
Conserving Energy and Renewable Sources

I've been really interested in renewable and sustainable energy sources for a while. While there are many sustainable, renewable energy sources that can be used on a large scale and sold to consumers, I will discuss smaller scale systems that can be implemented within an individual home. In addition to energy sources, looking at energy consumption as well as having a more energy efficient house and appliances can have a huge impact as well.

As an individual consumer or family, the first thing we can do, is look at our energy usage. Finding out what in your home uses the most energy can be helpful. A smart meter can be used to help track a person's energy consumption and provide real-time feedback of their usage. Purchasing energy efficient home appliances will help save on electricity, heating, and water usage. Installing double or triple paned windows, better insulation, and weather stripping along doors and windows can help cut down on energy needed for heating and cooling a house, which also means money saved on utility bills. Incandescent or compact fluorescent lights (CFLs) can be replaced with LEDs. LED lightbulbs are more energy efficient than CFLs – and far more efficient than incandescent bulbs – and last longer.

People can make changes and reduce their energy without spending money as well. Making sure to turn off lights and appliances when not in use can have an impact. Many appliances, such as TVs and microwaves, still use energy even when they are off. Turning down the thermostat in the winter can save on heating costs and a level of comfort can still be maintained by wearing a sweater and warm socks. The opposite is true of cooling in the summer. I always knew I should take shorter showers, but after recently reading an article on the Cape Town water crisis, and how many have changed their water consumption habits and are taking 90 second showers or less, I decided to try taking shorter showers and turning off the water as I lather up (Cape Town Water Crisis). Taking cooler, shorter showers conserves both water and the energy needed to heat the water.

I love the idea of using sustainable, renewable energy to power my home. One source of energy often used, is solar. While there are many types of large scale, commercial solar systems, photovoltaic (PV) cells are the ones used in solar panels for the home. Homes that use solar energy can use batteries to store the energy or stay connected to the power grid. This means they may not need to purchase and store batteries because when they are producing more energy than they use, they can sell it back to the utility company. A home can use the traditional solar panels, but there are other options as well. Tesla offers some attractive solar tiles that look like shingles or roof tiles. It is estimated that I could save \$144 a month by installing a solar energy system at my home ("Tesla Solar Roof"). This – in addition to tax

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breaks – could help offset the cost of installing such a system, making it an economical, as well as, ecological choice. There is even a liquid film that can be applied to windows, allowing them to still be transparent, but also generate electricity.

Another renewable energy source a person could use to power their home is wind. It is estimated that we have more than enough potential to meet all of the world's energy needs using wind power, using less land than other renewable and non-renewable sources (Cunningham). On a smaller scale, there are different styles of wind turbines that may be used residentially. They convert kinetic energy from the wind into electricity that can provide electricity to a home. It is sometimes a good choice to use a combination of solar and wind energy.

Another area that interests me is geothermal heating and cooling. This is not to be confused with geothermal energy, which uses converts heat from deep within the earth to generate electricity. This geothermal system takes advantage of the constant temperatures within the earth by pumping heat into the house in the winter and out of the house and deep into the earth in the summer. There are various methods this can be done, and some electricity is used in the process, but this can use considerably less electricity or natural gas than traditional methods of heating and cooling a home. If you are connected to the grid, geothermal heat pumps help lessen the load during peak hours in the summer when people are running their AC (Mueller).

Even without getting into the issue of large scale renewable energy, there are many ways we as individuals can lessen our dependence on fossil fuels. Whether this is through conservation or utilizing green energy sources residentially, there are many options. I hope to be able to use renewable energy in my home, but for now can strive to lessen my energy consumption.

Works Cited

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