

# Informative essay on alternative energy

[Environment](#), [Ecology](#)



The future of humanity is at stake due to the high consumption of energy sources that are used to get us through our everyday lives! Our most common methods of generating energy are polluting our beloved planet Earth and tearing up the ozone layer. Also, many of these methods we are currently abusing to generate energy are non-renewable. That means we could run out any day now. This is a formula for complete disaster, but don't be scared. Like most things we can fix this situation we have put ourselves into with alternative energy sources. Sorry Captain Planet it looks like you will be sitting this one out.

There are many different forms of clean and renewable alternative energy. Fortunately it looks like we may be headed down the right path to saving humanity. Some of these forms of alternative energy that can definitely help solve the problem are: wind energy; hydrogen; solar power; wave energy. Currently wind power only provides about 0.15 percent of the world's electricity but it has become one of the fastest growing forms of clean, alternative energy. Gigantic windmills, also known as wind turbines are sprouting up all across the land and seas of the world.

These towers can be a massive one hundred meters tall. One of these towers alone has the ability to produce 1,650 kilowatts of power. That is enough electricity to adequately power roughly 350 European homes. Since 1992, more commercial wind farms have been installed in more countries than ever before. There are now 40,000 turbines in 40 countries, and the world's wind energy capacity is growing at nearly 27 per cent annually. In 1998, it topped 10,000 megawatts (MW), about the total energy producing capacity of a country like Denmark.

The 1999 figures are not all in, but we know that 1998 was a boom year for the wind power industry. Equipment sales topped \$2 billion and there were 35,000 jobs in the sector worldwide. Growth is expected to continue at about 25 per cent a year. (Madsen, Pa. 6) In Europe there are plans to have forty thousand megawatts of wind power installed by the end of 2010. Wind is one of the best sources of alternative energy due to the fact it is completely environmentally friendly and we will never run out of wind. Denmark, the wind energy pioneer, covers 10 per cent of its electricity consumption from wind power, delivered from an installed capacity of some 1,700 MW (Madsen, Pa. 8). " Not far behind are also Germany and Spain due to the terrain and steady flow of wind. While everything is working out great for wind power over in Europe things aren't going quite as well here in the U. S. A, unfortunately. Currently wind power only provides about 0.1 per cent of the continent's electricity needs. This is due in large part to a congressional argument every couple of years about a tax break to help boost the wind power industry. Wind turbines produce electricity in California for between 4.5 cents and 4.8 cents per kWh, roughly the same as the cost of power from a coal-fired plant. Emory Lovins of the Rocky Mountain Institute in Colorado lives that a new generation of sugarless wind turbines will improve efficiency and the U. S. A. is not the only area slacking in the wind power industry. Asia, South America and Africa are even farther behind, in regards to wind power, than the U. S. A. Experts believe that twenty percent of the entire world's energy needs could be supplied by wind power.

There is enough wind to provide twice the expected global electricity demand for 2020. Even if only 10 per cent of energy needs were met by wind

power, the world would be spared about 10 billion tons of carbon emissions (out of a total of 60-70 billion tons). To achieve this goal, 120 times more wind capacity would have to be installed than there is would be very high, but operation and marginal. (Madsen, Pa. 12) today. The initial investment required maintenance costs would be As with every industry, the technology of wind turbines has improved greatly over the years.

The manufacturers have been building bigger and better turbines and as a result of this the price of wind power has been dropping by about twenty percent since 1999. This makes wind power not only a great environmental choice but also a great economical choice. In the long run wind power is much cheaper than rotational ways of generating energy like coal power plants. Once the turbines are installed they require very little maintenance and fuel does not need to be purchased or gathered to allow them to create the energy we need. As far back as Jules Verne, visionaries have predicted that society will someday be utterly transformed by energy based on hydrogen. "(Strip, Len. 1) We have more hydrogen in the universe than any other element. Hydrogen is extremely clean and produces mostly just water vapor when it is burned. Fuel cells power by hydrogen will be able to solve many energy problems that we currently face. The technology is already in place and ready right now to allow to hydrogen to take over as the main resource for generating energy.

