F.V.E.A.A. NEWSLETTER

September 1993

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NEXT MEETING

Sept. 17th @ 7:30pm
College of Dupage
Student Resource Center
Room 1046
Use Lambert Rd. Entrance, Lot 7 at the Southeast corner of 22nd & Lambert
Nonmembers are always welcome!

MEMBERSHIP INFORMATION

Membership to the Fox Valley Electric Auto Association is open to the public. Anyone interested in electric vehicles or electric transportation are encouraged to join. The cost to join is $15 per year from November to November. If joining in the middle of the year the cost is $1.25 for every month remaining til November of that year. The cost for new members joining is $3.75.

Fox Valley Electric Auto Association
336 McKee Street
Batavia, IL 60510

First Class

ADDRESS CORRECTION REQUESTED

Presez

GO ELECTRIC; SAVE MONEY

Bill Shafer is right. Five years ago, Bill and I talked about energy independence, ozone depletion, acid rain (deposition), carbon dioxide build up, global warming, imbalance of trade due to oil imports, health effects of poisonous air quality, crop losses due to the synergistic effect of SO_2 and NO_2, observations of Paul Weitz, commander of the Challenger that he noted the change from a blue to a grey planet in the ten year period between his flight in 1973 and his flight of 1983 and we got a ho-hum response from our audience at Argonne National Laboratory even though we were "preaching to the converted". All of the above are abstract issues and do not motivate people to action.

GO ELECTRIC; SAVE MONEY

Bill Shafer's 16 years of experience driving an electric car and his detailed cost records, proves conclusively that driving an electric car as a complement to the internal combustion (heat) engine car does save money. You can put $2,000 to $4,000 per year in the bank by driving an electric car as a complement to your fossil fuel car.

GO ELECTRIC; SAVE MONEY

Politicians call this a "pocket book issue". President Herbert Hoover, an engineer and humanitarian (After World War I he provided the leadership to voluntarily raise $300,000,000 to provide food for the children of Eastern Europe and to the Russian people) was defeated by Franklin Roosevelt on the "pocket book issue". This was at a time that Will Rogers was saying that "We are the only nation in world history that went to the poor house in an automobile"

The German industrialists and the German people supported Adolph Hitler on the basis of the "pocket book issue". This was at a time when the political promise was the "peoples car", Volkswagen designed by Dr. Ferdinand Porsche.

Ross Perot, with credibility as a financially successful business man, is exploiting the "pocket book issue" to the exclusion of all others.

GO ELECTRIC; SAVE MONEY

G.M. Electric vehicles in a publication titled "The Car That Plugs In - A world of new choices" shows a bar chart that clearly verifies Bill Shafer's concept and data. The bar chart is entitled "How Far Can You Go On a Dollar? shows the Infinity Q45 will travel only 19 miles on a dollar; the Pontiac Grand Am travels 27 miles on a dollar; the Saturn SC travels 31 miles on a dollar; the Geo Storm with manual travels 32 miles on a dollar and the Impact Electric Car travels 113 miles on a dollar with a utility rate of $0.08/KWH. This is the average residential rate that the City of Naperville customer enjoys.

GO ELECTRIC; SAVE MONEY

A local successful high volume car dealer consistently uses the phrase "_____", where you always save more money"

An extremely successful retailer based in Arkansas uses the slogan, "Always the low price, ALWAYS"

One President of the United States said, "Money makes the OLE Mare Go".

GO ELECTRIC; SAVE MONEY

Ken Woods

Editor's Note

In the August issue of the Newsletter the printer apparently printed two copies of page 2 and left out page three. I have included the third page in this issue as well as the side bar referred to in the article.

MINUTES OF FVEAA AUGUST 20, 1993 MEETING

The meeting at the College of DuPage was called to order by President Woods at 7:43 PM. There were 16 members and 2 guests present.

Reading of the July minutes was suspended since they were published in the Newsletter. Member Clark insisted on the following corrections to the July minutes:

1. Minutes of the April meeting have not yet been published. This includes the selection of Member Clark as Vice President, succeeding Member Woods who became President on the resignation of former President Marsh.

