

# Biodiesel Book



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## Electricity - Make it, Don't Buy it

I know this book is about biodiesel, but I just wanted to take a minute to tell you this fantastic book entitled "Electricity - Make it, Don't Buy it". The biodiesel fuel that you will learn how to make in this manual can be used in the diesel generator based system described in the electricity book. That way, not only will you have a green, renewable source of power, but you can generate your electricity cheaper than buying regular diesel. Last time I checked, diesel fuel was around \$3.76 a gallon (Oct 2008). What do you think is cheaper, free used cooking oil, or \$3.76 a gallon diesel fuel? The electricity book is jam packed full of great information. **And... don't forget about the FREE Bonuses that come with the electricity book: Methane, Free Energy Notes, and Solar Energy all described below.** Here are all the details....

Are you tired of outrageous gas and electric utility bills? Does your power go out often? Are you looking to install a backup emergency power system? If so, then this eBook entitled "Electricity - Make it, Don't Buy it" will show you how to save 100's and quite possibly 1000's of dollars. The chapter on energy conservation alone will...

pay for the price of the book in a few month's time.

How can you go wrong with that deal? If you know anything at all about this subject, then you probably understand that solar panels are way too expensive for the little amount of power that they put out. Same thing goes for wind and hydro systems. These options are only good for those who have deep pockets... which leaves out most of us. The best way to generate your own electricity is using a generator based system. Hold onto your horses... don't run out and buy any old generator and crank it up just yet. Your new book will tell you which generators are the most fuel efficient, sources for generators that will save you 1000's, and best of all, your book will show you how to set up your system for...

extracting maximum power while using minimum fuel

That's the secret to making your own electricity. You don't want to slap a noisy generator in your back yard and run it 24 hours a day. That will not work in a million years! Your new book will show you how to select the proper generator, how to keep it quiet, and most importantly... how to get power 24 hours a day while running your generator only 1-2 hours a day. Listen to what Terry of Australia and Sean of North Carolina have to say...

*"The book is very interesting and shows that you have put a mountain of time and effort into it. I look forward to putting some of your ideas into practice."* Thanks again, Terry Fordham

*"Your book is the perfect reference to my project and certainly worth the 30 dollars. It specifically addresses the questions I am coming to now. i.e. what type of electrical apparatus to build into my steam generator system."* Sean Capogreco.

That's not all... your new book is jam packed with only useful information and no fluff. Information like...

**Page 7:** All about renewable energy and green energy... YES - a generator based system can be a green source of power. Just being more efficient than the utility makes your system more "green", but utilizing Biodiesel and recovering waste heat make it many, many times more "green" than your local utility.

**Page 8:** How to size your new system to meet your needs. Everybody's needs are different and the system described in your book is so flexible, you can install anything from a small emergency backup system to a full blown "off the grid" system and every level in between.

**Pages 14-22:** Description of the different system components and why one type is better than another type and where you can buy the components at the best prices. And we're not talking about \$20,000 systems like a roof full of solar panels would cost... we're talking about \$4000 to \$5000 for a complete system to run a typical 3 bedroom home.

**Page 23:** This chapter is on Energy Conservation - I guarantee you are wasting a whole lot of power in your home. You'll become well aware of this fact when you start generating your own power. This is a very important chapter and will pay for the cost of the book in 2-3 month's time.

**Page 28:** Information on fuel cells, zinc/oxygen fuel cells, and the Stirling Engine. There is a Stirling engine based generator that is available now. Home fuel cells still have some kinks to be worked out, but show promise of a future source of home power.

**Page 31:** Would you like to sell excess power back to your electric company? It's called "net metering" and you can read all about it in your new book. I'll also show you where you can get specific information on your state's requirements - *including state grants available to help you pay for your new system.*

**Page 34:** Free Energy? It may be here sooner than you think. Sure there are a lot of scams out there, but you will receive only information on systems and people I think are realistic and workable.

**Page 38:** Resources - this is where I show you where to go to get the best components at the best price. You could search for years and not find all these resources. Some sources are great sources of more information and others are businesses that will actually sell you components and give you advice on your new system.

**\$29.95! That's too expensive!**

I agree, that's a lot of money, but if you look at what you are getting and how much of your hard earned money will be saved by utilizing the information in this book, it's a great deal that you can't afford to pass up. Just to make it worth your while, I'm going to give you FREE SHIPPING and...

