

“Green Globalization as Green Technology and Renewable Energy”

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I. INTRODUCTION:

Globalisation is the act of Globalizing from the noun “global” meaning “pertaining to or involving the whole world”, “worldwide”, “universal” (Oxford English Dictionary). Globalisation as a concept referred both to the “shrinking” of the world and the increased consciousness of the world as a whole. It is a term used to describe changes in societies and the world economy that are the result of dramatically increased cross-border trade, investment and cultural exchange (New World Encyclopaedia) Globalisation is the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice-versa (Giddens, 1990:64)



Globalisation has been the definition trend in the closing decade of the 20th century and the dawn of new millennium heralding a new era of interaction among nations, economies and people. Globalisation is an on-going process of global integration that encompasses (i) economic integration through trade, investment and capital flows; (ii) political interaction; (iii) information and information technology and (iv) culture. While all dimensions of globalization affects the natural environment and through it human development.

Globalisation is the process by which all peoples and communities come to experience an increasingly common economics, social and cultural environment. By definition, the process affects everybody throughout the world. Globalisation viewed as a process of economic integration that embraces government as well as market. (Boyce, 2004)

II. GLOBALISATION AND THE ENVIRONMENT

Globalisation has meant an important conceptual change in the way we think about the environment. Many of us see environmental problems as being of international concern, not just national interest but protection of the environment. The environment is now considered the “Common heritage of mankind” and environmental problems are increasingly the subject of international efforts because of their cross-border effects and the impossibility that just one or a few nation can solve these problems on their own. (Baslar, 2008)



The processes that we now think of as “Globalisation” were central to the environmental cause well before the term “Globalisation” came into its current usage. Global environmental concerns were born out of the recognition that ecological processes do not always respect national boundaries and that environmental problems often have impacts beyond borders; sometimes globally.

Connected to this was the notion that the ability of humans to act and think at a global scale also brings with it a new dimension of global responsibility- not only to planetary resources but also to planetary fairness. The current debate on Globalisation has become de-linked from its environmental roots and context. These links between environment and Globalisation need to be re-examined and recognized. To ignore these links is to misunderstand the full extent and nature of Globalisation and to miss out on critical opportunities to address some of the most pressing environmental challenges faced by humanity. Human Civilization uses technology for supporting day to day activities of life. New technologies are more efficient and environment friendly due to increased awareness and recent development in research areas of energy management. The adoption of technology is limited and has adverse effects on environment and human civilization. Therefore, scope exists for application of new technologies which are more environments friendly for supporting day to day activities of an urban lifestyle. In developing countries energy consumption inside building is also growing.

A more integrated world community bring both benefits and problems for all; it affects the balance of economics, political and cultural power between nations, communities and individuals and it can both enhance and limit freedoms and human rights. Social workers, by the nature of their work, tend to meet those who are more likely to have suffered the damaging consequences of some aspects of Globalisation. In an era of drought, climate change and food shortages, environmental explorers have joined to handle some of the world's most typical issues through technological advancement. Some of the expanding technologies that have the capability to revolutionize our planet of commercialising. Some are currently in development and remaining are trying to get a greater hold in society but all are auspicious solution to some very real threats the world is facing.

III. GLOBALISATION AND ITS ALARMING IMPACT ON THE ENVIRONMENT

Globalisation has had far-reaching effects on our lifestyle. It has led to faster access to technology, improved communication and innovation. Apart from playing an important role in bringing people of different cultures together, it has ushered a new era in the economic prosperity and has opened up vast channels of development. However, Globalisation has also created some areas of concern and prominent among these is the impact that it has had on the environment.



Globalisation has featured extensively in the debates on environmentalism and green activists have highlighted its far-reaching effects. Activists have pointed out that Globalisation has led to an increase in the consumption of products, which has impacted the ecological cycle. Increased consumption leads to an increase in the production of goods, which in turn puts stress on the environment.

Globalisation has also led to an increase in the transportation of raw materials and food from one place to another. Earlier, people used to consume locally-grown food but with Globalisation, people consume products that have been developed in foreign countries.

The amount of fuel that is consumed in transporting these products has led to an increase in the pollution levels in the environment. It has also led to several other environmental concerns such as noise pollution and landscape intrusion. Transportation has also put a strain on the non-renewable sources of energy, such as gasoline. The gases that are emitted from the aircraft have led to the depletion of the ozone layer apart from increasing the greenhouse effect.

The industrial waste that is generated as a result of production has been laden on ships and dumped in oceans. This has killed many underwater organisms and has deposited many harmful chemicals in the ocean. The damage cause to ecosystem from the oil that spilled from one of the leaking container is just one of the examples of the threat Globalization poses to the environment.

Due to Globalization and industrialization, various chemicals have been thrown into the soil which has resulted into the growth of many noxious weeds and plants. This toxic waste has caused a lot of damage to plants by interfering in their genetic makeup. It has put pressure on the available land resources.

