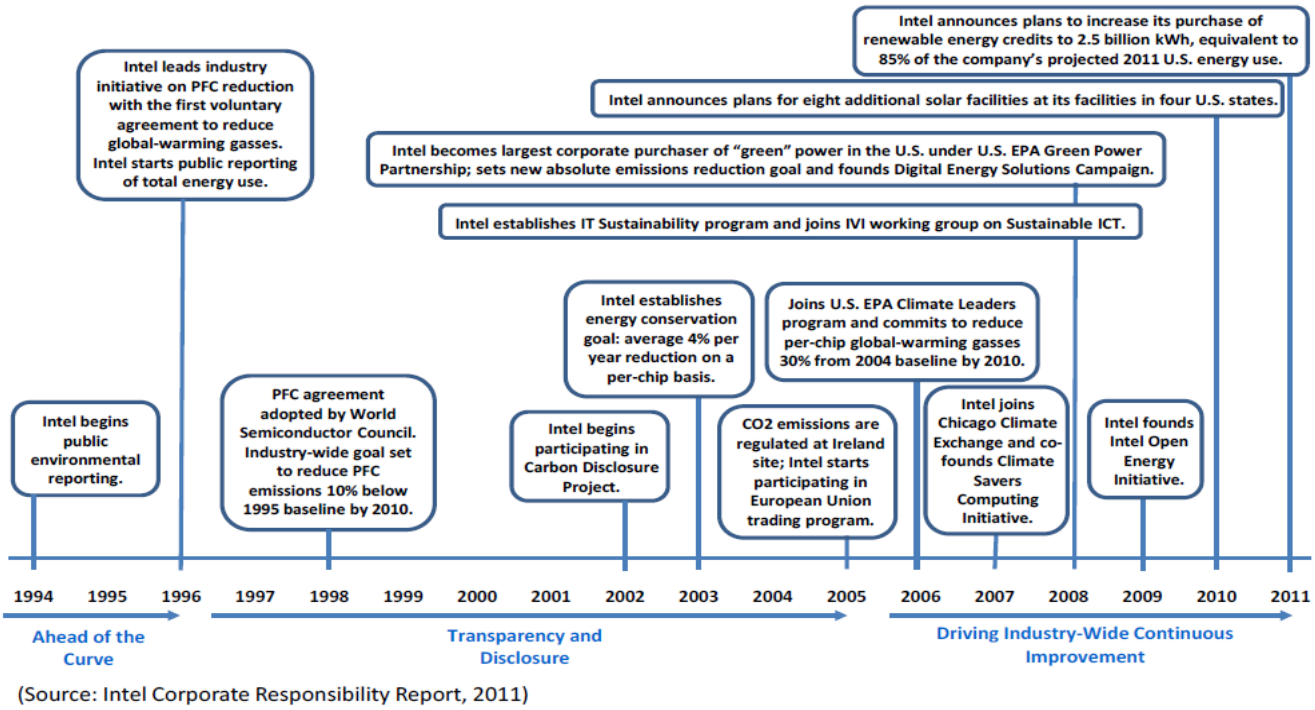

Figure 2: Climate Awareness Timeline for Green Energy from Intel. Intel Has Achieved The Sustainability Benefits So Far By Improving Four Main Capabilities, According To This Report [20]

2. LITERATURE REVIEW

B. Châte explained the study summaries framework related to solar and wind green energy applications, with a focus on developing countries. A summary of some of the major projects conducted by a range of United Nations agencies and bodies is given, including: and the Secretariat's Department of International Economic and Social Affairs; the Department of Technical Cooperation for Development and its Centre for Natural Resources, Energy, and Transport; federal commissions; financial institutions (United Nations Development Program and UNEP), the United Nations Industrial Development Organization (UNIDO), the United Nations Institute for Training and Research (UNITAR), and the United Nations University (UNO); specialist organizations such as World Health Organization (WHO); and the Committee on the Peaceful Uses of Outer Space (COPUOS). The upcoming, which was recently accepted by the United Nations General Assembly, is discussed in detail [21].

The United States invested in 2007 a new worldwide milestone, investing more than 100 billion dollars in new renewable energy, industrial plants and research & development. But renewable energy goals have fallen behind reality in recent years because of the fast pace of development. This study provides a summary and evaluation of the global status of green energy in 2007. The research examines changes in environment, finance, production and policy, as well as renewables from rural (off grid) sources. This essay does not aim at analyzing, debating current concerns or forecasting green energy for the future. As a result of a series of developments, renewable energy becomes more essential than conventional energy. This research examines the increase in energy usage of data centers between 2005 and 2010 in the U.S. and throughout the world. It uses same data and methodologies than prior research to generate a consistent series of data center energy usage. The world's resources would never be depleted from renewable energies like the wind, sun and tidal energies. They are abundant and unlimited in nature, yet we utilize them frequently. Everything is provided at or for a discounted cost. It contributes to the eradication and overall well-being of all living things on the earth of emissions of greenhouse gases. Energy can't be created or lost, but it may be transformed from one form to another in accordance with energy conservation legislation. As a result, power for critical uses can also be generated.