**three (3) additional bonus books absolutely FREE**

**Free Bonus 1:** How to set up your own methane generating still. Did you know that methane is the same as natural gas? Did you know you can make it yourself from any organic material? You can use this free gas source to heat your home, heat water, cook with, etc, etc.

**Free Bonus 2:** Free Energy Notes - This is a compilation of all my best free energy information. It took me years to find all this information. Great information like...

- **Edward Leedskalnin:** Builder of the Coral Castle. This guy has some very interesting ideas about electricity and magnetism. This is a must read for all free energy enthusiasts.

- **Nikola Tesla:** No electricity book is complete without a full chapter on this very important

man. He invented the AC generator and motor and hundreds of other inventions that you and I use every day. Your new book will contain much information on Tesla coils, Tesla turbines, Tesla's FBI files, a list of patents and how to access them free at the US Patent Office web site, and many Tesla articles and interviews. And... an interesting **"lost manuscript"** of Tesla's that is an absolute 'must read' for any Tesla fan.

- **Resonant Systems:** I truly believe that when a practical "free energy" device is created, it will be a resonant device. Like pushing a little girl on a swing - little energy is needed to keep a resonant system going. This may be the secret to the elusive free energy device everybody seeks.
- **Magnetic Systems:** This chapter is all about the fascinating subject of magnets. There have been many claims of self running magnetic motors, but none have been put into production yet. Read all about how these free energy devices work.
- **Nitinol:** This is the shape memory metal. Your new book will teach you everything you need to know about this extraordinary metal. How it bends and then snaps back to its memorized shape upon heating. And how to make a Nitinol engine and where you can actually purchase Nitinol for your own experiments.
- **Biodiesel:** This chapter tells you how to make your own diesel fuel from used cooking oil that you can get for free. Why buy expensive polluting diesel fuel when you can burn cleaner Biodiesel for pennies per gallon?

**Free Bonus 3:** Passive and Active Solar. As you probably have figured out by now, I am no big fan of overpriced, underpowered solar panels. I am, however, a huge fan of solar energy. This extremely valuable bonus will tell you how to make a solar oven and how to heat your home and your water using nothing but natural sunshine. And get this... I'll even reveal to you how to COOL your home using solar techniques. That's right, you heard me - I'm not crazy! Do you know what a cryophorous is? No? Then go to [www.electricitybook.com](http://www.electricitybook.com) this instant. *Someone is going to take the ideas in this chapter and make a billion dollars* - I wish I had the money to develop these ideas. I MUST be crazy because I am giving you this valuable information absolutely FREE!

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- **Bookmarks** - The entire table of contents is "bookmarked" for your convenience. Just click on a chapter title and you immediately jump to that chapter. At the end of the chapter, you can jump

back to the table of contents.

- **Color Pictures** - There are many pictures and diagrams in the eBook that are color.

## These are testimonials from real customers...

*Hi Bill,*

*I browsed through your book. Very nice job! don't sell yourself short as a writer. You presented the material in a very readable way. This is definitely my subject. You talked about the resonant devices. I am an HAM radio operator, so I have built many crystal radios, radio antenna tuners, simple low power transmitters. All resonant circuits using inductors. It look likes you have done a very good job of researching your material. Everything that I have read, so far, is right on! When I have read through your book more thoroughly, I will put a separate page, and a review there on my website. We should talk about some of the lower level ways that people can make their own electricity. For example, one weekend I went on a desert camping trip where I was doing quite a lot of digital photography. I rigged up a small photovoltaic system for recharging my camera batteries. This was extremely crucial to the success of that expedition, and it worked perfectly. Thanks again.*

*Doug Edwards*

*"I have been selling and installing systems like you describe in your book for about 10 years now. You're right... solar, wind, and hydro don't give you much power for the cost. Other books go about it in a complicated way - your book describes how to figure a system's size in a way that anybody can understand. Good job!"* Harold S., Bozeman, MT

*"...the book is quite nicely put together and is undoubtedly valuable to those who have no knowledge of these systems..."* Terrance K., Seattle, WA

*"I thought your book was fantastic. I have a newspaper with 50,000 circulation... is it OK to put an ad in the newspaper to sell your book?"* Karen W., Las Vegas, NV

*"My name is Stan. I received your letter. I like it. Enclosed is a money order for the book. If I want to buy more books, I can let you know. Have a great day!"* Stan Z., Cullman, AL

