



MONKEY-DO
P R O D U C T I O N S

WE DESIGN AND BUILD ICONIC EXPERIENCES





1974 VW THING

Bought from the original owner in 1996

My 1974 VW THING died, (the engine needed to be rebuilt) and my thought was if I was going to invest money into getting the car running again, I wanted to make it GREEN.

I did my research and bought some parts, asked lots of questions along the way and today the THING is alive though means of an Electric Motor and (12) 12V batteries.





1974 VW THING

Design of the THING is VERY Utilitarian

Shown here is what is under the hood. On the right is a small gasoline heater to warm the interior of the car. In the center is the 10-gallon gas tank. Typically above that was the spare tire. The white hose on the left, attached to the spare tire, provided air pressure for the washer fluid. So you have to choose, do I want clean windows or a spare tire that's inflated.





1974 VW THING

Same engine as the Bug - 1600 cc gasoline engine

Below you see the engine compartment. The THING used the same engine as the Beetle of the day. Rear engine, rear wheel drive, air cooled. The top speed was about 60 MPH, unless you were going downhill. Then you could hit 70. It slowed down going uphill and sped up going downhill. I don't know how many MPG it got, at the time the odometer was broken and I replaced it when I converted the car.





ALL STARTED WITH THIS GUY

He was the last one to drive the THING when it died!

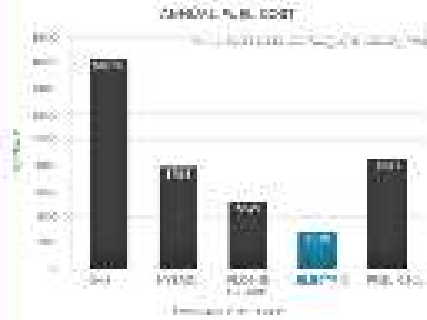
This is Tony Baggia, he's my best friend. He asked to borrow the thing to drive to work because his car was broken. I tease Tony because he was the last to drive the car, but the reality is, I chose not to invest in fixing the seals in the engine which kept the air-cooling functional. So the car overheated and the engine locked up. At this point, I had 2 choices: fix the existing engine which would cost \$3,000 - 4,000. OR convert it to an alternate fuel vehicle. So I started doing a lot of research.



DOING THE RESEARCH

GREEN Production Cars

Currently there are a few production car options available most of which are Hybrids. Meaning they use multiple fuels and power sources. Typically gas or diesel generator that powers the electric motor



TESLA SPEEDSTER



CHEVY VOLT



NISSAN LEAF



TOYOTA PRIUS



WELL, MAYBE IT WAS THIS GUY

Fast Company's Article introduced me to Jonathan Goodwin

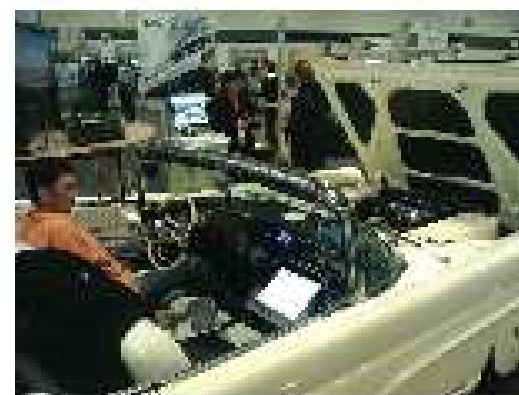


The car is being designed to run on electric power and will include an on-board generator that will run on cellulosic ethanol. Cellulosic biofuels are produced from grasses, wood and plants.



The U.S. biodiesel industry could support as many as 78,000 good American jobs and displace 97 million barrels of imported petroleum. In 2009, biodiesel added \$4.1 billion to the nation's Gross Domestic Product and supported jobs in all sectors of the economy while reducing carbon and other harmful emissions.

LINC VOLT



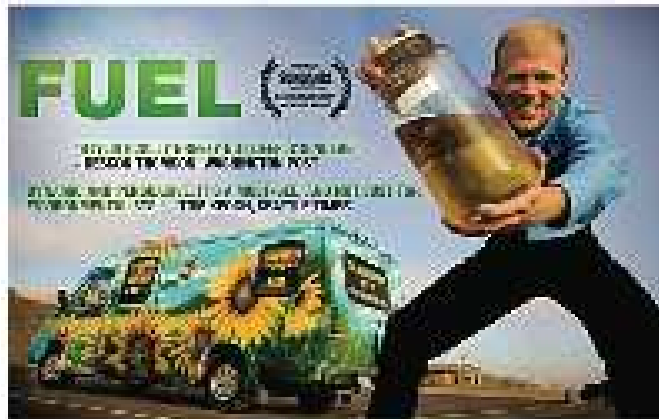
AND THIS GUY TOO!

Josh and Rebecca Tickell

Josh drove around the US for 9 years in the "Veggievan" promoting BioDiesel, before he made the movies FUEL, FREEDOM, and THE BIG FIX. These movies are great examples of what is possible when you choose to make a change in your life instead of waiting for things to change. These guys have devoted their lives to the DIY aspect of changing the world.

FUEL

CHANGE YOUR FUEL...CHANGE YOUR WORLD





THINGS TO CONSIDER

When Converting a Car to Electric

1. Choosing the correct car
2. Calculate the Costs of the conversions
2. Range and Speed
3. Weight Matters
4. Batteries!





CALCULATE THE COSTS !!!!

