



The Tesla Motors Blog

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Powering the Tesla Roadster with 'Green' Electrons

by Dr. Rob Wilder
CEO of WilderShares LLC

published Wednesday, January 31st, 2007

Dr. Rob Wilder is CEO of WilderShares LLC and manager of the WilderHill Clean Energy Index, the first Index/Fund on Wall Street for renewable energy, better energy efficiency, and zero-carbon solutions. He is also a Lecturer at University of California, San Diego, and was previously on faculty at University of California, Santa Barbara, and University of Massachusetts. Dr. Wilder has been an AAAS/ EPA Fellow in Environmental Science & Technology, Fulbright Fellow, and National Academy of Sciences Young Investigator. He is widely published and has sat on various boards, such as the marine section of the Society for Conservation Biology. He resides in a solar-powered home in Encinitas, Calif., with his lovely wife, Diana, and their two children.

I'm a long-time car nut, and so it's not surprising I'm already in love, sight unseen, with the Tesla Roadster. I reserved one myself after doing due diligence, and now eagerly await its arrival. My wife and I decided the Tesla Roadster makes sense for us in large part because it changes not only how EVs are regarded, but how the future of all cars is viewed as well.

We're solar powered at our home and thus already make green fuel for the Tesla Roadster; we enjoy integrating neat zero-carbon solutions into our family's home, and now into our cars too. We feel it is important to help to drive down costs so EVs grow more affordable. Plus, it's simply great fun to apply solutions, all the while powering our home and cars without oil.

Over the years my family and I have become passionate about solar power (**photovoltaics**, or PV) and clean technologies. We have a pretty large 6.5 kilowatt (kW) PV system with lots of luxuries and so live well. We also have two large solar thermal water heating systems, use energy efficient LED (light-emitting diode) and CFL (compact fluorescent lamps) lights as well as passive shading, and generally think about energy use. We have untapped wind resources and so may add more clean power in the future.



They're going fast!

Our initial production run of Tesla Roadsters sold out in four months. But it's not too late to get one of your own.

We are now accepting reservations for 2008 model year cars on a first-come, first-serve basis. The sooner you sign up, the sooner you'll be going fast too.

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We have two types of PV to make "green" electrons. One has 21 monocrystalline solar panels on our roof for 3.85 kW, linked to a 3.5 kW inverter. The other has 24 polycrystalline panels that are ground-mounted, rated 2.8 kW, and run to a 2.5 kW inverter.

Wilder family solar panels: Thermal panels in foreground heat pool water while monocrystalline panels on the house produce electricity.

Given this solar-home, I've long felt if I could just find an excellent two-seater EV to plug into these electrons, as I've now found in the Tesla Roadster, there'd be lots of advantages over ordinary, undesirable and slow "gasoline-powered cars." With the Tesla Roadster, we will get a car with great performance and it is an "American-Fueled Vehicle," which feels great as a matter of patriotic pride.

There are also neat aspects that follow from the Tesla Roadster being powered to some degree by solar as a "green fuel." If I charge the Tesla Roadster at home in the daytime, then my house is strictly being a power producer pushing electrons out into the grid, and so I know these are purely solar-made green electrons. I think this is the most elegant fuel of all.

Even if I happen to charge in early evenings or when it's cloudy with a mixture of "green" and "brown" (from the grid) electrons "or if I regularly charge at night with only "brown" electrons generated by natural gas-fired plants or out-of-state coal plants " those big thermal plants are still the considerably more efficient way to power a car than gasoline.



Additional electricity is produced using ground-mounted polycrystalline panels. The Wilders maintain their **own website** that tracks solar energy produced.

In the future, having an EV plugged in at home raises intriguing additional possibilities. Because we've switched our utility connection here to Time Of Use (TOU) metering. TOU is common in solar homes. It simply splits the day into two periods: one when electricity is cheap, from 6pm to noon, and the other when it's more expensive, from noon to 6pm weekdays. This means we're "paid" much more per watt for surplus power we generate in daytime, when in essence our meter spins backwards due to a shining sun, than we pay for the watts of power we have to consume at night. That peak coincides brilliantly with peak solar power, so our house is credited more richly for surplus daytime juice put into the grid.