*"Thanks a million for sending me order#525 of your very timely and important super book Electricity - Make it Don't Buy it. Everyone, everywhere, Nationally and World Wide are having trouble getting enough electric power for even their basic everyday needs - even at any price - and the acute shortage and prices are skyrocketing every month... so everyone will suffer if they do not find a practical solution right away. The right positive answers are in your super book. So everyone including myself and my huge family want to get in on the ground floor..."* Ronald K., Las Vegas, NV

*"Hi Bill, I ordered and received your book on electricity. It was extremely interesting... Thanks again for the book."* Darl S., Stevensville, MT

*“Dear Bill, I appreciate your speed in getting my book to me. I will be trying to find someone to help me with this electrical ‘set-up’. I lived in Idaho with an electrical engineer + all we had was a ‘set-up’ similar to this. He had worked for the R.R. and used old R.R. batteries. He’s dead now, but I’m sure I can find someone to help me.”* Sincerely, Dolly N., TN

## **Some of our recent feedback copied from Ebay....**

- + great info, quick delivery A++!!
- + Awesome! Great communicator! Very Ebay-liscious.....
- + highly recommended
- + Great puurchases/and very fast
- + Perfect transaction!!!
- + Thank you, fast transaction
- + Very nice complement to my PV and wind books. A+
- + excellent service.
- + Easy to use product, ebook link sent promptly
- + A++++SELLER!!!!!!!!THANX!!!!!!!!
- + Very informative and easy to understand, well worth the money, great seller!
- + item received promptly
- + Fine transaction. Lots of great info! AAA+++
- + Quick and easy transaction. Facinating information! Well worth the price!
- + Wonderful book on power. I am learning lots. Recieved quickly. A+++
- + Great Ebayer,, A+ WOULD BUY AGAIN...
- + very quick response and courteous, instant delivery of booklet a+ ebayer : )
- + a+++++
- + Thank you
- + thanks
- + Quickest deal i've ever done on Ebay! Fantastic
- + Quick response, intersting item, thank you.
- + Rockin!!
- + Great seller-fast shipping!
- + Fast Payment! Great Customer! We appreciate your business!
- + Thanks! Informative and well-written booklet!
- + very fast shipment great to deal with
- + Book in great shape. Thanks
- + fast communication, prompt shipping, product as advertised AAA1
- + Very prompt and honest. Was exactly as stated. I recommend this seller.
- + Fast Shipping
- + Good communication, fast delivery, excellent product, pleasure to deal with.
- + GREAT INFORMATION!
- + SUPER-FAST PAYMENT! Thanks! A+A+A+A+A+A+A+A+ eBayer! Good Luck!
- + Super Fast Payment! Great Ebayer! Trustworthy!
- + Instant payment \*\* Excellent transaction\*\* thank you :-) A+++++
- + Another good transaction
- + Great Ebayer!!! Very fast delivery and great to work with:)
- + Very positive experience. :) Delivered on time! You're "alright" Bill \*\*\*\*
- + Great Service, Fast Shipping. Highly recommend this Seller! AAAAAA+++++
- + Item shipped quickly. Great info. Recommended. AAA+++
- + Highly recommend !!
- + Item as described - Fast Shipment Excellent Ebay Member - Highly Recommend!

- + great seller. No problems here. A++++
- + Deal and delivery both great.
- + Great transaction! AAA+++ Speedy and painless.
- + Fast delivery. Enjoyed doing business with you.

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**[www.electricitybook.com](http://www.electricitybook.com)**

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**From the Fryer to the Fuel Tank** - this is the original biodiesel book which tells how the author drove across the country using only used cooking oil. Everything you ever wanted to know about biodiesel is in this book! This is the best and most informative biodiesel book available.

**Electricity - Make it, Don't Buy it** - The book described above (paper and eBook versions available in the store).

**Welding Secrets** - this book shows you where NOT to weld and how to make welds that hold forever. Written by Hal Wilson who has over 40 years experience as a welder.

**The Oil Age is Over** What to Expect as the World Runs Out of Cheap Oil by Matt Savinar - All I can say about this book is click the link below and get it NOW! This book is amazing. This book will change your life! If you read nothing else, read this book today!