2. The masthead of the FVEAA Newsletter still requires correction. Member Marsh is the Newsletter Editor and Director Emde is the Newsletter Publisher.

3. The correcct term for the event attended by President Woods is the American Tour DeSol.

The minutes were unaminously approved with these corrections.

Member Clark pointed out the minutes for the May 21 meeting still have not been published in the Newsletter or read.

Member Clark pointed out that the June 18 meeting was adjourned at 9PM and was the shortest FVEAA meeting.

Secretary Shafer commented that there seemed to be too much nitpicking about the minutes of a volunteer organization.

Treasurer Corel reported $ 2055.36 in the Savings account and $ 1015.86 in the checking account. His report was unaminously approved. There followed a brief discussion about the membership list.

Member Paul Harris announced he had obtained nametags for members lacking them. He reported a cost of $ 4.50 each, including a 6 1/2% sales tax. Member Clark pointed out that FVEAA is a tax-exempt organization and the tax should not be paid.

President Woods introduced Mike Rogers of Packer Engineering who made a presentation on automobile safety requirements, including crash requirements and seat belt construction and operation. No video player was available and he agreed to provide a tape copy to the FVEAA for later viewing. His presentation engendered several comments from members.

President Woods introducted Dan Sartain, a member from Bay City Michigan. He recently completed conversion of a Yugo His car has a 72-volt system, and a 12HP GE motor. He is pleased with the results of his conversion.

President Woods went over arrangements for the August 21 EV Summer Event. It is being jointly sponsored by the FVEAA and Illinois Solar Energy Association. Sessions will be in Building K. Exhibits will be in Parking Lot M because of parking lot reconstruction work. Member Clark has arranged for a display of a converted English milk truck now used for recycling pickup work in Western Springs.

Members Vana, Kranovich, Mitchell, and Wheaton resident Ahern will have cars for display. Press releases have been sent out to 120 organizations. Copley Press will send a photographer to cover the event. Member Mitchell has provided publicity for the Event over WYLL (106.7FM) and WMBI.

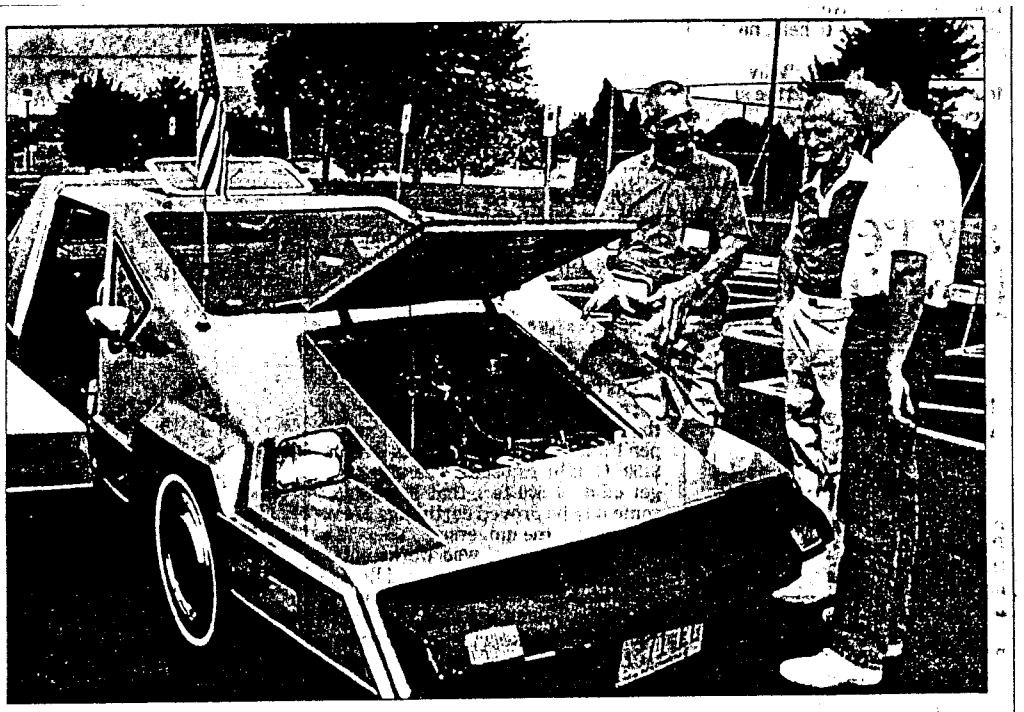
President Woods announced the following final schedule for the Summer Event:

10AM Welcome by Howard Allen.