An electric car is based around a large mobile battery and if that car is built with Vehicle to Grid (V2G) capability, it could also feed power back into the home. Potentially home-owners could arbitrage the difference between low cost for power of around 5 cents per kWh available at night when most plant capacity is just sitting idle " and the much more dear costs for electricity during the peak of day at maybe 15 cents or more per kWh. By charging up at night when juice is cheapest and being able to just regularly sell back into the grid by V2G, or if a signal sent from the Utility calls for it, an EV that's simply sitting there plugged in to the garage can be a money spinner for the home owner.

While I imagine cars from Tesla Motors won't have V2G capability for a few years, it might not be too far off. Today's lithium ion batteries have rather limited cycle life, so it wouldn't make sense

to hasten a demise of those costly batteries for small nightly profit gains (a hardware issue). But batteries are improving quickly, and the software obstacles can be overcome. Plus Utilities will likely be very supportive, just as they are with notions of Plug-in Hybrid Electric Vehicles becoming new home power sources and new customers too.

With coming batteries and the utilities onboard, it's conceivable that future EVs, including this fantastic Tesla Roadster, will typically have V2G. We innovative Americans just need to put our minds to it and treat energy as if it matters. It's hard for me to overstate the significance of the Tesla Roadster as an agent of elegant change.

Back here today in our own home, we have a simple but fun **web-based live system** that monitors our ongoing energy demand, and charts it against our solar output. This helps us to be smarter in the ways we use power. In the future, in a rather similar fashion, there might be an optional uplink allowing a Tesla Roadster owner to review the day's energy use from driving, and chart that against battery performance and even solar green fuel output. On the other hand, it's something that one could simply ignore and just have the delight of driving, but being in touch with your power source can sometimes be fun!



The Wilder family

In my career I've tried to help bring academic theories about clean energy solutions to real world applications. For instance, I launched with a colleague a WilderHill Clean Energy Index based on concepts like solar power, wind, energy efficiency, better batteries, ultracapacitors, superconductors, fuel cells, etc. To me, the lovely Tesla Roadster reflects in undeniable ways how when fast-emerging technologies are put together well, the sum is far greater than the parts.

Part of the beauty of the Tesla Roadster is it puts to rest the tired argument that electric cars must be ugly, undesirable, or golf-cart like. The Tesla Roadster is simply a better car, and it proves EVs don't have to be slow and inelegant like typical gasoline-powered cars.

I think this Tesla Roadster is about to change everything – not just how we think about EVs, but how the future of cars is viewed. Plus, plugging it into our solar powered house and just driving on a green electron is simply going to give me endless enjoyment, at least when I can wrestle the car away from my wife!

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•
Loek Vaneveld wrote on January 31st, 2007 at 5:16 pm

Dr Wilder,

I hope to be able to do as you will soon and charge my new electric car with solar PV power . Both are in my plans for the next year or two and I thank you and commend you for leading the way. I am hoping that I have purchased my last ever new gas burner. Electric cars forever now.

I can imagine and look forward to the day when millions of Americans will use their electric cars with V2G capability not to shift power from nighttime to days, but instead to shift excess cheap daytime solar generated electricicty to the night when the sun doesn't shine. Granted I think this is likely at least 40 to 50 years out but hey, I can dream.

Thanks for the insights to your personal battle on carbon emmissions and for green power and technology.

•
Arthur Embleton wrote on January 31st, 2007 at 6:01 pm

Interesting blog entry. It may become much more practical to carry out V2G when using a technology such as super-capacitors that don't loose their capacity as fast as lithium ion batteries do. I'd imagine when this becomes possible utility companies will set up their own banks of super-capacitors to absorb extra energy and then redistribute in times of high demand. This would also halve the energy lost due to transmission. Utility companies could locate super-capacitors or some other such technology at regular locations such as in cities or industrial estates so that they are closer to the demand.

Thanks for the blog entry, its got me thinking.

•
Joshua Mize wrote on January 31st, 2007 at 6:14 pm

I know I love road trips....and when the battery capacity and range is high enough a few models from now....I plan on being one of the first to drive a Tesla EV across the country. Thanks for the insightful blog.

•
stan wrote on January 31st, 2007 at 6:35 pm

I see that Zap is using Lotus to design the body structure of their new crossover. I wonder if Tesla will use them or develop their own since they have an office in Detroit? I hope they will consider letting us see the progress of the prototype designs for the new sedan - as they go.

