

Cooking Oil Recycling – Reduce Greenhouse Gases – Do Your Part!

What if you knew something simple to do, incredibly effective that will save your restaurant a ton of money, and guaranteed to preserve fossil fuels, would you try it?

By federal mandate, the US must use 7.5 billion gallons of renewable fuels by the year 2012, up from an estimated 5 billion gallons this year, and law makers in Washington are contemplating an even higher target of 15 billion gallons. The underlying goal by the United States government, is to reduce greenhouse gases

Since there are some greenhouse gases that occur naturally in the atmosphere, researchers are 100% certain the other gases result from human activity. Naturally occurring greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Certain human activities include fossil fuel burning and deforestation, which release huge amounts of gas into the atmosphere. NO_x is a greenhouse gas that absorbs 270 times more heat per molecule than carbon dioxide. If there is less NO_x in the atmosphere, there is less heat.

Here are some facts. Oil companies are pulling in record profits, and government says there is nothing they or we can do about it, and now you are stuck paying outrageous prices at the pump. Economics 101 taught us all some basic lessons pertaining to supply and demand. Since current demand for oil is at an all time high, with the United States, Europe and China using more and more oil due to their expanding economies, it means you are forced to spend thousands of dollars every year on petroleum. So, why not change this and get your restaurants' cooking oil grease to a provider who manufactures alternative fuels such as bio-diesel, ethanol, or vegetable oil all which are currently be used for energy.

What is stopping you?

Here is a comparison of four types of fuels:

Petroleum – increases carbon dioxide emissions, pollution, adds to asthma and lung diseases, produces soot, green house gas emissions, is the largest contributor to acid rain, smog and NO_x (nitrous oxide).

Bio-diesel – is an alternative or additive used in standard diesel fuel that is made from biological ingredients instead of petroleum (or crude oil); it is also a renewable source of energy that will help to decrease human dependence on non-renewable petroleum energy sources. It is usually made from plant oils or animal fat, through a series of chemical reactions, is essentially free of sulfur and aromatics, non-toxic, biodegradable, and renewable through farming and recycling.

It is registered as a fuel and a fuel additive with the Environmental Protection Agency (EPA) and meets clean diesel standards. It is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. Both unburned hydrocarbons and nitrogen oxides are ozone or smog forming precursors. The use of bio-diesel results in a substantial reduction of unburned hydrocarbons. Bio-diesel

exhaust has a less harmful impact on human health than petroleum diesel fuel. Pure bio-diesel emissions have decreased levels of polycyclic aromatic hydrocarbons (PAH) and nitrated PAH compounds that have been identified as potential cancer causing compounds.

When blended with standard diesel fuel, which is usually the case, it fails to substantially reduce NOx emissions (a greenhouse gas), and may actually slightly increase it.

Ethanol – is a fuel that comes from agricultural crops such as corn, barley, and wheat, and even from trees and grasses. Unlike fossil fuels, such as petroleum, these are renewable resources. Ethanol produced from corn reduces carbon emissions (only if comparing one gallon of Ethanol to one gallon of gasoline) that contributes to global warming by as much as 20%, compared with petrol. Ethanol made from trees and grasses can cut those emissions by as much as 80%.

In Brazil, Ethanol is normally made from sugar cane. The mandate states, “all NEW cars are to burn Ethanol; old cars still will need to use gas.” Currently, this country is partially dependent upon this source of fuel, and costs half the amount of regular gas. Yet, not all cars are able to utilize Ethanol at this time and still must be converted. If the price difference remains in favor of Ethanol, in several years, Brazil will be able to burn only this type of fuel in their cars.

Ethanol is usually blended with gasoline in various proportions to increase octane and extend gasoline stock piles. The form currently being promoted by many of the United States automakers is called E85, which is 85% ethanol and 15% petroleum based gasoline.

The current market for fuel ethanol is heavily dependent on federal incentives and regulations. Also, if you compare the amount of real energy it takes to produce Ethanol (heat inputs from coal or natural gas), this fuel source expends more energy being produced than it contains within itself, and the carbon numbers are much higher.

Vegetable Oil – Is environmentally superior to petroleum diesel products. It is biodegradable, nontoxic, and is derived from a renewable resource; this commodity does not have sulfur or aromatic compounds, typically found in petroleum products. Vegetable oil reduces engine wear by as much as one half; it is far greater than any bio-diesel, ethanol, or petroleum diesel, and your engine runs much quieter. It is a viable source of renewable energy that is clean, efficient, inexpensive and user-friendly.

Vegetable oil is the best greenhouse gas improvement strategy for today’s medium and heavy duty vehicles, which produces 100% less greenhouse gases than petroleum based diesel and improves gas mileage by more than 3%, while at the same time reducing smog-forming nitrogen oxide emissions. The Co₂, which is released into the atmosphere when vegetable oil is burned, is recycled by growing plants, which are later processed into fuel.

Despite such benefits, however, vegetable-based oils currently comprise less than one percent of the North American market share. One of the roadblocks to the market appeal is its unreliability at both high and low temperatures. When vegetable oil gets too hot, it oxidizes and breaks apart, and when it gets too cold it solidifies. However, there are companies who are making a dent in the market and substantially changing how we think.

Companies like Smarter Fuel, Pennsburg, PA has a further solution to the vegetable oil market, where Dave Dunham, owner, collects and recycles non-hydrogenated waste cooking oil; the product is then put into a filtering system; 99.9% of all solids are removed, and out comes an alternative fuel. Once placed into a converted vehicle (costing approximately than \$795 per vehicle – with a simple conversion kit), it allows diesel vehicles to run on the recycled vegetable oil. The oil is thinned by heating it via the conversion kit, where there is an improvement on the miles per gallon compared to petroleum, only there is usually a 30% reduction in NOx emissions, relative to diesel fuel, which means you contribute to cleaner air and a healthier environment.

Once restaurateurs realize their foods will taste better with a non-hydrogenated vegetable oil product, customers in droves are choosing establishments that provide raw material for “biofuel,” become conscious about improving the environment, based on this form of recycling, and create an improved communication value for employees, vendors and customers alike, then everyone wins.

So what are you waiting for, because there really is something you can do; call the writer of this article and be steered into making the right decision for your company and its future to improve our environment. Take notice, you are about to save our air by recycling your cooking oil the right way.

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