



Making your Home Energy Green:

There are many ways in which you can “green up” your home for energy usage. The price of performing such actions can range from free to several thousands of dollars. Here is a list of things you can do to start saving energy, money and the environment, all at the same time!

1. (FREE) Find the windows that face the sun the longest (generally your southern exposed windows) and in the **winter**: open the blinds during the day and close them at night to promote passive solar heating and prevent radiative losses. In **summer** close the blinds during the sunniest part of the day (11-2) to prevent solar heating.
2. (FREE) Turn off the lights and appliances you are not using.
3. (\$1-\$4) Change your incandescent bulbs over to compact fluorescent bulbs (CFL). For the same brightness (of the bulbs you replace) you will save on the average of 75% in electricity costs and the bulbs will last about 10x as long!
4. (\$5-\$10) Change the filter in your Heating and AC air handler unit. This will reduce the number of pollutants and keep your unit from working too hard to push air through a clogged filter.
5. (\$10+Time) Go through your house and find air leaks and cracked caulking around windows and walls that could be fixed. Any place that air can go will take the heat or cool air with it!
6. (\$50-\$250) Replace your thermostat with a programmable model. This will allow you to set your temperature to several settings for day and night. Just be willing to use more blankets in the winter and set your nighttime level to several degrees cooler than you do during the day.
7. (\$300-\$500) Exchange your old water heater for a more efficient model; investigate if a tank-less water heater makes sense for your situation. They use energy only when you need to heat water, but make sure your selection is large enough for your usage demands. You might also think about a solar water heater system for your home (or your pool), they use the sun to preheat the water, so less electrical or gas heating is required.
8. (\$500-\$2500) Add insulation to your attic and walls. The reduced thermal conduction will help keep your environment at the temperature you set it at.
9. (\$250-\$10,000) Replace your old inefficient windows with double pane, low-e glass and argon filled versions. Your house will look better and your energy usage will drop by making another heating and cooling sync less energy draining.
10. (\$6,000-\$20,000) Replace your inefficient heating and air conditioning system with a heat pump or geothermal heat pump.

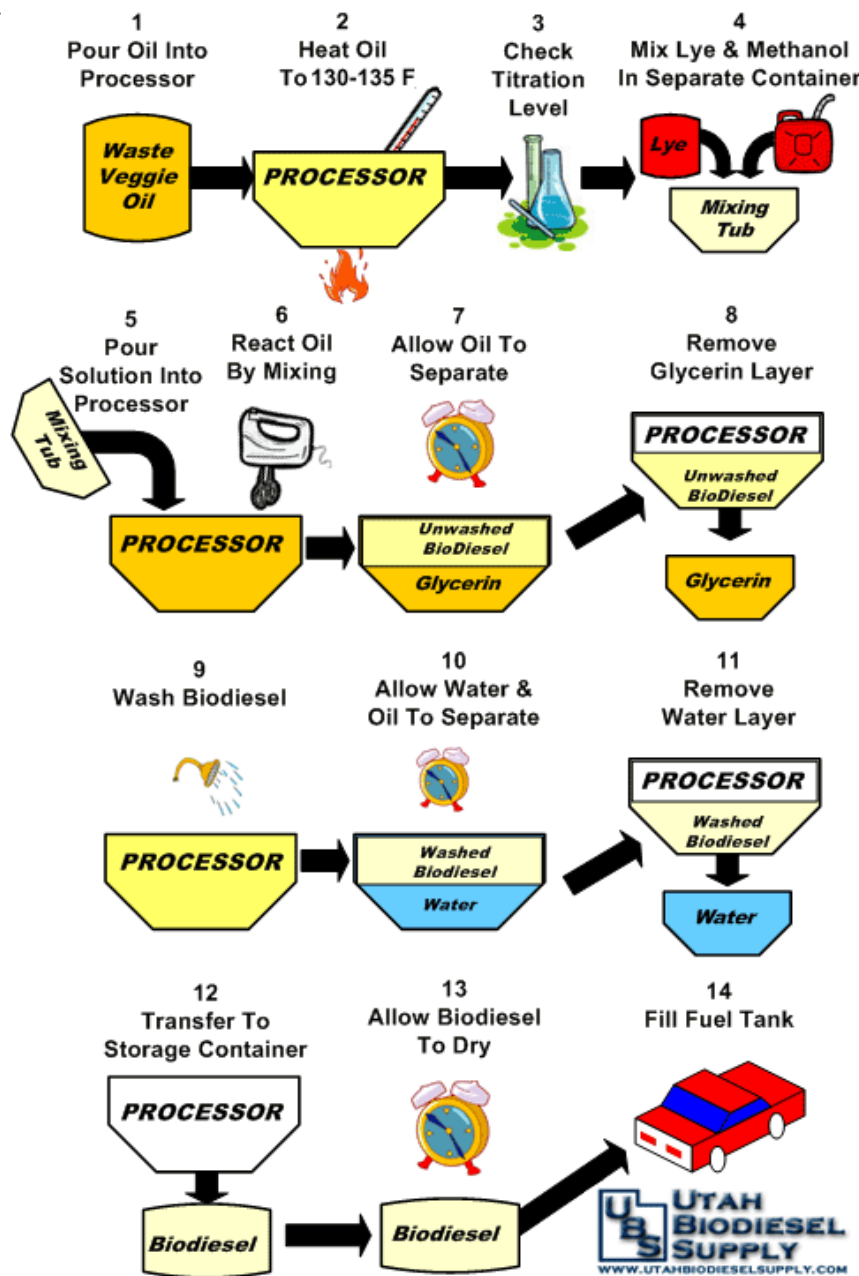
The heat pump units will provide a more consistent temperature (it is more efficient to leave these at one temperature as opposed to cycling them) for a smaller energy expense. Payback for the added cost can take the lifetime of the unit, but you will use less energy while you use it. If you go geothermal you can also add a desuperheater and preheat your hot water in the summer with heat that is pulled from the house during cooling (see #7).