•

Alex Eagar wrote on January 31st, 2007 at 7:25 pm

I just found out that there is an electric car (lithium powered Smart Car) on the market right now (Feb. 2007 delivery) that meets my basic requirements for an electric car. My requirements are that it goes faster than 70 MPH, can travel 120 miles on a charge, and costs less than \$50,000. Not that I have the money to get it right now, but if I needed a car and I had garage space where I could park it at night I very likely might buy it. In two years I'll probably be in a better position to buy a new car, but hopefully by then the White Star will be available. Their web site also shows a converted PT Cruiser, but there was no price for it yet.

www.hybridtechnologies.com/smartcar_order.php

Does anyone know whether this is a converted Smart Car or an original EV Smart Car such as the one in the link below?

Smart.com

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TJ wrote on January 31st, 2007 at 7:50 pm

The next phase in solar needs to be storage for it at night. Then, at least in sunny parts of the U.S. (a huge area of the country obviously) you won't need no stinking grid / V2G-except for very rare back-up. In the least sunny parts of the country, solar plants in the sun belt could power them. One day (particularly when EV's can be "fueled" as fast as gas cars) gas, ethanol & fuel from coal will just be for large vehicles -big trucks, trains & planes. Trains could be replaced by mag-lev, but "that won't happen"- unless all things solar/elect. become such a big part of the social agenda that it becomes the thing to do , finally. Wonder what year it will be when pure gas cars will be a very small percent of all sold, as opposed to pure EV's or plug-in hybrids? One day it's going to be a very highly solar powered world.

•

Jeffrey wrote on January 31st, 2007 at 8:01 pm

Thanks for another excellent blog, I absolutely loved it. You made so many interesting points. I long for the day I could finally fire up a polyphase motor of my own. I keep asking myself what it would be like riding in the Tesla for the first time. Just once! That would be a dream come true. I also would like to personally thank Rob Wilder. People like Rob are a vital component making possible affordable electric transportation everyone can cherish.

•

Jim wrote on January 31st, 2007 at 8:41 pm

I recently added a 3.4 Kw PV array on my house. The local energy company was put under voter mandate to get 10% of their power by renewable sources within the next few years and their method in part was to offer substantial rebates on new PV equipment installed on customer's facilities (residential or commercial). While others and I might consider such things, economics usually result in a pass. Truthfully for the cost (\$23,700) of the array it only makes sense in the savings over a very long time - 20+ years - which likely does not make sense unless I plan to live there most of that time; and while it increases the value of the home, it does not do so on a \$1:\$1 basis. However, with the rebate my cost was far less plus there is currently a \$2,000 tax credit for PV installations for the tax year. Rebates and incentives provide motivation because they make the purchase economically feasible or even profitable for the consumer whereas the technology is cost prohibitive otherwise.

There is currently a bill in congress, H.R. 550 - thomas.loc.gov/cgi-bin/query/z?c110:H.R.550 - that would apparently greatly increase the tax credit for PV installations. To me that makes the most sense of many possible solutions - let the people that earned the money, keep their money when invested into renewable energy sources (I won't go into the rest of why and they should be keeping it anyway, but at least this is a step in the right direction).

This is legislation that needs support. If I read this correctly (and I do have an inquiry into the sponsors office as to the accuracy of this) there is a \$1,500 / .5 Kw tax credit under the bill retroactive to the 1st of this year. A roughly \$10,000 tax credit on that 3.4 Kw system if I read it right... Couple that with the local rebates - everyone in the neighborhood will have one installed by the year's end. I'd be putting another 6.6 Kw on my roof as well - the net cost would be less than what I would have paid under the current tax credit of \$2,000. I would also have 50% more generation than my usage, allowing for the charging of an EV from homegrown power.

These things are possible, it's creating the climate for them to happen that is the challenge.



Mark wrote on January 31st, 2007 at 8:52 pm

They have a range of only 300km and a 0-100km of 4 sec and the car costs \$350,000. Sounds like they have a long way to go before they would be competitive., but it is another LI based exotic sports car www.eliica.com/

Has Tesla considered using 4 front wheels for the 4 door sedan?

There are many advantages to 4 front wheels:

1. Lower rolling resistance(using narrower tires)
2. Improved traction
3. Improved water shedding
4. Improved safety in the rare incidence of a front tire blow out.
5. It would immediately make your car instantly recognizable.