In various parts of the world, mountains are being cut to make way for a passing tunnel or a highway. Vast barren lands have been encroached upon to pave way for new buildings. While humans may rejoice on the glimmer with these innovations,

these can have long-term effects on the environment.

Various studies over the years, have found that plastic is one of the major toxic pollutants, as it is a non-biodegradable products. However, plastic is of immense use when it comes packaging and preserving goods that are to be exported. This has led to increased use of plastic, causing widespread environmental pollution.

It has made so many changes in our lives that reversing it is not possible at all. The solution lies in developing effective mechanisms that can check the extent to which it can impact the environment. Researchers are of the view that the answer to this problem lies in the problem itself, that is, Globalization itself can lend support to building a better structure which is economically feasible and environmentally-friendly. Globalization is about competition, and if certain privately owned companies can take the lead in being environment friendly, then it will encourage others to follow suit.

It is important that we put in some efforts to maintain harmony with the environment. The survival of human race on this planet is dependent on the environment to such a large extent that we cannot afford to ignore the consequences of our own action.

IV. GLOBALISATION CAUSES RISE IN POLLUTION LEVEL

Global Warming:

Global warming is also called Climate Change which refers to the worldwide rise in temperature that has been blamed for severe weather in many parts of the world.



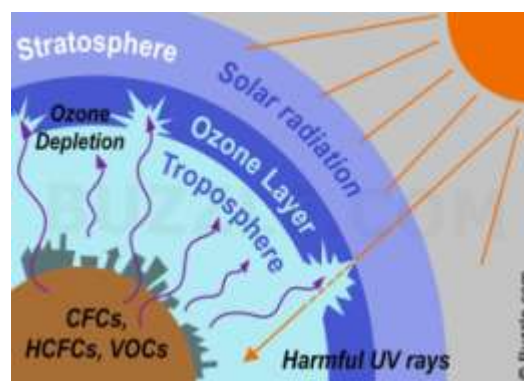
According to the Intergovernmental Panel on Climate Change (IPCC) a worldwide consortium of scientists set up in 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), the world's average temperature has risen by 1.1°F (0.6°C) over the past century. The Earth

Policy Institute reported that 2010 was the hottest year on record with an average global temperature of 14.63 degrees Celsius (EPI,2008). The Intergovernmental Panel on Climate Change (IPCC) also predicts an increase in average temperature between 2.5°F (1.4°C) and 10.4°F(5.8°C) over the next century, a rate of warming unprecedented in the last 10,000 years.

The cause of global warming is human activity, including fossil fuel combustion associated with industrial development, the burning of forests by farmers in the developing world and even **biomass** combustion – the burning of wood, coal and dung for cooking and heat – by the poor. These activities have produced emission of gases, such as chlorofluorocarbons (CFCs) and hydrochlorocarbons (HCFCs), which contains elements such as carbon dioxide, methane, nitrous oxides and chlorine, fluorine and bromide (together called halogens). Chlorofluorocarbons (CFCs) and hydrochlorocarbons (HCFCs), are often described as “Greenhouse Gases” because they warm the atmosphere by trapping heat from the sun and cause the “Greenhouse Effect”.

Depletion Of Ozone Layer:

Like global warming, depletion of the ozone layer raises complex problems of cause and effect that have led to international disagreements over coordination efforts to reverse the problem. Unlike global warming, ozone depletion has actually been successfully controlled by international cooperation, perhaps providing a model for other effect at global environmental protection.



Ozone is an invisible, poisonous gas molecule (O₃) that exists in trace (minimal) amount in the stratosphere (6-30 miles above the earth). It makes life on earth possible by shielding the planet from 95-99 per cent of the sun's harmful ultra-violet (UV) rays, which can cause skin cancer, degenerative eye damage and suppressed immune response. Rodents subjected to UV **irradiation** are

more likely to die from viruses such as malaria, influenza and herpes.

In addition, increased UV radiation upsets the balance of ecosystem and disrupts many chemicals and physical processes that occur in nature's cycle. For example, elevated UV levels have been shown to compromise the aquatic food chain, alter plant-insect interactions, change the growth patterns of fungi and slightly reduce the productivity of agricultural plants.

Basic, natural cycles involving nitrogen, sulphur, carbon dioxide and decomposition of biological matter are also affected. Also, increased UV radiation in the lower atmosphere or troposphere helps cause photochemical smog.

