

Forum:	GA 5, United Nations Development Program
Issue:	The question of ensuring growth in alternative energy in LEDCs
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Introduction

In the world today, there is an estimated 47 LEDCs. These are countries with both a high birth rate, high death rate, high infant mortality, low life expectancy as opposed to the MEDCs, and a low growth rate. This is a problem of extreme importance for the entire world. It is therefore vital to ensure growth in these countries, especially in regards to alternative energy. Energy is used every single day. Charging electronic devices requires electricity for power, streetlights need the same for lighting, and vehicles require gasoline and diesel. Various aspects of one's life requires energy. It has in the 21st century become a vital part of lives all over the world. As our reliance on energy grows, so does our usage. This is undoubtedly causing great consequences for the world. Global warming is one of the most significant problems that our world has ever had to account for. Seeing as energy is such an important part of our everyday life, and global warming is such a significant issue, it is vital to discuss the question of ensuring growth in alternative energy in LEDCs.

Definition of Key Terms

LEDC

An abbreviation for Less Economically Developed Country.

MEDC

An abbreviation for More Economically Developed Country.

Global Warming

The observed century scale rise in the average temperature of the Earth's climate system,

and its related affects.

Active solar

Active solar techniques include the use of photovoltaic systems, concentrated solar power, and solar water heating to harness the energy.

Passive solar

Passive solar techniques include orienting a building to the Sun, selecting materials with favourable thermal mass or light-dispersing properties, and designing spaces that naturally circulate air.

Wind farm

A wind farm is a group of wind turbines in the same location, used to produce electricity.

Wind turbine

A wind turbine is a device that converts the wind's kinetic energy into electrical power.

Magma

Magma is a mixture of molten or semi-molten rock that is found beneath the surface of the earth. Lava is the extrusive equivalent of magma.

Geothermal heat pumps

Geothermal heat pumps harness this energy from beneath the earth and take advantage of this resource for heating and cooling buildings.

History

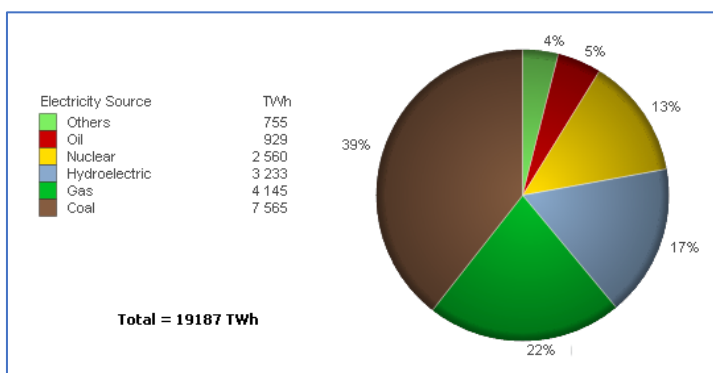
While the issues of global warming have been substantial for decades, we are now the first generation able to see the actual consequences.

The invention of various green energy techniques date back to the time before Christ where Europeans harnessed water energy to power mills, and in the tenth century where windmills were built in Persia to grind grain and pump water

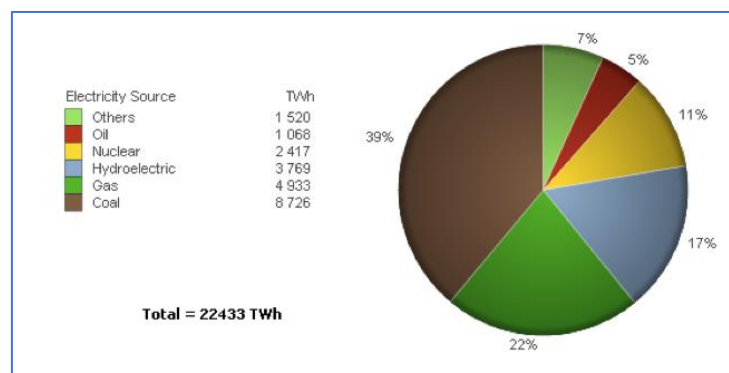
The evolution of technology is one of the most significant changes ever seen in this century, and therefore a very important factor when talking solutions to bring down emissions. There has already been seen an incentive to research and create green energy techniques.

Through the last decades, the consequences of Global Warming have been seen in ways such as, but not limited to rising temperatures, more severe weather, higher wildlife extinction rate, more acidic water, and higher sea levels.

One can also see that the amount of energy being produced from other sources has gone up in a mere five years from 4% to 7%, but still recognising that the total amount energy usage has done the same though the years.



World electricity production from all energy sources, 2009, (TWh)



World electricity production from all energy sources, 2014, (TWh)

Alternative energy sources– history and definition

Various alternative energy sources have been developed over the years. The ones that are important to know of and used throughout the world will be listed.

Solar energy

Solar energy is provided in the form of radiant light and heat from the sun. It is harnessed using of technologies, that are constantly evolving, such as but not limited to solar heating, photovoltaics, solar thermal energy, solar architecture, and artificial photosynthesis.

It is a vital source of renewable energy, and are broadly characterised as either active solar or passive solar.

The large magnitude of solar energy available makes it a highly appealing source of electricity. This means that many countries like Belgium, Australia, Spain, France, United States of America, Italy, China, Japan, and Germany utilise this green energy technique.