**Making Algae Biodiesel at Home** - Produce 10-30 times more oil per acre with algae.

**Build Your Own Wind Turbine** - do it yourself on the cheap - find free batteries too!

**Convert Your Car to Electric** - You can do it easier, quicker, and cheaper than you think!

**52 week course** - Free Energy Made Easy - Become energy independent one small step at a time.

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## Biodiesel Facts

Biodiesel is becoming more and more popular these days. It's good to see an alternative fuel move it's way closer and closer to the mainstream. Even Willie Nelson is using and promoting biodiesel because it is more environmentally friendly than regular diesel and it will help the farmers out. And we all know that Willie loves the farmers as we all do! Here's a picture of Willie's tour bus along with a biodiesel refueling tank...



Here's a few facts about biodiesel.... Compared to petroleum diesel, biodiesel -- made from soybeans or even used cooking oil -- reduces carbon monoxide emissions, carbon dioxide, sulfur dioxide, hydrocarbons, benzene and particulate matter that causes respiratory damage. It also eliminates the cloud of smoke associated with diesel vehicles and the exhaust smells like popcorn or French fries. It also lubricates better than regular diesel fuel.

Here's a recent article about Mr. Nelson's new business venture...

MATT CURRY, ASSOCIATED PRESS January 16, 2005: "On the Road Again" means something new for Willie Nelson these days --- a chance for truckers to fill their tanks with clean-burning biodiesel fuel.

Nelson and three business partners recently formed a company called Willie Nelson's Biodiesel that is marketing the fuel to truck stops. The product --- called BioWillie --- is made from vegetable oils, mainly soybeans, and can be burned without modification to diesel engines.

It may be difficult to picture the 71-year-old hair-braided Texas rebel as an energy company executive, but the singer's new gig is in many ways about social responsibility --- and that is classic Nelson.

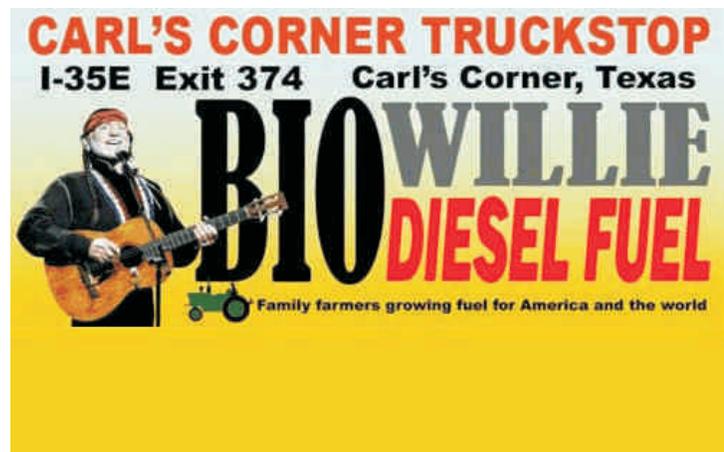
"There is really no need going around starting wars over oil. We have it here at home. We have the necessary product, the farmers can grow it," said Nelson, who organized Farm Aid two decades ago to draw attention to the plight of American agriculture.

In an interview last week, Nelson said he began learning about the product a few years ago after his wife purchased a biodiesel-burning car in Hawaii, where the star has a home.

"I got on the computer and punched in biodiesel and found out this could be the future," said Nelson, who now uses the fuel for his cars and tour buses.

Peter Bell, a Texas biodiesel supplier, struck up a friendship with Nelson after filling up one of the tour buses, and the business partnership came together just before Christmas.

Bell said Nelson's name will help the largely unknown fuel --- typically purchased by government agencies to promote environmental awareness --- gain wider national acceptance. The fuel's average U.S. price per gallon is \$1.79.



"What Willie brings to this is the ability to communicate directly with a truck driver. That kind of community is hard for people to get to," Bell said. "When he starts talking, these folks really listen to him. ... It's like having Tiger Woods talk about golf clubs."

Still, a driver can cover many miles without spotting a biodiesel pump. A map on the National Biodiesel Board's Web site shows a heavy concentration of distributors in the Midwest, but very few in other parts of the country.

Nelson's group is currently negotiating with Oklahoma City-based Love's Travel Stops & Country Stores to carry the fuel at its 169 locations nationwide.

Dan Gilligan, president of the Petroleum Marketers Association of America, expects commercial expansion for biodiesel, but says that supplies are still limited and that making the fuel available in northern states is a challenge.

"For terminals to store biodiesel, they have to store it in heated tanks to avoid gelling problems. That's a challenge for the industry to overcome," he said.