The main cause of ozone depletion is emission from man-made sources of halocarbons, most notably chlorofluorocarbons (CFCs). Discovered in the early 20th century, these "wonder gases" were renowned for their industrial properties and used in a wide range of application, including refrigerators, air conditioners, aerosol spray cans, solvents, foams and fire extinguishers. The downside of these gases is that they linger in the atmosphere – 50, 65, 100 or as long as 1,700 years – and thus cause long lasting environmental damage. The chlorine in CFC interacts chemically with ozone and breaks it up into constituent molecules of oxygen, reducing the capability of the ozone layer to block UV rays (Clark, 2011)

The gases that are emitted from the aircraft have led to the depletion of the ozone layer apart from increasing the Greenhouse Effect. The industrial waste that is generated as a result of production has been laden on ships and dumped in oceans. This has killed many underwater organisms and has deposited many harmful chemicals in the ocean. The damage caused to ecosystem from the oil that spilled from one of the leaking containers of Petroleum is just one of the examples of the threat Globalisation poses to the environment.

Desertification:

Desertification is caused by a combination of climatic variations and human activities. Untouched dry lands suffer during periods of drought but are generally able to recover on their own. However, when these areas are simultaneously exploited for human economic gain, the combined stress on the ecosystem can be too much. Thus, over-cultivation, over-grazing, deforestation and poor irrigation by humans play a large role in the deforestation problems.



The result of desertification can be disastrous. The key effort is the loss of the primary resources – fertile topsoil, vegetation and crops – that sustain economic activities. In impoverished regions, such as sub-Saharan Africa, the ramification is serious. The results of desertification are serious. If desertification progresses enough, the already marginalized people who depend on this land will find that the land can no longer provide enough food and water for survival. The result is famine that starves many people and animals, forces large displacements of population and entails massive economic disruption.

Soil Pollution:

Soil Pollution is an insidious form of contamination because of both the range of pollutants and the amount of remediation. It is the contamination of soil with harmful substances that can adversely affect the quality of the soil and the health of those living on it.



It can be due to build-up of upper layer of soil from toxic chemicals and compounds, radioactive materials, salts, waste, etc. all of which have an adverse effect on the growth of plants and animals and on human beings.

Due to Globalisation and industrialization, various chemicals have been thrown into the soil which has resulted into the growth of many noxious weeds and plants. This toxic waste has caused a lot of damage to plants by interfering in their genetic

makeup. It has put pressure on the available land resources.

Encroachment Of Land:



Encroachment mainly refers to felling of trees to clear land for agriculture, as well as processes like desertification and land conversion. Desertification is when anthropogenic effects of human development and other actions converted a piece of fertile land into desert-land or dry land. Land once converted to desert-land can never be reclaimed by any amount of corrective measures. This is also a serious issue because it does not only affect the land, but also the overall biodiversity of a place, especially when land is cleared for agriculture. A lot of indigenous flora and fauna are lost in the process.

In various parts of the world, mountains are being cut to make way for a passing tunnels or a highway. Vast barren lands have been encroached upon to pave way for new buildings. While humans may rejoice on the glimmer with these innovations, these can have long-term effects on the environment.

Increase In Consumption Of Fuel:

The amount of fuel that is consumed in transporting these products has led to an increase in the pollution levels in the environment.



It has also led to several other environment concerns such as noise pollution and landscape intrusion. Transportation has also put a

stain on the non-renewable sources of energy, such as Gasoline.

Another environmental impact is fossil fuel usage contributes to air pollution, acid rain, smog etc. Burning fossil fuels increase the amount of many chemicals in the atmosphere, including nitrogen oxides and sulphur oxides, which eventually lead to increased amounts of acid rain. Acid rain can destroy the leaves of plants, poison soil and waterways and ultimately kill many animals and plants (Outdoor Air Pollution). On a more of a human impact level, air pollution caused by the burning of fossil fuels can eventually lead to things such as lung disease and cancer (Air Pollution). Another effect that takes place is smog formation. Smog is a problem in many city areas and contributes to low visibility and “dirty skies”

Plastic Is The Major Cause Of Pollution:

Various studies over the years, have found that plastic is one of the major toxic pollutions, as it is a non-biodegradable product, with the potential to cause great harm to the environment. However, plastic is of immense use when it comes to packaging and preserving goods that are to be exported. This has led to increased use of plastic, causing widespread environmental pollution.



Plastic pollution is defined as the accumulation of the different types of plastic material on land, as well as in water bodies like rivers, oceans, canals, lakes, etc. it is a synthetic polymer that consists of many organic and inorganic compounds, and is mostly derived from petrochemicals like olefins. Plastic degrades in about 500-1000 years, though we may never know its actual degradation time, as this material has been in long term use only since the last century. During its manufacture, many hazardous chemicals are emitted that can lead to dreadful diseases in humans as well as other animals. Ethylene oxide, xylene and benzene are some of the chemical toxins present in plastic, which can have hazardous effects on the environment. It is not easy to dispose it off and it can cause permanent harm to living beings. Several additives found in plastic, such as phthalates, adipates and even alkyl phenols, have

been recognized as toxic materials. Vinyl chloride, which is used in the manufacturing of PVC pipes, is classified as a carcinogen.