What's it going to take?

\$0	Cost of the Donor Car
\$1,000	Motor
\$1,000	Controler
\$1,200	Batteries
\$1,000	Charger
\$?????	Time/Labor
<hr/>	
\$4,200	

The cost of doing an electric car conversion on your own, according to industry experts, is between \$8,000 and \$11,000—not including the donor car.

If you hire a company to do the conversion, expect to spend in the range of \$12,000 and \$18,000, including all the necessary parts and labor. There are reports of electric car conversion as high as \$25,000, but anything above \$20,000 is price gouging.



Electricity costs are only about \$100 to \$200 per year, the price per mile is approximately \$0.05 to \$0.07

\$50 per gas fill up x 26 weeks = \$1,300



RANGE/SPEED/WEIGHT

They're all related

BEST SCENARIO - Around town



The limited range of converted electric cars remains a major issue. For people who say they will accept nothing less than 50 or 60 miles of range, EV's may not be the best fit for them. The typical driving range between charges can be as high as 50 miles, but you don't want to run your batteries all the way down to zero state of charge, because it will decrease the life of your batteries.

While EV's are capable of 85 to 70 mph, driving at that speed will quickly drain your batteries. It takes a lot of energy to go that fast. But if you are driving around town, on streets at 45 mph, you can go pretty far.

I wanted to be able to drive on the highway but that means more ENERGY.





BATTERIES !!!!

So many Choices

LEAD ACID
NICKEL-ZINC
LITHIUM-ION
LITHIUM-POLYMER

Battery Type	Weight (lb)	Energy (watt-hours)	Weight (lb)	Energy (watt-hours)
Lead Acid	50-65	40-75	150	100
Nickel-Zinc	60-70	100	80	150
Lithium-Ion	50	200	120	150
Lithium-Polymer	20-30	100	30-40	150



12 batteries x 12 Volts each= 144 volts

Despite all the buzz about lithium ion batteries, and the proven success of nickel metal hydride in today's hybrid gas-electric cars, you should expect your converted EV to run on lead acid batteries. It's simply too hard to find reliable and affordable lithium or nickel batteries. Moore has tested lithium ion batteries, loves how they react, but can't promise that they will last long enough to make them cost-effective at this time. In terms of various lead acid batteries, the group strongly recommends Absorbed Glass Mat (AGM) batteries over flooded cell, which require monitoring and maintenance.

With lead acid batteries, expect overnight charging times of approximately six to eight hours.

The only "gotcha" is the cost of replacing the car's battery pack. Today's electric car conversions, almost without exception, use lead acid batteries, which will last approximately two to five years. The cost to replace the pack, depending on the number of batteries, could range between \$2,000 and \$5,000.





SO I STARTED HERE

I bought a "kit" of parts.

I did a lot of research on line and actually spoke to some people who don this in the past. I found VW's were a common vehicle to be converted to electric. The only thing unique to this kit is the adaptor plate. This plate has bolt patterns which match the transmission on the VW with the bolt patterns on the electric motor. This plate may be available for your vehicle, but if it isn't, it could be welded at a local machine shop.



- * Advanced DC motor #FB1-4001, 8.1 "single shaft"
- * Curtie Controller 1231C (144 volts DC at 400 amps)
- * Adapter Plate for vehicle
- * Shaft Coupler - (Requires flywheel, pressure plate, & clutch)
- * 0-5k (ohm) Throttle Box
- * 40 ft of #2/0 ga. Wire Cable
- * Contactor- Allright SW200 (2000 amp rupture 200 amp continuous)
- * 50-150 VDC Volt Meter
- * 0-500 Amp Meter
- * 50mw - 500-Amp Shunt
- * Gauge Holder Bracket
- * 12 - High Current Copper Ring Terminals
- * 48 - Battery Cable Terminals
- * Fuse - 400 amp slow blow
- * Smart Charger 144 VDC * 12 w/6 Smart Battery Charger (for accessory battery)
- * General Plans & Wiring Schematics





MANUAL TRANSMISSION

with out the transition Plate





NEEDING A HAND or Eight





FITTING THE MOTOR

and getting some help from Dante





ENGINE COMPARTMENT

It looks Empty - but it's all there



I installed a Honda Generator to charge the batteries when I'm not near electricity, for example the park. This generator runs 8 hrs on 1 gallon of gasoline.

Consider a diesel generator





UNDER THE HOOD

Batteries and Charger





GET INSPIRED- TAKE ACTION

to-do list

Take Aways

1. There are multiple GREEN options in the automobile industry outside of the the Prius, the Volt and the Leaf.
2. I will provide Outside Resources needed to accomplish this task.
3. Fear can limit our actions, but DYI is self gratification and inspirational to others
4. It is up to us to make changes behaviors first, before we can expect society to changes their behaviors.

Movies:

1. Who Killed the Electric Car
2. Fuel
3. Freedom
4. Revenge of the Electric Car

Websites:

1. <http://www.EValbum.com>
2. <http://www.electrcauto.org/>
3. <http://www.pluginamerica.org/>
4. <http://www.evhelp.com/>
5. <http://www.lincvolt.com/>
6. <http://joshtickell.com/>





1974 VW THING

Bought from the original owner in 1986

THANK YOU