January 16, 2005

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## Biodiesel - How to make diesel fuel from used cooking oil

Biodiesel is a fuel that can be used directly in any diesel engine generally without modification. It's viscosity is twice that of regular diesel fuel which means it is better at lubricating your diesel engine than regular diesel. And... emissions are cut dramatically vs using standard diesel fuel. You can buy Biodiesel already made. You can find a source by visiting [www.biodiesel.com](http://www.biodiesel.com). Your other option is to make it yourself using your own homemade equipment or by purchasing a Fuelmeister at [www.biodiesellamerica.org](http://www.biodiesellamerica.org). It costs \$2995, but it comes with everything you need to make many, many gallons of biodiesel fuel. One other option is to burn straight vegetable oil in your diesel engine. To do this, you must do three things: 1) You must pre-heat your vegetable oil including the storage tank and all feed lines, 2) You must start your engine using regular diesel or biodiesel, and 3) You must clean your system by burning only regular diesel or biodiesel before shutting the engine off. Here are the instructions on making your own biodiesel...



**WARNING!!!!** - Methanol is flammable and toxic. Do not let it touch your skin or get in your eyes. Wear proper protective gloves, clothing, and eyewear at all times. Same thing with ethanol. Lye is also very caustic - do not allow it to touch your skin or clothing. When you mix the lye with the alcohol, it creates an even more toxic substance and toxic fumes which you should be very careful with - do not come into contact with it in any way. Always be in a well ventilated area. Also... you are 100% responsible for your own safety. The author is not responsible in any way whatsoever for personal injury or damage to your engine.

Here is a general description of how to make your own biodiesel fuel using methanol, lye, and used cooking oil. This process is called transesterification. You can buy methanol from your local racetrack or chemical supply store. You can buy granulated Red Devil lye (sodium hydroxide) from your local grocery store or hardware store. Make sure you filter the used cooking oil before using. Fry oil filters can be purchased in any good restaurant supply store. The oil also must be warmed up so it is not solid or lumpy or thick. You can use the sun to heat the oil or some kind of water heating element or a electric or gas burner of some sort. The ideal temperature is 120° F. If you are using flames, remember that the methanol is extremely flammable and you should turn your burner off before getting the methanol mixture anywhere near it. Of course, this should all be done in a well ventilated area too.

**Hint:** to determine the amount of lye needed to start the transesterification process, do a small test batch first. You don't want to mix up a large batch only to find out that you did not use enough lye. Some used cooking oils may contain different amounts of animal fats. The more animal fat in the vegetable oil, the more lye you need to start the process. Start with just 1 liter of oil and 200 milliliters (1/5th of a liter) of methanol and 4.5 grams of lye. First, mix the lye in with the methanol until dissolved (*this creates sodium methoxide - very, very caustic - be careful*). Then mix the sodium methoxide with the vegetable oil and mix for 1 hour. After mixing, let it settle for an hour or two and it should form two distinct layers of biodiesel (top) and glycerin (bottom). If there are not two distinct layers, repeat the whole process with 5.5 grams of lye.

**You can also perform what is called a titration...** Dissolve 1 gram of lye into one liter of distilled water and dissolve 1 milliliter of vegetable oil into 10 ml of isopropyl alcohol. Then drop the diluted lye into the diluted vegetable oil one ml at a time. After each ml, measure the pH of the diluted vegetable oil with litmus paper or a pH meter. When the pH rises significantly, the free fatty acids will be neutralized. The ideal pH is between 8 and 9. The number of ml used will equal the number of extra grams of lye to use per liter of vegetable oil (starting from 3.5 grams of lye).

So, let's assume 5.5 grams of lye produced the desired distinct two layers. We now want to scale it up to a 10 liter batch. So we need 10 liters of used cooking oil, heated. 2 liters of methanol and 55 grams of lye. Mix the lye with the methanol until dissolved and then pour the sodium methoxide mixture into the vegetable oil. Stir for one hour. The mixer can be a sump pump setup or some sort of mechanical electric mixer. After mixing, let it settle for 8 hours. After settling, you can siphon or pump the biodiesel from the top. After washing, run it through a Racor fuel filter before burning it in your engine. The bottom part after settling is glycerin. A valve at the bottom of your barrel or container is useful to drain off just the glycerin. If you allow it to sit in the sun for a week to evaporate all the methanol, you can use it as a degreaser or to clean your hands.