Globalisation has made so many changes in our lives that reversing it is not possible at all. The solution lies in developing effective mechanisms that can check the extent to which it can impact the environment. Researchers are of the view that the answer to this problem lies in the problem itself, that is, Globalisation itself can lead support to building a better structure which is economically feasible and environment-friendly. Globalisation is about competition can take the lead in being environment friendly, then it will encourage others to follow suit. It is important that we put in some efforts to maintain harmony with the environment the survival of human race on this planet is dependent on the environment to such a large extent that we cannot afford to ignore the consequences of our own actions.

Globalisation As Green Technology



The word “**Green Technology**” is almost new which has been adopted over the last couple of decades. Green is the way to go today for healthy life. Green Technology is a term which came into limelight when the world felt that there is urgency in the direction of environmental and ecological stability. There is no such exact definition of Green Technology but United Nation defined Green Technology as “**Technology that has the potential to significantly improve environmental performance relative to other technology. It is related to the term environmental sound technology**”.



Green Technology is the application part of branches of science which tries to conserve the natural environment and to minimize the adverse impacts of human activity. It is related to sustainable technologies. Technology is application of knowledge to practical requirements. Green technologies encompass various aspect of technology which helps us reduce the human impact on the environment and create ways of sustainable development. Social equitability, economic feasibility and sustainability are the key parameters for Green Technologies.

Green Globalisation is a relatively new term that stands for sharing knowledge on green development between international organizations and their local counterparts. Green Globalisation can help the developing world create sustainable development plans, by creating a global base for green knowledge and experiences that can be exchanged between communities freely, without standardized models that may not be suitable for all cultures or climates. Green Globalisation is defined as the exchange of green knowledge and experiences for sustainable development as a working alternative.

Different Types Of Green Technology

Green technology covers a broad area of production and consumption technologies. The adoption and use of green technologies involves the use of environmental technologies for monitoring and assessment, pollution prevention and control, and remediation and restoration.



Monitoring and assessment technologies are used to measure and track the condition of the environment, including the release of nature or anthropogenic materials of a harmful nature. Preventing technologies avoid the production of environmentally hazardous substances or alter human activities in ways that minimize damage to the environment; it encompasses product substitution or the redesign of an entire production process rather than using new pieces of equipment. Control technology renders hazardous substances harmless before they enter the environment. Remediation and restoration technology embody method designed to improve the condition of

ecosystem, degraded through naturally induced or anthropogenic effects.

V. APPLICATIONS OF GREEN TECHNOLOGY IN OUR LIFE

Solar Array

One of the best examples of green technology would be the solar cell. A solar cell directly converts the energy in light into electrical energy through the process of photovoltaic. Generating electricity from solar energy means less consumption of fossil fuels, reducing pollution and greenhouse gas emissions.

Reusable Water Bottle

Another simple invention that can be considered green is the reusable water bottle. Drinking lots of water is healthy. Reducing plastic waste is great for the environment. Hence, trendy reusable water bottles that can refill yourself are healthy-promoting, eco-friendly and green.

Solar Water Heater

Installing a solar water heater can be a great way to cut down on energy costs at a much lower initial expense. The costs associated with the installation of a solar water heater are actually recouped much faster than the cost associated with photovoltaic technology for power generation. This is due to the increased efficiency of solar water heating system, as well as their reduced expense when compared to the large solar array required for powering a home.

Wind Generator

The costs of a home wind generator vary greatly. Some have built their own wind generators with off-the-shelf parts from their local hardware stores. Others have purchased kits or paid for professional installation to supplement the power purchased from their local electrical grid. The power production capability of a home wind generator varies about as much as the initial expense. Many kit based generators will produce only enough power to offset 10-15% of your home energy costs.

Rainwater Harvesting System

Rain collector systems are extremely simple mechanical systems that connect to a gutter system or other rooftop water collection network and store rain water in a barrel or cistern for later non-potable use (like watering plants, flushing toilets and irrigation). These systems are extremely inexpensive.

Insulate Our House

Based on Environmental Protection Agency (EPA) estimates, 10% of household energy usage a year is due to energy loss from poor insulation. We will get an excellent return on investment from sealing our home to prevent energy escape.

Benefits Of Green Technology

Power generation is another sector where Green Technology might create wonders. Distributed generation technology e.g. solar photovoltaic, biogas production, wind power etc., have practically proven that they can provide more employment opportunities to people and can be applied to provide energy solutions to communities in remote areas successfully.

