

Log Book

February 12 2021

I searched up what is sustainable energy and found some information from a website and found some useful information. Sustainable energy is energy that can be used for an unlimited amount of time. It does not run out or affect the resources the future will have. Sustainable energy does not finish unlike unsustainable energy and it does not cause harm to the environment and is found in many places.

I also found some types of sustainable energy. There are solar, wind, geothermal, ocean, biomass and hydroelectric energy.

February 14 2021

I searched up what solar energy is and found useful information. Solar energy is when the Sun's radiation becomes electricity. Radiation from the sun becomes electricity by solar panels. In a website known as Infinite Energy, I found out that solar energy is when the Sun's radiation becomes electricity. Radiation from the sun becomes electricity by the use of solar panels. Solar panels are installed on the roof of the house to collect as much light as possible so that it can generate a lot of electricity. Solar panels generate direct current electricity so a solar inverter is used to convert the direct current electricity into alternating current electricity so that it can be used in homes. Solar energy is best used in areas where there is plenty of sunlight so the power does not run out constantly. Due to these facts solar energy is best used in areas where there is plenty of sunlight so the power does not run out constantly.

February 21

I searched up what wind energy and geothermal energy are. I have found very useful information. Wind energy is when wind currents convert into electricity. The wind converts into electricity by the use of wind turbines. Wind turbines have three blades and have a similar look to a fan. The wind turbine is placed about 100 feet from the ground so that it has faster wind and can spin faster. Wind turbines convert energy into electricity when wind blows past the blades of the turbine. The blades start spinning which starts a generator and the generator will generate electricity. Wind energy is best used in windy areas and that electricity will keep running.

Geothermal energy is the heat in the Earth converted into electricity. The heat in the Earth is used by geothermal power plants which take steam which comes from reservoirs of hot water some miles below the Earth's surface. The steam from below the Earth's surface is used to rotate a turbine which activates the generator. The generator then starts to produce electricity. There are three main types of geothermal power plants. There are dry steam, flash steam, and binary cycle geothermal power plants.

March 8

I have researched the types of geothermal power plants. Dry steam geothermal plants are known to be the most common geothermal plants. They take steam directly from underground reservoirs to the power plant which is then transferred to the turbines which start spinning due to all the pressure. This then powers the generators and produces electricity. Once the steam powers the generator, it condenses into water and goes into an injection well which takes it back to the Earth.

Flash steam power plants are different from dry steam power plants due to the fact that flash steam power plants pump hot water instead of steam. The water is sent to a flash tank which is at a low temperature, making the water rapidly turn into steam then transferred to the turbines which start spinning due to all the pressure. This then powers the generators and produces electricity. Once the steam powers the generator, it becomes cool and condenses into water and goes into an injection well which takes it back to the Earth.

The water or steam used in binary cycle geothermal plants do not directly get sent to the turbines. The water is pumped from reservoirs to a heat exchanger where it heats another liquid. The second liquid becomes steam due to the heat and is then sent into a turbine and rotates it which starts the generator. The second liquid is then sent back into the heat exchanger to be reused. The hot water is then sent back to the earth through an injection well.

March 14

I researched about ocean, biomass and hydroelectric energy. The ocean can make thermal energy by the sun's radiation and mechanical energy by the ocean's tides and waves. Mechanical energy can be generated when tidal waves generate electricity by a dam. The mechanical ocean energy is made when a dam pressures the tidal waves of the ocean to rotate turbines and start the generator. Mechanical ocean energy plants are best used in areas where the most potential waves and tides are.

Thermal ocean energy can be generated when the sun's radiation heats the ocean surface water. A system known as the Ocean Thermal Energy Conversion uses warm

surface water to produce electricity. This surface water is pumped through an evaporator and becomes a vaporized fluid which is then taken into the turbine to start the generator and generate electricity. This vaporized water then becomes a liquid in a condenser and is pumped back into the ocean. Thermal ocean energy generators are best used in tropical areas since heat is a big factor in this type of generator.

Biomass energy is when wastes or living or once living organisms like plants are used to generate electricity. Biomass contains energy from the sun. Plants absorb this energy using photosynthesis. Biomass can be converted into electricity when burned or heated. It can also become biofuel. Most of the time biomass energy is produced during combustion. This is when biomass is heated in a boiler to make pressurised steam. The pressured steam is then sent to the turbines to rotate them. This then starts the generator and generates electricity.

Similar to ocean energy, hydroelectric energy uses water that is stored in reservoirs. By the help of a dam the water is more pressurised. As the pressured water flows hardly through the dam, it rotates a turbine which will start the generator and generate electricity.

March 16

I researched the benefits of sustainable energy. We should use sustainable energy instead of non-sustainable energy because non-sustainable energy will at some point run out. Sustainable energy can be used without running out. Sustainable energy meets the needs of today while having resources for the future generations as well. Sustainable energy will also reduce the amount of global warming since our non-sustainable resources when burned create carbon dioxide and several other global warming emissions. Sustainable energy helps reduce health problems since sustainable energy does not make pollution.