3. RESOURCES AND RENEWABLE ENERGY

Renewable fuels, such as wind, sun, and tidal, may never exhaust the planet. It's extensive and endless in nature, despite the fact that we utilize it regularly. They may be available for a cheap or free price. It helps to reduce air pollution and enhance the health of all living creatures on the earth. No energy may be generated or lost, but it can be changed from one form to another, in accordance with the energy conservation rule. This also makes it feasible to generate energy for needed reasons. Let us examine every renewable resource more closely [22,23].

3.1 Energy from the Sun

The sun, which is hundreds of kilometers from the planet, emits the brilliant and huge radioactive energy. In solar cells, too much green energy is stored. Energy is gathered for production throughout the day and household appliances are also widely utilized, such as solar cookers, solar water heaters, solar calculators and solar panels. For heating, drying, and pasteurization, solar cookers rely on the sun. Concentrated solar panel systems direct a broad field of sunlight via lenses and mirrors via a small beam. Photovoltaic transforms light into electricity by use of the photoelectric effect. Solar energy is another name for solar energy. According to the 2000 World Energy Assessment for solar power of the United Nations Development Program, there are 1,575 to 49,837 solar panels each year (EJ). This is far higher than the total demand for world energy in 2012, estimated at 559.8 EJ. The Earth absorbs 174 PW of solar radiation on the top layer of the atmosphere. The rest of it reflects back to space with around 30 percent. The beams of the sun retain the surface of the Earth at 14°C. Green plants are transforming solar power into chemically stored energy, which is used for the production of fossil fuel fruit, wood and biomass. Solar energy generates most electricity in the world while lowering greenhouse gas emissions, the International Energy Agency said [24].

3.2 Biofuel and Biogas

Biofuel is generated in a non-oxygen environment by the breakdown of organic waste. Examples of organic waste include agricultural waste, sewage and food waste. As a result, there is no net CO2 produced (carbon dioxide). In future decades if CO2 emissions are not considered, the atmosphere on the Earth will change irreversibly leading to catastrophes. As of 2011, biogas had been utilized to cook in more than 44 million households. Powerful biofuels such as compressed natural gas (CNG) are utilized for vehicles instead of petrol or gasoline. Ethanol is the world's most common biofuel. It generates alcohol fuels obtained by rice, sugar cane, molasses and other sugar or starch. The three methods used to transform bio mason into usable energy-containing compounds include thermal conversion, chemical conversion and biochemical converting. The conversion of biomass produces fuel that is solid, liquid or gaseous. The first generation or conventional bio fuels are called organic fuels from food crops grown on favorable soil. Second-generation biofuels are oils produced by various biomasses. Biomass is a wide phrase for any fast-renewed resource within the carbon cycle. Algae cultivation and algae fuel are the first examples of third generation biofuels that can produce green diesel with vegetable oils and animal fats [25].

3.3 Power of the Winds

Generator control for power generation. Wind energy is plentiful, sustainable, clean, and free of greenhouse gas emissions, low power consumption, and soil requirements. Wind turbines are equipment which turn the wind's kinetic energy into power. Since 2015, Denmark has been producing. A wind farm is a group of wind turbines with land that may be utilized for agriculture or for other purposes between them. More than 200,000 turbines with a global output of 432 Giga watts had been deployed worldwide

by 2015. Wind power fuel costs are not available [26].

3.4 Wave/Tidal Energy

There are waves that run along the surface of the water. Converts the intermit tier up and down movement of ocean waves into electricity by placing equipment on the surface of the water that gathers and translates wave movement-generated mechanical energy into power. A wave power converter (WEC) is a wave control system. It is believed that coastal wave energy has more than 2 Tera Watts of worldwide resource. It is free of emissions since wave energy creates little or no pollution, as contrast to other renewable energies. The tides are dispersed along the banks to avoid erosion of the coast. The situation in the deep ocean is around three to eight times that of shorelines, where fish and marine animals migrated did not cause issues.

4. OBJECTIVES OF GREEN TECHNOLOGY

Any task to fulfil to suit the requirements of today's age. Researchers need to take into consideration hazards, too, not simply the advantages of sophistication. The main objectives of green energy technology are to satisfy demands without damaging resources or the environment. This involves the usage of sustainable materials in the environment. Researchers will waste many resources if they wish to create each time. The objective is then to recycle the recycled materials. Researchers call the 3R concept in greater depth, which includes

- Reduce
- Reuse
- Recycle

Reducing implies lowering waste or removing the desire for surplus. Through waste consciousness, researchers may lead healthy lives for current and future generations. For example, researchers may utilize an online document rather than utilizing paper for anything. Reuse materials throughout the recycling process is another option for disposal of trash.