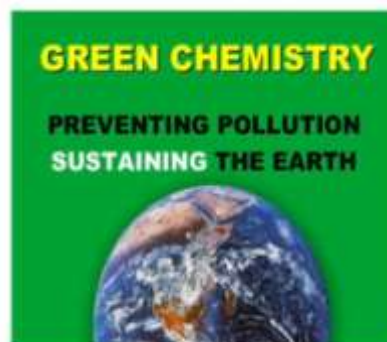
Provision of bio-gas plants to rural household has empowered communities and has increased their productivity. People have also been benefited by solar lantern and not only using the outputs personally but also by trading it. Using eco-friendly technologies such as solar cookers, mud refrigerators and sustainable farming practices.

CNG fuelled public transport is used as to improve air quality where the toxic gas levels were off the chart, sometimes exceeding 5-12 times the normal values and it shows a steady improvement in the air quality.

VI. BRANCHES OF GREEN TECHNOLOGY

- **Green Chemistry**

Green chemistry also called **Sustainable Chemistry**.



It is a philosophy of chemistry research and engineering that encourages the design of products and processes that minimizes the use and generation of hazardous substances. In 1990 the Pollution Prevention Act was passed in the United States. This act helped create a modus operandi for dealing with pollution in an original and innovation way. It aims to avoid problems before they happen. As a chemistry philosophy, green chemistry applies to organic chemistry, inorganic chemistry,

biochemistry, analytical chemistry and even physical chemistry.

- **Green Nano Technology**



Nanotechnology involves the manipulation of materials at the scale of the nanometre, one billionth of a meter. Some scientists believe that mastery of this subject is forthcoming that will transform the way that everything in the world is manufactured. “Green nanotechnology” is the application of green chemistry and green engineering principles to this field.

- **Green Building**

Green building uses a variety of environmentally friendly techniques to reduce their impact on the environment.



Reclaimed materials, passive solar design, natural ventilation and green roofing technology can allow building to produce a structure with a considerably smaller carbon footprint than normal construction. These techniques not only benefit the environment but they can produce economically attractive buildings that are healthier for the occupants as well. The chief benefits of building green are reducing a building’s impact on the environment. Using green building techniques can also reduce the costs associated with construction and operation of a building. Green ventilation techniques involve open spaces and natural airflow, reducing the need for traditional air conditioning and preventing many of these problems.

- **Green IT**

Green IT or IT sustainability is the study and practice of environmentally sustainable IT or computing.



This can include “designing, manufacturing, using and disposing of computers, servers and associated subsystems efficiently and effectively with minimal or no impact on the environment. Besides IT itself being green, it can support, assist and leverage other environmental initiatives to achieve energy efficiency and reduce carbon footprint in every walk of life by offering innovative solutions. In addition to moving itself in a greener direction an leveraging other environmental initiatives, ICT could also help create green awareness by assisting in building communities, engaging groups and supporting education and green advocacy campaigns.

Green IT projects:

- 1) Development of ICT technology for smart buildings with low carbon emissions
- 2) Project partner: CDAC, Chennai & CDAC, Bangalore.

- **Green Energy/Renewable Energy**

Green energy sometimes called **Renewable Energy or Sustainable Energy**.



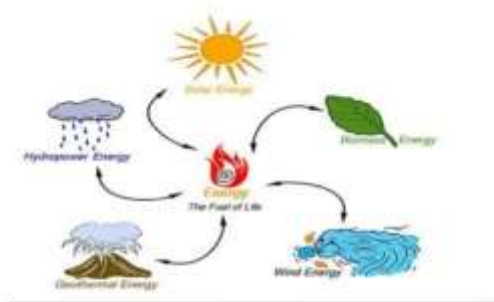
Green energy comes from natural sources such sunlight, wind, rain tides, plants, algae and geothermal heat. These energy resources are renewable, meaning they are naturally replenished. In contrast, fossil fuels are a finite resource that take millions of years to develop and will continue to diminish with use. Green energy is much more environmentally friendly than other types of energy and doesn’t contribute to climate change or global

warming. Unlike fossil fuels green energy sources replenish naturally and are in continuous supply.

Renewable energy sources also have a much smaller impact on the environment than fossil fuels, which produce pollutants such as greenhouse gases as a by-product, contributing to climate change. Gaining access to fossil fuels typically requires either mining or drilling deep into the earth, often in ecologically sensitive locations.

VII. TYPES OF GREEN ENERGY/RENEWABLE ENERGY

There are many forms of renewable energy.



Most of these renewable energies depend in one way or another on sunlight. Wind and hydroelectric power are the direct result of differential heating of the Earth's surface which leads to air moving about (wind) and precipitation forming as the air is lifted. Solar energy is the direct conversion of sunlight using panels or collectors. Biomass energy is stored sunlight contained in plants. Other renewable energies that do not depend on sunlight are geothermal energy, which is a result of radioactive decay in the crust combined with the original heat of accreting the Earth and tidal energy, which is a conversion of gravitational energy.