Obviously it would increase costs by doubling the steering linkage and adding a third set of wheels, but the advantages are noticable.

So how many of you would think it would be cool to have a car with 4 front wheels?

•

Richard wrote on January 31st, 2007 at 9:26 pm

Solar panel cost per kilowatt is dropping rapidly. Battery tech is improving rapidly. Cost of oil is going through the roof. Bush wants to lower our use of oil by 20% in ten years; I wonder how attractive oil will still be in ten years. Compared to electric cars like the Tesla, and where the market will be in ten years time, oil could seem positively archaic.

•

Richard wrote on January 31st, 2007 at 9:36 pm

I have a question about total cost of ownership of the Tesla. This web site is quick to point out that it doesn't require oil changes and can be driven for about a penny per mile of electricity fees (when charging at night in certain parts of the country). What other fluids need regular maintenance: brake fluid, transmission fluid? How often do you expect those to need checking? Is it similar to one of today's gas-powered cars in that respect?

And how expensive will the battery replacement be after 100,000 miles to keep it operating at peak performance? If it's \$20,000, that adds an extra 20 cents per mile to this car's total cost of ownership.

Thanks!

•

TJ wrote on January 31st, 2007 at 10:50 pm

Solar energy info. from "Wikipedia": the amount of solar energy intercepted by the earth every minute is greater than the amount of energy the world uses in fossil fuels in one year. The land area of the lower 48 states intercepts 50 trillion "gigajoules" of solar energy per year-equivalent to 500 times the nation's annual energy use. Also, of world solar energy use, Europe's percent (as of 2003) was 31%, the pacific area (mainly Japan) was 39%, North America was 11%. The projections are for North American percentage to actually decline by 2020, as the rest of the world goes bigger on solar. I think the projections are wrong- I see a bigger U.S. increase-especially if they finally wise up in D.C.

•

Roy Harvie wrote on January 31st, 2007 at 11:26 pm

I do not normally subscribe to conspirator theories but this one seems to have overwhelming evidence. Most of you know the details, Cobasys successfully sued Panasonic and Toyota for infringing on patent rights that Cobasys inherited from EDC Ovonic (maker of NiMH batteries for GMs EV-1). Thus forcing Toyota to stop selling Rave EVs www.ev1.org/. Chevron-Texaco and EDC Ovonic each own 50% of Cobasys. Cobasys has partnered with A123Systems who have a very promising Lithium battery suitable for powering cars. The big 3 car makers association,

USCAR (\$600M/Y budget, half paid by government) www.uscar.org granted A123 Systems \$15M for ongoing research. GM, Ford and Daimler-Chrysler has petitioned the government to triple its spending on more research into Lithium batteries with USCAR "assisting" in deciding where this money goes. Bush, whose best buddies are in the oil business, has already agreed. Who is going to get this money? Someone who already has a track record of using patent rights to block manufacturing EVs?

Patents came about to protect inventors and entrepreneurs so they could be assured of a reward for their effort and risk. Now we see patents being used to stop technological progress. I believe that we should petition our governments to revise patent laws along these lines: The life of a patent should be tied to a formula including the length of time it took to bring the idea to market and the amount of money spent to achieve that. I.E. a no-brainer like using lithium batteries to power cars is actually patentable and probably held by someone, if the holder of this patent spent 2 years packaging lithium ion batteries for cars and spent \$200K to do it, then the patent should run out when he has made 10 x \$200k profit or 2 x 2yrs (from marketing date), whichever happened first. If the patent holder sat on the idea and did not bring it to market, they should be able to be challenged by a competitor allowing the competitor a free license. Other potential manufacturers would have to pay for their license at a court determined "fair market value" to the original patent holder. The life of this patent would be determined by the time and money spent by the challenger. Licensing should not be denied to anyone, or priced beyond reason, unless it is a national defense issue like nuclear bomb designs. The intent here is to allow high risk inventions a long patent and low risk a short one and disallow using patents to stop new processes and products from coming to the market.

If enough people petition their government representatives in many countries then the International Patent laws can be changed, and we will benefit instead of being held hostage.

•

TEG wrote on January 31st, 2007 at 11:52 pm

Another fun blog! It sure looks like you have a lot of positives going on in your life, Mr. Wilder!