The phrase recycled refers to the way old materials are collected, processed and recycled. This can limit pollution levels. Also readily recyclable items are glass, paper and metal. The US person creates 730 kg of trash annually just in the United States. For example, the degradation of coke aluminum tins into the earth may take up to 50 years. Instead of being tossed, they must.

The recycling of these tins saves sufficient power to run a 3-hour TV program. A pound of steel recycling saves sufficient power to power up a light bulb of 60 watts a day. Each journal may be recycled for reuse instead of cutting down trees for new documents.

5. DISCUSSION

5.1 Green Technology Branches

Green Technology is divided into five categories:

- Electricity
- Information Technology
- Nanotechnology
- Buildings
- Chemistry

5.2 Electricity

It comes from energy sources such as sunlight, wind and biomass that are renewable green. Traditional energy supplies reliant on the combustion of carbon burning release CO2, which is responsible for most emissions, into the environment, as we all know. Toxins that affect the environment, which is believed to be the principal source of world war, are included. The International Energy Agency (IEA) says that roughly a tenth of the global energy expenditure will be saved by a widespread shift to energy-efficient lighting systems. Environmentally friendly bulbs offer a sustainable way of saving both energy and resources. Motion sensors assist to keep lights off while not in use, dimmers offer the optimum lighting, and timers change the material they need. A green automobile is a road vehicle which is less polluting. The quantity of greenhouse gases causing climate change increases with vehicle emissions. Over 85 percent of transport greenhouse gas emissions accounts for CO2 emissions from road vehicles. The most greenhouse gases are produced by the transport industry.

5.3 Green IT

Green Computing, often known as green ICT, has been designed by the International Federation of Global and Green ICT to research and use ecologically friendly computing or information technology (IFGICT). As a consequence, carbon emissions from the information system would be minimized. Green networking and information management designs employ materials that adversely affect the environment via human contact. Many corporate IT departments employ green computational techniques to decrease their IT activities' environmental effect. All people, networks and hardware are key components for current IT systems and must all be addressed through a green computing method. Five important areas in which energy-efficient data center best practice should be targeted should be recognized by the Department of Energy of the United States:

- IT systems
- Environmental conditions
- Air management
- Cooling systems
- Electrical systems

First appeared Term Green IT Energy Star has been created by the U.S. Environmental Protection Agency, a program that allows companies, via energy efficient items, to save money and decrease greenhouse gases emissions. There are several advantages to green computing, including reduced environmental effects (lower GHG emissions, less electric waste and fewer virgin materials used in the manufacturing of modern equipment), lower energy prices, and longer lasting computing systems as well as reduced safety risks for engine workers.

5.4 Green Nanotechnology

Green nanomaterials and gadgets for the atmosphere and humans are produced in green nanotechnology. Manufacture micro and Nano products utilizing low temperature non-toxic materials and renewable inputs. Green nanotechnology is designed to create non-atmospheric or human health-dangerous nanoparticles and technologies and products that deal with environmental concerns. Current green Nano-machinery breakthroughs are Nano-machinery modelled by Ideonella sakaiensis, a bioengineer bacterium used to consume plastics. Plastics degrade hundreds of times quicker than microorganisms bioengineered. Another prominent example is the Light Emitting Diode displays.

5.5 Buildings

Architecture refers to a structure that incorporates environmental and resource efficient procedures over a building's life cycle

including construction, operation, reparation and restoration, an additional 2% upwards, but it pays for itself 10 times over the course of its life. According to EPA studies, certified indoor emissions can attain a safe, more secure interior environment, improving the health of occupants and promoting the use of fewer chemical substances and the promotion of local labor and society. In the design of green buildings, the following materials are used:

- Low volatile organic compounds paints
- Bamboo flooring
- Cotton bat insulation
- Ecological concrete
- Paper insulation panels
- And good ventilation

5.6 The Benefits of Green Technology

The below are the key benefits of renewable technologies:

- Saving of Energy
- Friendly to Environment
- Cost Effective
- Save Power
- Reuse of Natural Resources

6. CONCLUSION

As a result it is easy and environmentally damaging to generate power from renewable resources. This green technology makes living easier and more reliable. In particular, air quality needs to be checked, as it constantly deteriorates leading to an exponential increase in mortality. According to a 2014 WHO study, Delhi is the first capital to surpass acceptable levels of pollution. Nine fold greater than the allowed amounts were observed in 2013. The increasing density of vehicles caused respiratory disturbances and fatalities due to soil particles and smoke. It was said that PM 2.5 with PM10, with a concentration of 250 to 350, would have significant health and pulmonary problems, and PM 2.5 with a concentration of more than 153 in Delhi and other areas of the world. As a result, it is vital that waste is minimized and our environment protected. People are not the only ones impacted; if no action is taken, both animals and fish are also affected. It is vital to consider about our atmosphere and encourage ecologically friendly products, rather than increasing into hazardous materials or radioactive substances.

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