Solar Energy:

This form of energy relies on the nuclear fusion power from the core of the Sun. This energy can be collected and converted in a few different ways. The range is from solar water heating with solar collectors or attic cooling with solar attic fans for domestic use to the complex technologies of direct conversion of sunlight to electrical energy using mirrors and boilers or photovoltaic cells.



The Earth receives an incredible supply of solar energy. The sun, an average star, is a fusion reactor that has been burning over 4 billion years. It provides enough energy in one minute to supply the world's energy needs for one year. In one day, it provides more energy than our current population would consume in 27 years. In fact, "The amount of solar radiation striking the earth over a three-day period is equivalent to the energy stored in all fossil energy sources."

The conversion of sunlight into electricity is made possible with the special properties of semi-conducting materials. It can be harnessed through a range of ever-evolving technologies like solar heating, photovoltaic, solar thermal energy, solar architecture, molten salt power plants and artificial photosynthesis.

Wind Power:

The movement of the atmosphere is driven by differences of temperature at the Earth's surface due to varying temperatures of the Earth's surface when lit by sunlight. Wind energy can be used to pump water or generate electricity but requires extensive areal coverage to produce significant amount of energy.



Wind energy is produced by wind turbines, which have rotating blades that harness the wind's kinetic energy. Wind turbines contain generators that harness the mechanical energy from the spinning blades to generate electricity.

Today, people are realizing that wind power “is one of the most promising new energy sources” that can serve as alternative fossil fuel-generated electricity. Wind power is now the world’s fastest growing energy sources and has also become one of the most rapidly expanding industries.

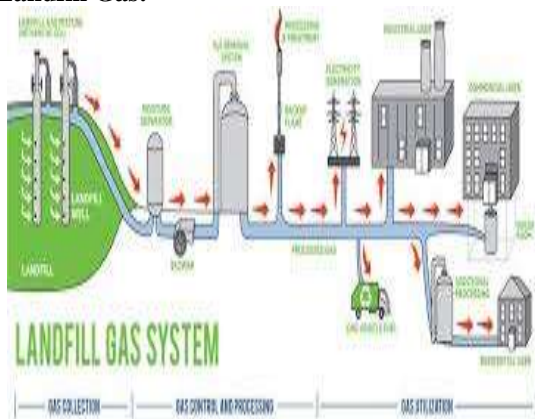
Hydroelectric:

A hydroelectric power station uses water flow to power a turbine. The turbines are connected to generators that produce energy through the use of water currents. The amount of energy generated is determined by the speed the water flows. Therefore, a swiftly flowing river will generate more electricity than a slower moving current.



This form uses the gravitational potentials of elevated water that was lifted from the oceans by sunlight. It is not strictly speaking renewable since all reservoirs eventually fill up and require very expensive excavation to become useful again. At this time, most of the available locations for hydroelectric dams are already used in the developed world.

Landfill Gas:



The waste we generate ends up in landfills, where it decomposes and produces

landfill gas made of approximately 50 per cent methane. This gas can be captured and used to fuel electric generators. Since large landfills must burn off this gas to reduce the hazards arising from gas building, this method of renewable energy is one of the most successful.

Biomass:

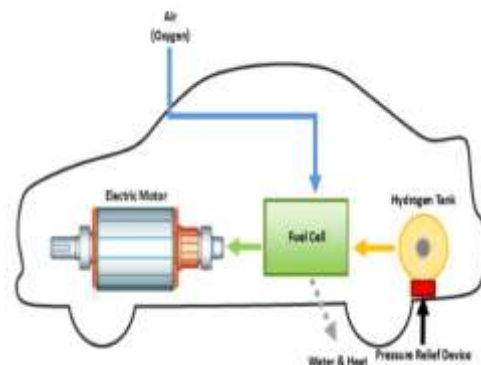
Biomass is produced when organic wastes-like trees, wood waste and agricultural residues- decay. This waste can be converted to fuel through combustion for the generation of electricity.



Biomass is the term for energy from plants. Energy in this form is very commonly used throughout the world. Unfortunately the most popular is the burning of trees for cooking and warmth. This process releases copious amount of carbon-di-oxide gases into the atmosphere and is a major contributor to unhealthy air in many areas. Some of the more modern forms of biomass energy are methane generation and production of alcohol for automobile fuel and fuelling electric power plants.

Hydrogen And Fuel Cells:

These are also not strictly renewable energy resources but are very abundant in availability and are very low in pollution when utilized.



Hydrogen can be burned as a fuel, typically in a vehicle, with only water as the

combustion product. This clean burning fuel can mean a significant reduction of pollution in cities. Or the hydrogen can be used in fuel cells, which are similar to batteries, to power an electric motor. In either case significant production of hydrogen required abundant power. Due to the need for energy to produce the initial hydrogen gas, the result is the relocation of pollution from the cities to the power plants. There are several promising methods to produce hydrogen, such as solar power.

