

Renewable energy
(solar, wind,
geothermal, wave,
biogas and fuel cell)
sustainabi...



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Implementation of renewable energy sustainability and economic viability into the future Name: Lecturer: Course: Date: Implementation of renewable energy sustainability and economic viability into the future Energy is a very important resource in the world. As the world continues to grow the need for more energy sources increases. Almost every activity in the world depends on energy that means that the world needs to find as many new energy sources as possible. Fossil fuels are the most popular sources of energy in today's generation.

Unfortunately, the sources that the world uses to provide energy are not renewable and not sufficient to serve the whole world. This means that there will come a time when those sources will be depleted. It means that the world will no longer have sufficient energy to sustain it and the industries. It is therefore very important that new sources of energy be found. This will ensure that when the current sources of energy are depleted the world has another source that they can depend on.

The energy sources are also harmful to the environment. Pollution has therefore increased with increased use. This is why many governments are urging scientists to come up with renewable energy resources to supplement the current ones and have sources that are good for the environment. This essay will talk about a number of things. It will highlight the different forms of non-renewable energy available to man. It will also show how non-renewable energy is both sustainable and economically viable (Solway, 2010). Renewable energy is energy that comes from a natural source.

The natural sources include sunlight, wind, geothermal, wave, biogas and fuel. Being that the sources are all natural means that there is less pollution involved. This gives them an advantage over the current sources of energy that are currently used. Thus, an even greater need for scientists to come up clean energy that is less harmful to the environment. Clean energy is therefore very important to many governments as it means that they will have solved two major problems. The problems are sustainable energy source and preserving the environment for future generations. There are different sources of renewable energy that scientists have invented in the world today. These energy sources will go a long way into to help not only the current world but also future generations.

Embracing clean energy means that the environment will be preserved so that future generations can also enjoy its benefits (Solway, 2010). The sun is the source of solar energy in the world. It is the most popular source of clean energy as the sun's rays are found in abundance in many places. The concept of harnessing the sun's power has been used for decades even without human beings noting what they are doing. Scientist after realizing the potential the sun's energy had they tapped the sun's rays to provide the heat and energy that is converted and harnessed into energy. The energy is converted directly or indirectly into useful energy. When it is converted directly the use of photovoltaics are used so that the rays are converted directly from the sun's rays.

The use of photoelectric effect helps to convert sunlight into electric current, which becomes the energy source. The indirect method involves

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concentrated solar power. The system uses lenses and mirrors to track the sun's rays into a particular area.

Eventually a small beam is converted into energy that can be used in different ways. This source of energy can be used both at home and in industries. It is particularly popular at home, as people use solar lighting panels to cook and provide light at night. The sun's rays are trapped when it is sunny and used when need arise. People have embraced this method most of all as the concept of going green is becoming immensely popular with human beings (Kesan, 2011).

Wind is also used to create energy through the harnessing of wind power. Using wind turbines, windmills and wind pumps the wind's power is harnessed into wind energy. This energy source is clean and renewable. Wind had no effect to the world but it is thanks to this innovation that the world has a new source of energy.

People found a new way in which they can turn moving energy into helpful energy. Wind is usually very strong and powerful and this energy was just idle. Scientists therefore came up with a way of making use of this energy by building large wind farms. These farms have turbines that are connected to electric transmission power lines that convert the wind power into energy. The more powerful the wind is the more energy is harnessed from it. It has been noted that offshore wind farms harness more energy as wind offshore is more frequent and powerful than the ones that are on land. This is because on land there are more distractions that slow down wind than

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compared to the sea. The distractions include buildings and vegetations like trees.

They slow down the speed and power of the wind, which makes it less powerful once they reach the turbines. Offshore wind is therefore more beneficial (Kesan, 2011). Geothermal energy is another source of clean energy that scientists have invented.

The thermal energy is produced and stored in the core of the earth that is harnessed into energy. Scientists have defined thermal energy as energy that determines the temperature of substance. The earth being a form of matter is made up of radioactive minerals. These minerals produce heat that reaches over 5000 degrees Celsius. The heat produced is surrounded by cooler rocks that make the rocks to melt turning them into magma. The magma being lighter than the rock moves upwards and heats up the earth's surface. All this energy under the earth was lying untapped and could be put to better use.

Upon this discovery, scientists invented ways in which they can use this energy. This is where the geothermal energy comes from. It is tapped as the hot springs shoot up and this energy is converted into energy.

This energy more useful in this form and is used in different ways such as providing fuel for factories. Though some people claim that this form of energy poses a threat of global warming, it is a better source than the renewable sources offer in terms of pollution. It is therefore a lesser evil compared to the pollution that fossil fuels have on the environment. Biogas

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is another energy source that is got after the breakdown of organic matter in the absence of oxygen. Organic matter can be found from different sources such as the decaying matter of animals, waste from the kitchen and animal waste. This waste produces gases that are converted into energy in form of biogenic material. This method is particularly popular in farms as there are many waste material produced by both human beings and animals.

Instead of this matter, not being used scientists invented a way in which energy is harnessed from it. It meant that farmers could get a way in which they can save money through using material that is locally available to them. Since biogas contains methane, carbon dioxide and small amounts of hydrogen sulphide, it means that there is enough energy in it to produce power.

Since the raw materials are produced constantly, it means that this energy source will always be renewable and environmentally friendly as it gets rid of waste. This method is therefore very beneficial as it also provides a solution as to how waste can be gotten rid (Solway, 2010). Energy can also be created and harnessed from fuel through a device known as fuel cell. With the use of this device, energy is harnessed from fuel through chemical reactions.