I coaxed the smalltime investment club my family joined into buying some PBW a while back, so I already knew of you and it is nice to hear that you will be a Tesla Roadster owner soon!

In one of the earlier blogs, I rambled about using an EV to feed the grid, but I didn't realize that the concept had been so well considered already. Now that you mentioned V2G as the term (which I hadn't seen before), Google pointed out lots of research being done in the area. That also pointed me to mention of vanadium redox batteries which seem intriguing. If anyone reading this hasn't heard of them check this out:

en.wikipedia.org/wiki/Vanadium_redox_battery

www.vrbpower.com/technology/index.html

www.vanadiumbattery.com/technology/technology.asp

Vanadium redox seems like it would make most sense for a stationary power buffer at home (take from the grid cheaply at night and feed it back for more \$ during the day)... Still, I have heard that small versions have been considered to power EVs directly.

By the way - have people been watching "Living with Ed" on HGTV?

www.livingwithed.net/

Another random recent news article I saw was a bit about Tesla plans to sell batteries to Th!nk:

news.com.com/2061-11128_3-6152975.html

•

Ruan Jurgens wrote on February 1st, 2007 at 12:19 am

I stumbled onto this:

www.ieahev.org/pdfs/annex_7/annex7_HEV_database.pdf

which lists all HEV ever made - who would have thought BMW made a hybrid?

•

Mark Petersen wrote on February 1st, 2007 at 1:56 am

I hope that Teslamotors make it possible for the charger to be programable so it can use the time of day where we have cheap electricity.

In many cases it can be made really simple with integrating a simple start and stop clock as switch between clock controlled charging and instant charging.

as in 90% of the time the charging will be done in 1½ - 2 hours and when your car sits idle from 6PM to 7AM, why not let the charging be while the price is low.

the cool thing of course would be that it has an interface that either can be connected to a PC or the internet, as here in Denmark we don't have fixed periods where the power is cheap it is dynamic pricing, depending on their current energy production and use, so on a really windy night the price can almost be 0.

—

Editor's response: The Tesla Roadster will have a timer onboard so owners can program when charging should start.

•

Willet Kempton wrote on February 1st, 2007 at 2:18 am

Nice description. Our analysis suggests that initial markets for V2G will not be in the day-night shift, since as you say, it imposes too much wear on today's batteries. Rather, initial V2G markets will be in "ancillary services" which provide short bursts of precisely timed power to the grid.

Ancillary services (in particular, regulation and spinning reserves) impose much less demand on batteries and have very high economic value. EVs will saturate the ancillary service markets with about 2% - 4% of the vehicle fleet (assuming Tesla-sized or AC Propulsion-sized electrical connections). By that time we'll have batteries with much higher cycle life and will begin using EVs with V2G for large-scale renewable energy storage.

Detailed analysis of V2G markets, EVs, battery life and renewable energy is in two articles by

Kempton and Tomic, "V2G Fundamentals" and "V2G Implementation", in the Journal of Power Sources, also available at www.udel.edu/V2G.

The same principles described by Wilder for EVs and solar also work for wind. This is described for a large-scale example, the US Northeast, in an article just published in Geophysical Research Letters. By late today (Feb 1, 2007), it will be available at www.ocean.udel.edu/windpower.

•

Peter Rikken from The Netherlands wrote on February 1st, 2007 at 2:41 am

Dear Rob,

It is reassuring to see that not all Americans are completely oblivious to their exorbitant energy use and their disproportionately high CO2 emissions per capita worldwide. The rest of the World just sees that the USA is ignoring Kyoto, does nothing to tackle climate change and has brought the ridiculous automotive concept SUV into existence and into the World.

In this context it is very nice to see that there are also people like you, with a completely different view. Thanks for sharing your thoughts with us. I will see what I can do in my new house (built in 1896) what I can do to make it energy neutral as much as possible, also with solar panels. Unfortunately, the sun shines a lot less here.

I just hope Tesla will start exporting to Europe asap. It would be a big stunt and very good for the image of the US here, making it somewhat 'greener'.

Regards,

Peter.

•

Malcolm Wilson wrote on February 1st, 2007 at 2:44 am

Very interesting

In an earlier blog, Martin and JB Straubel explained the need to charge the Tesla's battery system only to the capacity needed for the intended mileage, in order to prolong the calendar life.

