

Petroleum is a  
flammable liquid  
environmental  
sciences essay



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## Introduction

Petroleum is a flammable liquid that are found under the surface of the earth where it undergoes the natural heat and pressure under the earth's surface.

Mostly, petroleum is obtained through oil drilling. Petroleum has a wide variety of use in the manufacturing area, depending on the materials obtained from the process of separation of the petroleum itself. But the most important part of petroleum is the high amount of energy it can produce.

Today, petroleum has been considered as basic human needs, and that shows how important of a role it plays in human's everyday life. For example we can see in Malaysia itself, there was once an increase of petroleum price and at the same time affecting the price of food which was increased

proportionally with the price of petroleum. Due to this unfortunate event,

everyone went panic and everything was quite chaotic. Right now the whole world is facing a depletion of petroleum energy due to an increasing number

of human population. As stated in an article entitled ' Well Oiled - Why oil will be hard to replace in the demand for energy' by Animesh Chatterjee, "

Almost 60% of the human population worldwide now resides in urban areas.

With high urban population densities, the energy use steadily increased due to the swelling energy consumption."

With the increasing demand plus the depletion of petroleum oil, we need to find an alternative energy to replace

petroleum and fast. So far, the best replacement for oil is the solar energy

where it was mentioned in an article entitled ' A WAKE-UP CALL' by Francis de Winter and Ronald B. Swenson, stating that, " The sun is the only energy

source that can meet the oil depletion challenge." The sun gives

out radiant light and heat to the earth which can provide humans with

natural renewable energy known as solar energy. To capture, convert and distribute solar energy, solar technologies are used. Since we have solar energy produced everyday of our lives, it is not possible to make solar energy as mankind's main source of energy. But of course it has its own advantages and disadvantages, as also petroleum. We'll discuss further about this later on.

## **Discussion**

Currently, the world is having the effects of peak oil, which means that the rate at which the the world can extract oil is reaching the maximum level possible. Due this problem, a good source of energy needs to be found as soon as possible. As mentioned before, solar energy is the only best energy source that can replace petroleum oil. But of course it's easier said than done, because it is not that simple. Petroleum oil is something that's very hard to be replaced, but there are many factors we need to consider for both petroleum oil and solar energy. So why is that good old traditional oil so difficult to replace? First thing first, to further understand this situation, let's take a look at some of the pros and cons for both petroleum oil and solar energy. Petroleum oil plays a big role in today's world because it has a lot of good advantages towards the industry and economy. The following are some of the advantages of oil: oil is one of the most richest and valuable energy resources it is easier for oil to be used and transported due to its liquid form oil has high heating value inexpensive due to large reserves and easy accessibility no new technology is needed to be developed, so the cost can be save here highly combustibile, which produces high energy upon combustion helping the generation of electricity and other forms of

energy easily distributed all over the world very large amounts of electricity can be generated in one place oil-fuelled power stations are very efficient and can be built almost anywhere Even though it has some good quality advantages, it does have some bad disadvantages towards the industry and environment. The following are some of the disadvantages of oil: carbon emissions after oil burning a finite, non-renewable resource which is quickly depleting the oil recovery processes is not efficient enough oil drilling endangers the environment and ecosystem oil transportation by ship can lead to spills, causing major environmental and ecological damage burning oil releases carbon dioxide which is a very powerful greenhouse gas and a major cause of global warming. oil combustion leaves behind harmful by-products causing a lot of pollution it is very difficult to recycle used oil price of oil keep rising Now for solar energy, it is a very good renewable source of energy as it will never run out. The following are some of the advantages of solar energy: an infinite, and free renewable energy a pollution-free source no greenhouse gases produced solar can be used anywhere off the grid all over the world Even it seems that solar energy is very good in terms of its free energy and 'greener' approach, solar energy has quite a number of disadvantages, and it can be listed down as follows: very high costs solar doesn't work at night it is ridiculously expensive to create solar panels the costs outweigh the benefits it is costly and very hard to save or store solar energy solar energy is highly dependent on the sun (when the sun goes down, no power can be obtained) no proper ways to store the solar energy efficiently and effectively The increasing demand for energy by the whole world is high and needs to be distributed amongst four broad sectors which are transportation, residential, commercial, and industrial sectors. In terms