Hydropower

Hydropower, or water power, is energy derived from falling water or fast running water. This green energy technique has been used since ancient times from many kinds of watermills. In the late 19th century, hydropower has become a source of electricity.

The first hydroelectric power plant was built Niagara Falls in 1879

Since the 20th century hydropower has been viewed, by international institutions such World Bank, as a means for economic development without adding a substantial amount of carbon to the atmosphere.

This green energy technique is immensely used by countries such as the United States of America, China, Canada, and Brazil.

Wind power

Wind power is an energy technique that, by using air flow through wind turbines, mechanically powers generators for electric power.

As an alternative to burning fossil fuels this green energy technique has many advantages. It is plentiful, renewable, widely distributed, produces no greenhouse gasses, consumes no water, and takes up very little land.

Onshore wind is an inexpensive electricity resource, while offshore wind is steadier, and stronger than on land, however, construction and maintenance costs are considerably higher.

This green energy technique is immensely used by countries such as Denmark, Canada, the United Kingdom, China, and Germany.

Geothermal energy

Geothermal energy is energy harnessed or drawn from beneath the earth. “Geo” meaning earth and “thermal” meaning energy.

Geothermal energy has especially been used the last several years. Seeing as the earth contains magma, heat can constantly be produced from there. The temperature increases with 3° Celsius for every 100 meters you go below ground.

Below 10,000 meters the temperature is so high that water can boil. The boiling water produces steam which is captured by geothermal heat pumps.

This energy source is completely clean and renewable. It also results in significant cost savings as no fuel is required to harness energy from beneath the earth. However, geothermal has its downsides too. It is suitable to particular regions and cannot be harnessed everywhere. Alongside the fact that areas, where this energy is harnessed, are prone to earthquakes and volcanoes.

This energy source is used by countries such as the United States of America, Indonesia, Philippines, and Iceland.

Key issues

One of the key issues in solving this problem, is managing to make growth in alternative energy sources attractive to LEDCs. One must take the country’s already poor conditions in to consideration when trying to help the LEDCs to adjust to, and invest in alternative energy

Another key issue is making the alternative energy sources profitable for the LEDCs. Seeing as they already have a poor economy.

Major parties involved

People's Republic of Bangladesh

Due to the fact that an estimated 40% of the population in Bangladesh has no access to electricity, the government introduced a scheme known as solar home systems (SHS). This was made to provide electricity to households with no grid access. The program reached 3 million households as of late 2014 and, with more than 50,000 systems being added per month since 2009, the World Bank has called it "the fastest growing solar home system program in the world."

Republic of Kenya

Kenya is the world leader in the number of solar power systems installed per capita. More than 30,000 small solar panels, each producing 12 to 30 watts, are sold in Kenya annually. Kenya was the first African country to use geothermal power, and still has the largest installed capacity of geothermal power in Africa at 200 MW, with a potential of up to 10 GW.

Federative Republic of Brazil

Renewable energy accounted for more than 85.4% of the domestically produced electricity used in Brazil, according to preliminary data from the 2009 National Energy Balance, conducted by the Energy Research Corporation (EPE). After the oil shocks of the 1970s, Brazil started focusing on developing alternative sources of energy.

Timeline of Events

Date	Description of event
200 BC	Europeans harnessed water energy to power mills, by inventing the "vertical waterwheel". This invention spreading quickly throughout Europe.
10 th Century	Windmills were built in Persia to grind grain. This spread

	to India, other parts of the Muslim world, and China.
1888	The first windmill to generate electricity was developed in Cleveland, Ohio, USA.
1892	The world's first geothermal district heating system built in Boise, Idaho, USA.
June 5 th , 1972	The United Nations Environment Programme (UNEP) was founded by Maurice Strong as a result of the United Nations Conference on the Human Environment (Stockholm Conference).
June 3 rd – 14 th , 1994	The United Nations Conference on Environment and Development (UNCED), also known as the <i>Rio de Janeiro Earth Summit</i> , <i>Rio Summit</i> , <i>Rio Conference</i> , and <i>Earth Summit</i> . A United Nations conference held in Rio de Janeiro, Brazil.

Evaluation of previous attempts

Many resolutions have been made by the United Nations to invest in alternative energy sources. A lot of research has taken place, as to discover and better green energy techniques. The creation of UNEP took place, as to create a UN programme that could promote environmental understanding, and increase public knowledge about environmental factors, and problems of future generations. The UNCED took place in June 1992, with 172 governments present (in which 116 sent their heads of state or government), some 2400 representatives of NGO's, discussing issues such as, but not limited to alternative sources of energy to replace the use of fossil fuels. UNCED resulted in, amongst other thing, the Rio Declaration on Environment and Development. Countries are in general investing more money in green energy techniques fitting for their countries (cf. Major Countries and Organisations involved). However, the issue is to this date becoming bigger and bigger, and therefore demands even more attention of the United Nations especially when it comes to LEDCs.

Possible Solutions

Possible solutions for this problem is to consider the different types of green energy that exist already. Using solar panels, windmills geothermal energy, nuclear power and water.

Also, consider funding research, and therefore recognizing its importance towards discussing the further use of alternative energy techniques.

Considering making some quotas as to the amount of energy that needs to be produced from alternative energy techniques for LEDCs.

Attempt to find ways to make green energy techniques a financially sustainable solution for LEDCs.

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