Fossil and nuclear fuel reserves are becoming increasingly limited and the world's energy future will have to include several renewable alternatives to these failing resources. A promising possibility is to exploit the energy potential of the most plentiful elements in the known universe hydrogen.

Geothermal Power:



Energy left over from the original accretion of the planet and augmented by heat from radioactive decay seeps out slowly everywhere, everyday. In certain areas the geothermal gradient (increase in temperature with depth) is high enough to exploit to generate electricity. This possibility is limited to a few locations on Earth and many technical problems exist that limit its utility. Another form of geothermal energy is Earth's surface. Soil everywhere tends to stay at a relatively constant temperature, the yearly average and can be used with heat pumps to heat a building in winter and cool a building in summer. This form of energy can lessen the need for other power to maintain comfortable temperatures in building but cannot be used to produce electricity.

Other Forms Of Energy:

Energy from tides, the oceans and hot hydrogen fusion are other forms that can be used to generate electricity.

VIII. GLOBAL GREEN INITIATIVES

There are many initiatives in the world that encourages green living. Ties between the leaders of these initiatives and the corresponding bodies in the developing world should be established in order to exchange knowledge about ways to spread green consciousness and awareness in their countries. The following are some of those active movements;

- **World Architecture Day**

It is an annual event celebrated the first Monday of October every year by the International Union of Architects (UIA). Lately the UIA, like many international organizations, began to focus on the importance of environmental design.

- **Earth Day (Mother Earth Day)**

It is an annual global celebration intended to inspire awareness and appreciation for the natural resources and environment of Earth. The day was first celebrated on March 21, 1970, but then changed to April 22 later, in 2009, the United Nations designated April 22 of each year as the **International Mother Earth Day**.

- **Green built Expo and Conference**

Green built is an annual conference and exhibition organization by the USGBC (U.S.Green Building Council). It attracts 13,329 registrants in 2010, with 477 exhibitors and 43 countries represented (Foreign Policy Association 2010). The exhibition promotes green building industry, including environmentally responsible materials, sustainable architecture technique and public policy.

IX. CHALLENGES TO GREEN TECHNOLOGY ADOPTION

Green technology is more expensive than the technology it aims to replace, because it accounts for the environmental costs that are externalized in much conventional production process, because it is relatively new, the associated development and training costs can make it even more costly in comparison with established technologies. The perceived benefits are also dependent on other factors such as supporting infrastructures, technology readiness, human resources capabilities and geographic elements. Adoption and circulation of these technologies can be constrained by a number of other barriers. Some may be institutional, such as the lack of an appropriate regulatory framework; others may be technological, financial, political, cultural or legal in nature. From a company's perspective, the barriers to adopting green technologies are – High implementation costs, Lack of information, no

known alternative chemicals or raw materials inputs, uncertainty about performance impacts, Lack of human resources and skills. Overcoming these barriers is a complex process. Promoting green growth requires identifying and removing these barriers that hinder the large-scale dissemination of clean technology to developing countries.

X. CONCLUSION

Human have become an increasingly powerful environmental force over the last 10,000 years. With the advent of agriculture 8,000 years ago, they began to change the land. And with the industrial revolution, they began to affect their atmosphere. The recent increase the world's population has magnified the effect of their agriculture and economic activities (Torrey,2004).This situation has brought about globalization. With globalization pressures to the environment have increased.

Green globalization can be a positive working alternative for the negative impacts of globalization on development in the developing world. Networking with international green organization and participating in green initiatives and events worldwide can massively help developing countries stay updates with the cutting-edge trends and technologies in green architecture and urban planning, which can greatly support the endeavours to establish green communities in the developing world.

Consumer demand for green technology product is on the rise. Government customers are increasingly mandated to purchase green where available and the spectrum of products covered by such provisions is growing. The green in technology products is being installed in the R&D phase. Products are being reconfigured to use fewer hazardous substances, require less shipping material, and operate on less energy and promote end-of-life recycling. So in terms of environmental sustainability, the technology industries are embracing change. They are changing to avoid negative consequences or to meet green demand or to achieve both. Whatever their motivation, they are incontrovertibly shifting toward green.