During the reactions, the fuel is oxidized using oxygen and other oxidizing agents to produce energy. In 1839, a Welsh Physicist discovered that as long as fuel was oxidized it produced energy that can be harnessed. This led to increased use of fuel cells to produce energy. The first use of fuel cells

commercially was by NASA when they used them to generate power that <https://assignbuster.com/renewable-energy-solar-wind-geothermal-wave-biogas-and-fuel-cell-sustainability-and-economic-viability-into-the-future-and-the-ways-that-has-been-implemented/>

was used for probes and powering satellite dishes. This source of energy is very efficient.

When used properly it can produce energy that is between forty to sixty percent efficient. At times, it can go to up to eighty five percent when used extremely well. A fuel cell has therefore been a great addition to the world. It has provided a much-needed addition in the world (Kesan, 2011). As more sources of energy are becoming depleted, the need for coming up with a solution that is sustainable has become top priority. Fossil fuels are quickly running out and more sources of energy that will last a lifetime are needed.

Renewable energy is very sustainable. This is because the sources that produce them are always in abundance. The sun's energy is never going to be depleted neither is the wind's nor geothermal energy. Human beings will always create waste this means that biogas will always be there. Man does not have to worry about depleting these energy sources, as they will always have them.

There will never come a time that the sun will not be shining. In addition, since they are in the most natural form, the chances of them running out are minimal. Therefore, people are encouraged to switch to using these sources of energy that they know they can always depend on. Another benefit that using this energy comes with is the obvious benefits it has on the environment. These energy sources do no harm to the environment. They actually benefit the environment more. For instance, biogas is dedicated to ridding off the environment of waste that is pollutant to it (Wengenmayr &

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Bu? hrke, 2008). Renewable energy is also sustainable as it ensures that future generations will always have power.

There is no limit as to how much power can be used. As the world thrives on power it needs a source that it can always count on and depend on. These sources are enough to supplement the current energy sources and ensure that activities in the world's activities continue. It provides man with a sense of security as it cuts down the dependence they have on fossil fuels. Fossil fuels are not sustainable as they are slowly running out. This is evident in how much they cost. A barrel of oil costs more today than it would cost a few years ago.

It means that its demand is less than its supply in the market. Man therefore is confident that these energy sources provide security that energy will always be available for them to use. Renewable energy sources are therefore the best source to use as they have all the characteristics of sustainable energy source. The world also needs a source of energy that is economical. The sources of energy used today are very expensive. Renewable energy sources are economically viable. This is because they cost less to harness than the non-renewable energy sources. To extract fuel from the ground, it requires a lot of work force and money.

This money is used to pay laborers and buy or rent machinery used to extract the oil. In addition to that it is also time consuming. Initially harnessing power from renewable sources was seen as expensive.

Fortunately, thanks to technological advancements, the equipment used to harness energy is now cheaper. Thus, more people are seeing the need to switch to use renewable energy sources. Renewable energy sources are also more accessible than fossil fuels. The sun's energy is free and can be tapped by anyone. So is the wind's energy and biogas. People thus end not only saving but also preserving the environment. Governments need to encourage their citizens to switch to renewable energy so that they can preserve the environment and save more (Wengenmayr & Buhrke, 2008). In terms of jobs, renewable energy can create a number of jobs.

Through employing people that run and operate stations that provide renewable energy, it can become a source of livelihood for a number of people. For instance, people can be employed on wind harnessing farms so that they can operate the turbines and check on them to ensure that they are in tip top shape at all times. In addition, people have made careers out of selling solar energy panels that convert the sun's rays into energy. They have learned the art of surviving through renewable energy. Through looking for newer sources of renewable energy, laboratories employ people. This serves as a way in which people are depending on renewable energy. In the end, this boosts the economy of a country tremendously. This is because when more people are employed it boosts the country's gross domestic product as per capita income rises.

Renewable energy sources are therefore economically viable as they provide man with a source of income that they need to sustain them. As we know that renewable energy will never run out, it ensures that people will always

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be employed and energy will always be available. This means that the cause is both sustainable and economically viable. Governments therefore need to step and encourage their citizens to adopt this lifestyle. This is because though these sources have been there for a long time, people are yet to utilize fully this resource. There is therefore a need for people to be encouraged to stop using the non-renewable energy sources.

A number of ways can be used to make people switch to using renewable sources. For one, the government can educate people on the benefits they stand to get from using renewable energy. They can highlight the money people can save also show them the environmental benefits that they stand to gain. This is a sure way to entice people to use these sources of energy (Solway, 2010). Another method of implementing the use of renewable energy is by giving tax cuts to anyone that uses these energy sources. This applies mostly to industries.

Industries are known to use the most amounts of energy. They are the ones that stand to benefit the most from using renewable energy sources. If they implement this project in their firms, it means that the world will save a lot in terms of energy.

Governments should therefore, encourage them to switch to renewable energy by giving tax breaks to companies that implement this project in their factories. This will mean that they will have cut down on pollution and saved money in terms of both cost of production and taxation. Many companies want to cut down cost of production.

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They will therefore welcome and would embrace this change especially if it means they will be making more profits. Renewable energy is therefore sustainable and economically viable. If the world embraces this change, it will save a lot. There is no need for people to continue using fossil fuels that will eventually run out. It is especially now that there are so many better and new sources of clean energy.

Governments should fund scientists that are trying their best to look for even more sources of clean energy. By helping to the scientists, it ensures that more discoveries will be made. The governments should also play a major role in helping citizens switch from fossil fuels to clean energy. The government has the capacity to make people embrace the change that will be beneficial to everyone in the society. Thus, it is important that this change be implemented in the entire world before we run out of fossil fuels (Renewable energy 2006).