See www.teslamotors.com/blog1/?p=39

There's an option to charge to 50%, 90% and 100%. Obviously, the high current charging unit which comes with the car will have to be powered from the grid, but are you also buying the portable charging unit? My understanding is that the portable charger matches standard domestic sockets (and current levels) and gives a reasonable charge time if you regularly charge to the 50% limit.

•

jeff wrote on February 1st, 2007 at 3:48 am

An electric car charged from a solar powered house.....

NOW WE'RE TALKIN'!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
GO TESLA GO!!!!!!!



Strada Auto Store wrote on February 1st, 2007 at 4:39 am

Informative, especially the live system to analyse energy usage. Thank You!



Mark Tebbutt wrote on February 1st, 2007 at 7:39 am

It seems investment bankers are predicting tough times ahead for European car makers as EU consumers are set to demand greener vehicles more so than any other world market. So it seems Tesla should open shop in Europe in the next 2 to 3 years if they want to cash in the pent up demand for green cars.

More at news.bbc.co.uk/1/hi/business/6318099.stm



MM wrote on February 1st, 2007 at 9:45 am

Solar Power is a truly fascinating subject, and many tout their solar houses as green, and cutting down on peak (inefficient) power plant production. However, as long as solar power is intermittent, and battery technology is insufficient, every house in the country could be solar powered and still not result in the destruction or decommissioning of a single peak power plant. The power plants will be used less often, which will cut down on CO2 production, but on the first cloudy day each and every peak (inefficient) power plant will be required to meet the demand. So although solar can lower the nation's CO2 footprint, and lessen our consumption of fossil fuels, it won't lessen our dependance on fossil fuels until battery technology improves in every direction by an order of magnitude.

The sad fact of the matter is that as technology improves, and prices fall, people consume more. As ICE technology has become more advanced and fuel efficient, people buy larger more powerful cars, thereby choosing to improve performance, rather than lessen their fuel bill.



JohnFrangerson wrote on February 1st, 2007 at 12:38 pm

Nice Post.

That was well said. Always appreciate your indepth views. Keep up the great work!

John



Eric wrote on February 1st, 2007 at 12:46 pm

Regarding solar power options for those who don't have the finances to handle the up-front cost, but still want to be green:

renu.citizenre.com/index.php?c=1170112321

This company supposedly installs the system for you on your home, and then they provide the power to you at a cost at or below your current electricity rate. They own the system of course, but it's an interesting way to go green, put more solar on the grid, and incur no financial costs up front. Plus, you get to lock in at a lower electricity rate for the next 25 years.

Certainly an interesting idea...

•

Eric wrote on February 1st, 2007 at 12:47 pm

Regarding my previous post, I should mention that the installation and equipment the company installs is all FREE... Hence the reason why they own the equipment and you pay them for the power. 😊

•

kslays wrote on February 1st, 2007 at 12:54 pm

TEG,

I'm also intrigued by vanadium batteries. If you are a New Scientist subscriber, they recently had an excellent article about them:

environment.newscientist.com/channel/earth/mg19325861.400-a-bank-for-wind-power.html

letter to the editor follow-up: **www.newscientist.com/article/mg19325890.800-battery-of-possibilities.html**

While their energy density is too low for vehicles, they could potentially be cheap, store incredibly large amounts of energy, and have a long cycle life. The interesting thing about them is that they are like fuel cells because the electrolyte is processed through the battery and stored in two forms. This means the electrodes won't get clogged like a normal battery. Also, to store more energy you don't need a bigger battery, just larger electrolyte tanks. My family lived off the grid in two locations for all my life, and these would have been very useful. Know of any small retailers? Another possible use for vanadium batteries would be as a buffer for buildings without solar but powered by utilities that vary price. You could buy electricity when the price is low and use it from the battery when the price is high.

•

K Verge wrote on February 1st, 2007 at 5:10 pm

Hello. My name is Kyle Verge and I am a 16 year old teenager in High School. I have been

obsessed with cars since the day I was born and the word "Car"™ was my first. Since the age of 12 I have become very interested in Global Warming and what it's doing to our planet, and I have become very interested in how changing our cars could make a great difference. I plan on devoting my career on environmental issues, and since I have such a passion for cars I'd love for that to my focus. Movies like "Who Killed the Electric Car", and "An Inconvenient Truth" have even opened my eyes even further with this issue. I know a lot about the current issues involving this topic, and I even entered an "Eco-Fair" at the age of 12 titled "Cleaner Cars for Our Environment". I would love if there was some way I could become involved with this organization somehow as I think it would be a great start. I'm also in the process of starting a glass bottle recycling program for apartment buildings in and around the area that I live in.