REFERENCES

- [1]. Giddens, A. (1990). *The consequences of modernity*. Stanford: Stanford University Press
- [2]. Boyce, J.(2004), *Green and Brown? Globalization and the Environment*, Oxford Review of Economic Policy, vol.(20), p.105
- [3]. Baslar, K.(1998) *the concept of the common heritage of mankind in international law*. The Hague: MartinusNihhoffPublishers.
- [4]. Butler, R. (n.d.). *Deforestation in the Amazon*. Retrieved from <http://www.mongabay.com/brazil.html>
- [5]. Christoff. P. & Eckersley, R.(2013). *Globalisation and the environmental*. New York, USA: Rowman& Littlefield Publishers
- [6]. Environmental summit delegates call for new world environmental agency. (2007, February 04). Retrieved from http://english.people.com.cn/200702/04/eng_20070204_347389.html
- [7]. Simonis, U.(2002). *Global environmental governance: Speeding up the debate on a World Environment Organization*. Berlin: Science Centre Berlin
- [8]. Bromley, D.(2006). "Today Understanding Global Tension: Natural Resource and Competing Economic Histories." Resource Policies: Effectiveness, Efficiency and Equity.2006 Berlin Conference on the Human Dimensions of Global Environmental Change 17-18 November.
- [9]. Costanza, R.et al.(1997). "The Value of the World's Ecosystem Services and Natural Capital." *Nature*, Volume 387
- [10]. Daily, G.C.(1997) *Nature's Services: Societal Dependence on Natural Ecosystem*. Washington, DC: Island Press.
- [11]. Hempel, L.(1995). *Environmental Governance: The Global Challenge*. Washington DC: Island Press.
- [12]. Scholte, J.A.(2000). *Globalization :A Critical Introduction*. New York: Palgrave
- [13]. Esty, D.C.&Ivanova, M.H. (2003). *Globalization and environmental protection: a global governance perspective*. [Online] Available: <http://www.yale.edu/gegdialogue/docs/dialogue/oct03/papers/Esty-Ivanova.pdf> (January 04,2016)
- [14]. Irani, F.N. &Noruzi, M.R. (2011). *Globalization and challenges; What are the globalization's contemporary issues?* *International Journal of Humanities and Social Science*. 1(6): 216-218
- [15]. NewWorldEncyclopedia.*Globalization*. [Online] Available: <http://www.newworldencyclopedia.org/entry/Globalization> (January 07,2016)
- [16]. Oxford English Dictionary – 2nd edition (electronic edition). Oxford: Oxford University Press. [Online] Available: <http://www.oed.com/> (January 07,2016)
- [17]. Jorgenson, A.K. & Kick, E.L.(2003). *Globalization and the environment*. *Journal of World-System Research*, 9(2):195-205

- [17]. Panayotou, T. (2000). Globalization and environmental. [Online] Available: <http://archive.unu.edu/interlinkages/eminent/papers/WGI/panayotou.pdf> (January 20, 2016)
- [18]. Suresh, B.S. (2003). Globalization and urban environmental issues and challenges. In M.J. Bunch, V.M. Suresh & T.V. Kumaran (Eds.), Proceedings Book of the Third International Conference on Environment and Health (pp. 577-561). Chennai, India: Department of Geography, University of Madras and Faculty of Environmental Studies
- [19]. Torrey, B.B. (2004). Urbanization: An environmental force to be reckoned with [Online] Available: <http://www.prb.org/Publications/Articles/2004/UrbanizationAnEnvironmentalForceToBeReckonedWith.aspx> (January 11, 2016)
- [20]. A Smarter Shade of Green: How Innovative Technologies Are Saving Energy, Time and Money, Technology CEO Council, 2008.
- [21]. Acemoglu, D., Aghion, P., Bursztyn, L., Hemous, D., The environment and directed technical change, *American Economic Review* 102, 131-166, 2012.
- [22]. Tsur, Y., Zemel, A., On the dynamics of competing energy sources. *Automatica* 47, 1357-1365, 2011.
- [23]. Green Building Overview (2012), Retrieved from <http://www.neogbc.org/UIA> (2012), Retrieved from <http://www.uia-architectes.org>
- [24]. World Green Building Council- About (2011), Retrieved from <http://www.worldgbc.org>
- [25]. World Green Building Council Directory (2012), Retrieved from <http://www.wgbc.org>
- [26]. A Smarter Shade of Green: How Innovative Technologies Are Saving Energy, Time and Money, Technology CEO Council, 2008
- [27]. Andersen, P.H., Mathews, J. A., & Rask, M. (2009). Integrating private transport into renewable energy policy: The strategy of creating intelligent recharging grids for electric vehicles. *Energy Policy*, 37(7), 2481-2486.
- [28]. Benitez, L. E., Benitez, P.C., & Van Kooten, G.C. (2008). The economics of wind power with energy storage, *Energy Economics*, 30(4), 1973-1989.
- [29]. Deane, J. P., O Gallachoir, B., & McKeogh, E. (2010). Techno-economic review of existing and new pumped hydro energy storage plant. *Renewable and Sustainable Energy Reviews*, 14(4), 1293-1303.
- [30]. Hvelplund F. Renewable energy and the need for local energy markets. *Energy* 2006; 31(13): 2293-302
- [31]. Lund H. Large-scale integration of wind power into different energy systems. *Energy* 2005; 30(13): 2402...12.
- [32]. Budny, D. and Sotero, P. 2007. Brazil Institute Special Report: The Global Dynamics of Biofuels. Brazil Institute of the Woodrow Wilson Center.