**Washing your biodiesel...** after the above process is completed, you should "wash" your biodiesel fuel to remove any residual soaps suspended in your fuel. The easiest way to get rid of the unwanted soap is to simply add water. The water will emulsify with the glycerin soap and settle to the bottom. So to perform the wash, simply spray an equal amount of water on top of your biodiesel and let it settle to the bottom for 12 hours. Drain the water off the bottom of your container with a valve and then repeat the process 2-3 times until the water drained off is clear. Heat your biodiesel up to 130° F for 20 minutes to evaporate any residual water and you are literally ready to go! Remember to filter it in a 5-10 micron filter before burning it in your engine.

**Other ingredients** - Instead of using methanol, you can use ethanol. Ethanol is less toxic than methanol and is considered a "greener" fuel than methanol. Ethanol is "grain alcohol" and is usually made from corn which makes it a renewable fuel. Methanol is highly toxic and is made from fossil fuels or it can be distilled from fermented wood. That's why it's often called "wood alcohol". Also... you can use potassium hydroxide instead of sodium hydroxide. I believe you'll have to use 1.4 times as much potassium hydroxide as sodium hydroxide though. Make sure you do your "test batch" first!

### **Two more things....**

1) Some of you have asked what kind of engine I need to use biodiesel... basically, biodiesel will run in any diesel engine unmodified. Biodiesel is a solvent, so if you put it in an old tank or use it with a diesel engine that has been running regular diesel, it may clean and dissolve some "residues" and then the residues will clog your fuel filter. Changing the filter often when you first start using biodiesel usually fixes this problem. Usually, manufacturers warranties are not voided when biodiesel is used, but check with your manufacturer to make sure. Sometimes a blend like B20 is required (20% biodiesel). Now if you are running straight vegetable oil (SVO), then you need to make modifications to pre-heat the oil to decrease it's viscosity.

2) The only other problem you might have is with natural rubber gaskets and hoses in vehicles made prior to 1992. The biodiesel may degrade these types of rubber and they may need replacing after a while. Newer engines have been modified (synthetic rubber) to stand up to the newer blends of diesel fuel that have been in use since 1992 and these engines will work fine with biodiesel

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## From the Fryer to the Fuel Tank eBook

Simply put... The best biodiesel book available!

[Click HERE for complete details and to review the entire Table of Contents](#)  
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### Testimonials...

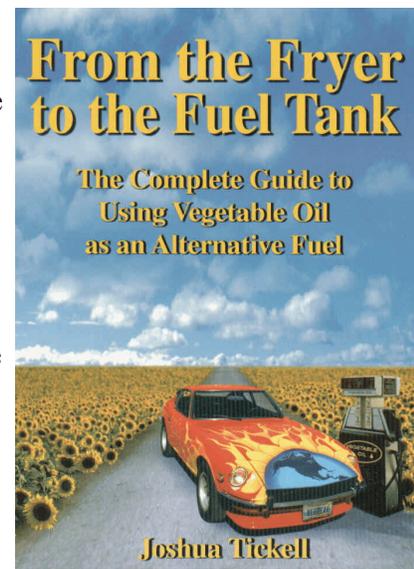
"Even if you have no understanding of chemistry, [From the Fryer to the Fuel Tank] is written in such a way as to make it all seem far less daunting — indeed, almost fun.. After reading this book, I really felt like going out and making some biodiesel!" Lance Turner, ReNew Magazine

"This informative guide is much more than a book of instructions on how to run a car on vegetable oil.. it offers not only clear explanations of the nuts and bolts of its subject matter, but also incisive social and political commentary, information about the environmental issues associated with our transportation choices, a strong ecological ethic, and some great stories." Chris Roth, Talking Leaves Journal

"In the United States alone over three billion gallons of used vegetable oil is produced every year. This free fuel source can be easily modified to burn in Diesel engines by following the simple instructions in this book." Real Goods Catalog

"The bottom line is that you and I can make our own bio-diesel fuel. We the people can run our diesel cars, tractors, generators, boats, and all with recycled cooking oil.. It's a slick way to a less polluted world and a little more self-reliance. I would recommend this book for the slightly skilled alternative energy enthusiast. It's good reading." Tim Reed, Earth Quarterly Magazine

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## Jatropha for Biodiesel

I know all of you are wondering why I am writing about a little known plant called "Jatropha Curcas". Well... it all has to do with making biodiesel and the production of electricity using biodiesel as a fuel.