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of oil use, transportation sector holds the largest demand of energy and in fact, has the largest growth in demand in recent decades. This large growth mostly came from the demand for personal vehicles powered by petroleum oil for the internal combustion engine. Other than high demand, transportation sector also has the highest consumption rates. As documented in the Hirsch report in 2006, the consumption rate take account for approximately 68.9% of oil used in the United States, and 55% of oil used worldwide. Since the demand for energy is high, replacing oil with solar energy is considered the best solution yet because the amount of solar energy reaching the surface of earth is very large with high intensity (approximately 3,850,000 exajoules (EJ) per year) that in one year it's about twice as much as will ever be obtained from all of the earth's non-renewable resources combined (i. e. [http://en.wikipedia.org/wiki/Solar\\_energy](http://en.wikipedia.org/wiki/Solar_energy)). Even so, the efficiency of the solar panel to convert the sun's energy into electrical energy is only around 22% which means that a large surface area is required to produce a lot of electricity. This level of efficiency is not good enough for solar energy to be useful in large-scale power applications. Apart from its energy efficiency, another new problem arises, which is in terms of the solar conservation and storage of energy. Because for petroleum oil, it is easier to conserve and store the energy with less development cost for its technology, plus having a higher percentage of efficiency compared to solar energy. When the sun goes down (at night), no radiant light or heat from the sun hence no power can be produced, as currently there are no ways to store the solar energy efficiently or effectively. Other than that, a major disadvantage of the solar energy is that it can never provide power in the amount of quantities we need and as we <https://assignbuster.com/petroleum-is-a-flammable-liquid-environmental-sciences-essay/>

demand. Oil on the other hand, can provide more energy per given unit volume, area or mass since it is easily combustible, and produces high energy upon combustion helping in the generation of electricity and various other forms of energy. As the demand for petroleum keeps rising, there had been environmental lobbies raising their concerns about the long-term impact of extracting oil, where not just from the direct impact of the environments, but also from the fact that they produce more greenhouse gases and other pollutants. Not just that, petroleum oil is a carbon based fuel and burning it will release more CO<sub>2</sub> because of the added oxygen, and keep in mind that CO<sub>2</sub> is believed to be one of the major cause of global warming. Hence an environmental-friendly energy source is required fast to prevent the already bad global-warming effect from getting any worst, and this is where solar energy comes to mind. The first and foremost advantage of solar energy is that it does not emit any green house gases. Solar energy is produced by conducting the sun's radiation, a process free of any smoke, gas, or other chemical product. This is the best technology to help the nation in their attempt to meet the climate change obligations. Even solar is good in terms of its 'greener' energy, the major barrier in achieving the solar energy to go worldwide is the cost of installing the solar panels, since installing a home solar system or building a solar farm are really expensive. In contrast to that, an oil-fuelled power station can be built almost anywhere, as long as large quantities of fuel are available to be transferred there. Other than that, very large amounts of electricity can be generated in one place using oil cheaply, and the fact that oil is cheaper than solar due to their large amount of reserves and their easy access. Producing oil is also a well-known industry hence no new technology is needed to be used but solar energy on the hand,

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is still in its early stages of research and development. This will require more money to be used for this purpose.

## **Conclusion**

Petroleum oil by far plays one of the most important role in the world today, that even war can be declared due to this. In other word, this oil business can be said as an addiction since more and more people are demanding for it, thus causing the world to face the depletion of oil. As discussed before, solar energy is the only best solution to replace oil but to make it a reality would require too much unnecessary money without the hopeful return targeted, and the energy it can produce is much too low when compared to oil. This is why good old traditional oil is just too difficult to replace. An action to find solution in replacing oil must be taken nevertheless because there will be a day where the world will run out of oil and there's no escape to that fact. My personal view and suggestion to overcome this problem is to start investing some serious money for scientists and engineers to do some extended research to increase the efficiency of power from solar energy and find the best way to conserve and store the solar energy. We need to have the mentality of saving the mankind's needs rather than saving money. By making this a success, a lot of positive things can be obtained such as unlimited power, a healthier and pollutant-free life for the whole world while helping reducing the global warming impact on the earth.