11. (\$20,000-\$100,000) This is the last and most expensive item you should think of purchasing, an energy generation system. Both wind and solar make reasonable additions to your home. You are going to want to check Homeowner's agreements and make sure a 60-120 ft tower in your backyard makes sense, but solar can be retrofit to your roof. Oklahoma is a net metering state, so your meter will turn backward if you are producing more energy than your household needs. Then you only need pay for the net amount of energy usage. An added benefit is these systems can be fit with large batteries to provide your home with energy during OGE/Edmond blackouts.



Biofuels

Have you heard of the Veggie-mobile? This is a van that runs entirely on WVO (waste vegetable oil). If you have the room and a diesel engine you can produce your own fuels from the waste oils of restaurants or pressed oils from nuts and seeds. Given the untenable problems with changing agro production over to a biofuels industry, it makes more sense to promote the use of waste oils for fuel. That way people are still able to use the virgin products for cooking and then a collection of the wastes can be filtered and converted to running your truck. If that is too much trouble you can do a little conversion on your diesel vehicle and run it from straight filtered WVO, as long as you don't mind the smell of fries as you hit the gas! Taken from the Biodiesel Community web pages, here is a graphical depiction of the process . . . a warning that the process involves noxious chemicals and if you are not trained, you should probably not try this at home.



Resources:

General

Alternative Energy News

<http://www.alternative-energy-news.info/>

US Department of Energy

http://www.eere.energy.gov/consumer/your_home/

Home Power magazine

<http://www.homepower.com/home/>

Wind Power

American Wind Energy Association

<http://www.awea.org/>

Solar Power

Solar Energy International

<http://www.solarenergy.org/>

Solar Electric Power Association

<http://www.solarelectricpower.org/>

Geothermal Heat Pumps

Geothermal Heat Pump Consortium

<http://geoexchange.us/>

Window Technology

Efficient Windows Collaborative

<http://www.efficientwindows.org/technologies.cfm>

Insulation

US Department of Energy

http://www.ornl.gov/sci/roofs+walls/insulation/ins_01.html

Energy Usage

Compact Fluorescent Bulbs (CFL)

http://www.energystar.gov/index.cfm?c=cfls.pr_cfls

Appliances

http://www.energystar.gov/index.cfm?fuseaction=find_a_product

Biofuels

Collaborative Biodiesel Site

<http://www.biodieselcommunity.org/>