This is to inform you of a source of vegetable oil that is relatively unknown in the United States and North America. The European community has already seen the light as have some Asian, African, Indian, and South American countries. Running engines on vegetable oil is nothing new... did you know that Rudolf Diesel originally designed his engine to run on peanut oil? Maybe the US has not seen the light yet because we are mostly engaged in the growing of food crops and oils like soybean oil, rapeseed oil, sunflower oil, and peanut oil. All these oils are edible and thus fetch high prices. After all, why should US farmers grow a completely inedible plant!? Used cooking oil is great for the "do it yourself" enthusiast, but there is not enough supply of used cooking oil to supply a whole nation.



This is where Jatropha comes in... Jatropha has the following benefits when looked at from the fuel production angle:

- it costs almost nothing to grow
- it is drought resistant
- it can be grown almost anywhere - even in sandy, saline, or otherwise infertile soil
- it is easy to propagate (a cutting simply pushed into the ground will take root)
- it is not invasive, or spreading, or damaging like kudzu
- it is capable of stabilizing sand dunes, acting as a windbreak, and combating desertification
- it naturally repels both animals and insects
- it lives for over 50 years producing seeds all the time
- it is frost hardy (does not like hard freezes)
- it does not exhaust the nutrients in the land
- it does not require expensive crop rotation
- it does not require fertilizers
- it grows quickly and establishes itself easily
- it has a high yield (Jatropha can yield about 1,000 barrels of oil



per year per square mile - oil content of the seed is 55-60%)

- no displacement of food crops is necessary
- it is great for developing countries in terms of energy and jobs
- the biodiesel byproduct, glycerine, is profitable in itself
- the waste plant mass after oil extraction can be used as a fertilizer
- the plant itself recycles 100% of the CO2 emissions produced by burning the biodiesel

That's a whole lot of benefit with little or no disadvantages!

The European Union biofuels directive requires a minimum level of biofuels as a proportion of fuels sold in the European Union of 2% by 2005, 5.75% by 2010 and 20% by 2020. Of course, as the President stated recently on TV, we don't have any such energy program yet. And I doubt we will anytime soon. The main green fuels will be ethanol and biodiesel, and demand for biodiesel is expected to be up to 10.5 billion litres just in European countries by 2010.

Folks... this "biodiesel" thing is going to happen whether you like it or not! I know there are a lot of farmers, entrepreneurs, and investors reading this who can cash in on this biodiesel craze. They are already doing it big time in Europe so it's just a matter of time before it happens here. And by "it", I mean using *Jatropha* to make biodiesel. This industry will grow very quickly - start planting *Jatropha* TODAY and then start making biodiesel to generate your own electricity!

Here are some useful links for more information...

[http://journeytoforever.org/biodiesel\\_make.html](http://journeytoforever.org/biodiesel_make.html)

<http://www.kelseyville.com/biodiesel/>

<http://www.biodieselnow.com/>

[www.biodiesel.org](http://www.biodiesel.org)

[www.biodiesel.com](http://www.biodiesel.com)

[www.biodieselamerica.org](http://www.biodieselamerica.org)

[www.jatropha.de](http://www.jatropha.de)

Willie Nelson Biodiesel (a lot of great biodiesel facts) - [www.wnbiodiesel.com](http://www.wnbiodiesel.com)  
Company investing heavily in *Jatropha* - they also have a modular biodiesel plant -

[www.d1plc.com](http://www.d1plc.com)

Great study on biodiesel made from algae oil by the Univ of New Hampshire -  
[www.unh.edu/p2/biodiesel/article\\_alge.html](http://www.unh.edu/p2/biodiesel/article_alge.html)

Add this simple liquid to your vegetable oil and create instant biodiesel. No harsh chemicals like methanol and lye required. [Biofuel Basics](#).

On my web site, I offer a free biodiesel book (this book) and I have several government sponsored reports/studies on biodiesel that are very informative...

[www.electricitybook.com/bio0113003](http://www.electricitybook.com/bio0113003)

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# Algae Biodiesel

One area of alternative fuels that has gained a lot of interest over the last year or two is algae biodiesel. This is probably because it will produce 10-30 times what the best oil producing crops in America will produce. Here are some of the gallon per acre figures in this chart (note that the gpa figure varies greatly depending on who you ask, where it is grown, how it is planted, the strain used, how many harvests per year, etc)....

