

Stem, a Cure for Fossil Fuels

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Imagine waking up one day and not having any electricity to run a house or any fuel to drive a car. In about 50 years that is how life would be for everyone on Earth. We can change that if we use some STEM solutions such as some alternative energy sources. If we start to create and use alternative energy sources now, then we would not have to ever worry about running out of fossil fuels. Fossil Fuels are burned to make electricity and used as fuel, which most of us use everyday. The invention of alternative energy sources could help fix this problem. There are some alternative energy sources being used already and the percentage is predicted to rise. Our planet running out of fossil fuels is a huge problem, however there are many STEM solutions such as solar power, wind energy, and hydroelectricity to solve this problem.

Earth is quickly running out of fossil fuels and some STEM solutions are the answer, such as solar power. Fossil fuels are expected to run out in about 50 years. Statistics project that coal will run out in about 110 years, gas will run out in about 54 years, and oil will run out in about 53 years. Scientists say that “ most of the energy produced in the United States in fiscal year 2016 was supplied by fossil fuels(oil, natural gas, and coal)- 78%” (Institute for energy research). We need to find an alternative energy source fast, and STEM is giving the answer. Solar power is light and heat energy that is converted into electricity. Solar power does not need to use fossil fuels and is an excellent solution. The ways that solar energy is harnessed is by using solar heating and cooling, photovoltaics, and concentrating the solar power. Solar photovoltaics are panels that absorb the light energy from the sun and covert it into electrical energy. Solar photovoltaics use semiconductors made of silicon to do this. A great thing about photovoltaics is that it uses only the sun to make electricity, however, unfortunately when the sun is not shining the photovoltaics can not make energy. Solar power can still be used after sunset because solar storage technologies are now available. The solar power industry is

currently growing and could help provide a reliable alternative energy source. For example “ the U.S installed 10.6 gigawatts(GW) of solar PV capacity in 2018 to reach 64.2 gigawatts(GW) of total installed capacity, enough to power 12.3 million American homes”(SEIA). The real problem is not that houses are using up to much electricity, it is the factories. However, STEM scientists are working to find a solution to that problem. Solar energy is stored by using solar batteries that store extra solar power for later use. Since solar photovoltaic panels only make electricity when the sun is out, solar storage can be used to store electricity when the sun is not out.

Hydroelectricity is another renewable resource that can help replace fossil fuels. Hydroelectricity is also a STEM made solution that may solve the fossil fuels problem. Hydroelectricity utilizes fast flowing water to produce electricity for factories instead of coal. The use of hydroelectricity is on the rise and as of 2015, hydropower accounted for 16.6% of the world’s electricity and is said to increase by 3.1% each year for the next couple of decades. Hydroelectricity involves a dam, which raises the water level to create falling water, a turbine in the dam so the falling water creates mechanical energy, a generator which converts the mechanical energy into electricity, and transmission lines in order to transport electricity to homes. The amount of electricity that is produced is dependent on how high the water starts to fall. Hydroelectricity is unlimited seeing as that when it rains the water source would be constantly restored. The power that hydroelectricity provides is about 1 kilowatt and new hydro plants may be 90% efficient. Many countries use hydroelectricity, and “ the United States is the second largest producer of hydropower in the world”(WVIC). Hydroelectricity is a great alternative energy source, however, the hydropower plants can block fish migrations, and they may change the water flow. There are many engineers working on this problem and STEM is the

way to solve this problem. Some of the solutions to this problem are fish ladders which help salmon migrate. Hydroelectricity could easily provide for a large amount of the electricity in the USA in the future. For example, “More than 70% of the electricity made in Washington State is produced by hydroelectricity facilities”(National Geographic). Hydroelectricity as well as wind power could help solve the electricity problem in the future.

Wind turbines are a STEM made solution to the fossil fuels problem. The wind turbines use the natural wind power that turns the turbines which in turn produces mechanical energy which is converted into electricity. Wind power could in a year, produce electricity 90% of the time. The electricity produced is transmitted through transmission lines. A wind farm has multiple wind turbines in the same area to produce more electricity. A wind farm is basically a power plant, and sends electricity to the power grid. Furthermore, “over the past decade, wind turbine use has increased more than 25% per year”(National Geographic). Wind turbines are huge and need to be maintained. Standing tall, wind turbines could be as tall as a 20 story building with blades 200 feet long. Wind turbines may seem like a great answer to the fossil fuels crisis, however there are some problems with wind turbines. If the wind is not blowing then the blades would not spin causing there to be no electricity to be produced. Some other problems “include complaints from locals that wind turbines are ugly and noisy”(National Geographic). In response to this, people in the field of STEM are working hard to fix these problems. Wind power is a good solution to the fossil fuels problem because it runs on wind energy which is a free renewable energy source. The cost of wind power initially costs a lot because a wind turbine has to be built, but over time the overall cost would decline. The use of wind power could also reduce the amount of green house gases in the atmosphere. Wind turbines are included in some of the good solutions to the fossil fuels crisis.

To summarize, solar power, hydroelectricity, and wind turbines are some great STEM solutions for the fossil fuels crisis. I picked this topic because I wanted to learn what solutions humans had to the fossil fuels problem. Fossil fuels could effect me because in 50 years if we run out of fossil fuels with no alternative energy source then I would have no electricity for my house and no fuel for my car. There may be some problems with some of the alternative energy sources, but STEM scientists are working towards a solution to these problems. STEM has already given many solutions that may replace fossil fuels in the future. As more of these solutions become readily available many countries will switch to them. To, conclude STEM has provided many tremendous and reliable solutions which makes it a cure for fossil fuels.

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