It may take a while to be able to convert most everything we depend to go through our daily lives, but for a cleaner more efficient future it is definitely the right path to take. The first step down the hydrogen path would be to

outfit fuel stations for hydrogen powered vehicles, which there are a few that were recently put out on the market. Manufacturers being able to mass produce the hydrogen fuel cells will also be a big boost as it would greatly decrease the cost for the mass market. Around the industrialized world, the seeds of oil displacement are already visible.

Next year, for instance, three major energy companies in Scandinavia plan to build a pilot plant to make hydrogen from wind power. While it's only a start, the implications are huge: Denmark, the world wind-power leader, already gets nearly 15% of its electricity from the wind. Use that electricity to produce hydrogen, and the Danes would have the energy equivalent of the Euro: an energy currency that can be efficiently swapped for heat or locomotion, or turned back into electricity. And while electricity is hard to store in large quantities, hydrogen is easy.

The Scandinavians plan to use it in fuel-cell that equipped buildings and vehicles--such as the hydrogen-powered buses Demolisher's expects to roll out in Europe next year. (Strip, Pa. 8) Another great thing about hydrogen power is that it can be used to drive other produce hydrogen. That benefits everyone in two ways. First, producing hydrogen while harnessing the power of the wind or the sun does not produce and harmful emissions that can damage the ozone layer. Secondly, electricity is hard to store but hydrogen is very easy.

Today, 20 percent of all units sold to heat pools are solar. The potential value of the technology is shown in Israel, where solar hot water heaters displace 6 percent of the country's total electricity consumption. (Hammer, Pa. 9) Not

only is solar energy heir savings. It is estimated that by 2020 there will be over 1 50, 000 Americans employed in the photovoltaic industry. (Hammer, Pa. 9) " Wave energy has been hailed as the most promising renewable source for maritime countries. It does no environmental damage and is inexhaustible? the waves go on for ever.

It is invariably popular with the public, which has a sentimental love of the sea. "(Ross, Pa. 1) Getting energy from the wave of the ocean is probably one of the oldest and best ideas for alternative energy. The first patent for wave energy was filed by a father and son during the time of the French Revolution. Ross, Pa. 2) Unfortunately, there was was little progress in converting this great resource into usable energy until the last quarter century due to little knowledge of what a wave really is and how it worked(Ross, Pa. 3).

Harnessing the massive of power of waves to generate energy has been a daunting task so far because of the harsh conditions the equipment must be able to endure. There has been success though. Yogis Massed, from Japan, invented the oscillating water column (OCW)? effectively a chimney which stands on the seabed and admits the waves through its base. As they rise and fall in the open sea outside, the n opening near to height of the column of water inside rises and falls too. As the water level rises, air is forced up and out through a turbine which spins and drives the generator.

As it falls again, air is sucked back in from the atmosphere to fill the resulting vacuum and once again the turbo-generator is activated. Professor Alan Wells of Queen's University, Belfast, greatly improved the efficiency of the

invention by devising a turbine which spins in the same direction regardless of whether the air is being pushed out or sucked back into the chimney.

(Ross, Pa. 6-7) This is just one of the many ways of generating power room waves that is currently in use or under development by researchers around the world.

One of the more interesting methods that is currently under going testing and development is the Salver's Duck, invented by Professor Stephen Salter of Edinburgh University. His invention consists of cones called ducks that are built around a spine that is connected to a central generator. As the ducks bob up and down while they are they on the waves they drive the generator(Ross, Pa. 9). The biggest hurdle that wave power faces now is not the lack of knowledge to put the technology into use but the lack of financial backing. Like most new developing cosmologies it is very expensive to get going at first because the fact that it is new.

Wave power however is a great investment because it has the potential to produce incredible amounts of electricity without harming the environment. The well being of our planet should come first. It's pretty hard to argue against the fact that something needs to be done help the planet we live on get back to a healthy state. The way we produce energy to get through or daily lives, not just in America but the whole world, needs a face lift to rival that of Joan Rivers. Yes, it is true that face lifts are are not cheap and may not fix all the problems we currently have with how we create energy.

But, everyone knows that something needs to be done. There is a chance that many of these ideas for alternative energy may end being in the rough

that could turn out to be the next Brett Fare of the alternative energy industry. We need to take a chance on some of these unproven technologies for the future of the human race and our planet Earth. Not only will these new sources of energy help the planet but the economy as well. Thousands of new and exciting Jobs will be created. In conclusion, alternative energy sources can be the true savior of the human race.