Oil Crop	Gallons of Oil per Acre
Soybeans	48
Rapeseed	127
Jatropha	435-2000
Algae	5000-15,000

As you can see, algae produces a lot more oil per acre than all the other oil crops put together. And this is why algae biodiesel is gaining more and more interest.



## Here are some other points to consider...

- Algae consumes carbon dioxide, thus reducing harmful greenhouse gases. Most algae farms are being built right next to coal fired electricity plants so they have a steady supply of CO<sub>2</sub>.
- I don't know much about it, but those "carbon credits" are very valuable. Total estimated carbon credit trading this year is about \$72 billion dollars. And is expected to reach \$32 Trillion by 2020.
- The byproduct left over after extracting the oil can be used in cattle feed, vitamins, pigments, cosmetics, etc.
- Algae can also be used to clean up waste water.
- I'm sure you have all heard of the blue green algae vitamin supplements. This business sector has been cultivating algae for many years now in huge quantities. So this technology is not exactly new.
- From Wikipedia - "Anastasios Melis a researcher at the University of California at Berkeley discovered that if the algae culture medium is deprived of sulfur it will switch from the production of oxygen (normal photosynthesis), to the production of hydrogen. He found that the enzyme responsible for this reaction is hydrogenase, but that the hydrogenase lost this function in the presence of oxygen. Melis found that depleting the amount of sulfur available to the algae interrupted its internal oxygen flow, allowing the hydrogenase an environment in which it can react, causing the algae to produce hydrogen."
- If algae biodiesel farms could also produce valuable hydrogen, this sure would make the economics of the algae farms more feasible. The hydrogen could be used to power the new fuel cell cars or cars that burn hydrogen directly in an internal combustion engine. Right now, most hydrogen is produced using expensive electrolysis.
- Ethanol - As you all are painfully aware of, producing ethanol has it's drawbacks. The price of crops has risen drastically over the past year. The ethanol people say it should not be so because the byproduct of ethanol is a high protein animal feedcake. They say no animal feed is lost in the process and the price of corn should not go up because of that. All I know is that everything is more expensive and that's a fact. It's probably due to the fact that more oil crops/animal feed crops are being planted than people food crops.

- Oil Crops - Here too, prices are skyrocketing and probably for the same reason... more crops are being planted for biodiesel than for human consumption. The biggest problem with oil crops is that there is only so much land out there and in today's environment, we can not replace food crops with oil crops. That's why I like Jatropha so much... it can be grown where food crops will not grow. The same can be said for algae biodiesel - it can be produced without using up valuable food crop land. Another problem with jatropha has been the cutting down of irreplaceable rain forests to plant jatropha. This just needs to be stopped.

There are many companies out there who are developing their algae biodiesel technologies as we speak. Just four of them are GreenFuel Technologies, PetroSun, Valcent, and Shell. For more information on these companies and what they are doing in the algae biodiesel arena, just visit their web sites at...

<http://www.greenfuelonline.com/>

<http://www.petrosuninc.com/>

<http://www.valcent.net/>

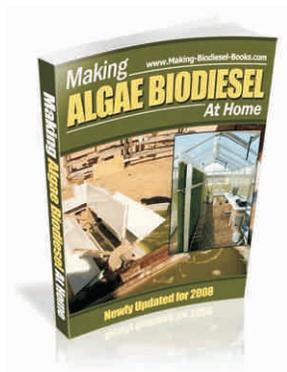
[http://www.shell.com/home/content/aboutshell/swol/jan\\_mar\\_2008/algae\\_13022008.html](http://www.shell.com/home/content/aboutshell/swol/jan_mar_2008/algae_13022008.html)

### **Did you know you can start an algae biodiesel farm in your own back yard?**

No? Then maybe you should get the new eBook "[Making Algae Biodiesel at Home](#)". I am quite surprised at the amount of detailed information in this informative eBook. Did you know?...

- There are many different strains of algae that you can use. The book tells you all about them and even where to buy them.
- You can cultivate algae in salt water and fresh water.
- You can grow algae in cold weather and hot weather.
- You may not even need to buy algae strains - you probably have them already in your area.
- Algae complete an entire growing cycle every few days compared to most of a year for most crops.
- One quad (7.5 billion gal.) of biodiesel could be produced on 500,000 acres. To produce one quad from a rapeseed crop would require 58 million acres.

There's much, much more info in the eBook, so just click on the title below to read all the fine details and get your downloadable copy today! [Making Algae Biodiesel at Home...](#)



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