—

Editor's comment: Keep up the great work, Kyle.

•

Mark wrote on February 1st, 2007 at 6:15 pm

I'm really curious about something someone was telling me about power distribution losses. If the losses are really as bad as was suggested to me in rural areas, then solar power really is the only way for them not to use a much larger amount of power than they should need to. The same person said that Fuel Cell technology was very viable if hydrogen was generated right at the power plant which greatly increases the relative efficiency. I'd be curious to know what the range of transmission losses are across the country and what they are on average. I thought I read someone on this site about this.

•

Tony Belding wrote on February 1st, 2007 at 9:03 pm

Although I appreciate the viewpoint of a dedicated environmentalist, I have to say I'm a bit disappointed at how much Tesla Motors has focused on the "green" aspects of the Roadster rather than its appeal simply as a great sports car. This car is not going to save the planet, or save us from peak oil or OPEC. I know it's supposed to be a step toward the more affordable cars that really will make a difference, and I'm all for that — but shouldn't the Roadster be able to stand on its own merits? I want one because it promises to be a beautiful car, wicked fast with fine handling, smooth and quiet operation, easy to drive, and relatively inexpensive and convenient to own when compared with most other "supercars" in its performance class.

I'm still a skeptic when it comes to global warming. Getting off imported oil sounds to me like a good idea, but honestly it's not at the top of my priorities when I shop for this kind of car. Your typical car nut is still skeptical about the whole idea of an electric car, and it's unlikely you're going to change his mind by telling him again how "green" yours is. If anything it's more likely to turn him away.

Put another way. . . Your competition right now isn't Toyota, it's Ferrari. Can you talk about the

Roadster in language a potential Ferrari buyer would understand?

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*Editor's comment: Check out the blog, **The Tesla Roadster Experience: Quick and Considerate**.*

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Ruan Jurgens wrote on February 1st, 2007 at 10:49 pm

Alex Eagar wrote on January 31st, 2007 at 7:25 pm:

I just found out that there is an electric car (lithium powered Smart Car) on the market right now (Feb. 2007 delivery)

Alex, hybrid technologies converted the Smart themselves. This is not an original Smart EV - these are only on "test" in the UK at moment - testing the market.

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david moxness wrote on February 2nd, 2007 at 12:13 am

regarding Eric's post on the home solar system: thanks for the post, I checked out their site and am impressed with their approach. I will pass the info on to family and friends

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Malcolm Wilson wrote on February 2nd, 2007 at 7:18 am

Alex Eagar wrote:-

#Does anyone know whether this is a converted Smart Car or an
#original EV Smart Car?

The Smart was originally conceived as an electric car, but was not launched as such. However over the years, a number of companies have produced electric Smarts either as one-offs - e.g Zytek - www.evfinder.com/zytek_smartev.htm or as conversions - hybrid technologies are offering this in the US, as are AVT in the UK - www.avt.uk.com/page4.html

The new electric Smart, from Smart themselves is, at present, a lease-only deal for UK businesses 😞

smart.com

Some of these conversions do include Li-ion batteries, but the battery SOC and thermal management systems are not as sophisticated as Tesla's. Motor options seem to be mostly DC Brushless rather than AC induction.

Interesting to hear that Tesla may be providing battery systems to Think

www.think.no/

Mark Tebbutt wrote on February 2nd, 2007 at 7:22 am

Humans blamed for climate change.

The Intergovernmental Panel on Climate Change (IPCC) said temperatures were probably going to increase by 1.8-4C (3.2-7.2F) by the end of the century.

In 2001, it said that it was “likely” that human activities lay behind the trends observed at various parts of the planet; “likely” in IPCC terminology means between 66% and 90% probability.

Now, the panel concluded that it was at least 90% certain that human emissions of greenhouse gases rather than natural variations are warming the planet’s surface.

Full news article available here news.bbc.co.uk/1/hi/sci/tech/6321351.stm

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