10:30 Presentation by President Woods "Why Drive Electrically?"
11:00 Photovoltaic presentation by James Hartley.
1:00 Presentation by Member Shafer "Converting a Mazda RX-7"
2:00 Presentation by Jeff Ruffing (Edison) "Power Supply for EV's in Northern Illinois"
3:00 Photovoltaic preentation by Professor Francis.
4:00 Presentation by Member Marsh "Commercial EV Current Status"

The meeting was adjourned at 10:17 PM.

Submitted by
William H Shafer
Secretary



Oakbrook Terrace resident George Krajnovich, left, shows his electric-powered car to Bill Obcera, center, of Westmont, and Ed Ahern of Wheaton. Daily Herald Photo/Tanit Jarusan

Owner of electric-powered car drives home message at COD

Oakbrook Terrace resident George Krajnovich has driven his hand-built electric-powered car daily since it was deemed safe by state officials and licensed in 1982.

On Saturday, he and his car were at the College of DuPage in Glen Ellyn along with other electric car buffs as the Illinois Solar Energy Association and the Fox Valley Electric Auto Association sponsored an event to introduce people to the idea of non-gasoline-powered energy.

Besides meeting with owners of electric-powered cars, Saturday's event also included speakers who advised people about building their own.

"It's the coming thing," Krajnovich said of electric cars. "It's zero emissions."

See story on Page 4.

Daily Herald Sunday, August 22, 1993

Enthusiasts get charged over electric cars

COD hosts showcase for builders of clean machines

By Barbara J. Martin
Daily Herald Staff Writer

A magazine cover more than a decade ago featured a futuristic-looking car powered by electricity, and it prompted Oakbrook Terrace resident George Krajnovich to try his hand at building his own electric vehicle.

He did, and he's been driving his Mechanic's Illustrated Town Car — a sporty gold and silver two-door car that is powered by 12 6-volt golf cart batteries — daily since it was deemed safe by state officials and licensed in 1982.

On Saturday, he and his car were at the College of DuPage along with other electric car buffs and proponents of electric and solar energy sources.

Besides showcasing various cars powered by electricity, an electric recycling truck and photovotaics (solar electricity), the event — co-sponsored by the Illinois Solar Energy Association and the Fox Valley Electric Auto Association — featured speakers who discussed electric car options.

"It's the coming thing," Krajnovich said of electric cars. "It's zero emissions."

Jerry Mitchell of Glenview became an electric car buff when a friend gave him a 1977 Volkswagen Dasher with a burned-out motor. He converted it himself. Now the car runs on batteries and is plugged in at night to give it a charge. Solar panels looking a little like a beehive dot the top of the yellow car.

The top speed for Mitchell's car is 65 mph, but by going 30 to 35 mph the power lasts longer, and he's able to cover more distance, he said. An overnight charge can take the car 30 to 50 miles, he said.

"The electric vehicle is made to go to the train station and to school. It's not for driving to Milwaukee," Mitchell said. "If everybody's second car was electric, we wouldn't have a pollution problem."

Jim Hackett of Hinsdale boasts that his electric recycling truck does its part to save the ozone layer by not emitting pollutants while also saving money over the conventional vehicles used to collect newspapers, aluminum cans and other recyclables.

His truck, designed to his specifications and built in England, is powered by 36 industrial batteries that, once charged, can keep the vehicle moving down the street for two days. Charging the truck's batteries costs less than $2, based on the commercial night rate offered by Commonwealth Edison, Hackett said.

"This truck replaced a gasoline truck that used to burn 12 to 15 gallons of gas a day in the same application," Hackett said.

His truck is used daily to pick up materials from 1,000 recycling bins in Western Springs. The vehicle operates much like a golf cart, and the batteries will last seven to 10 years, he said.

Electric cars the way to go ... some day

By Laura Alonso-Kloth

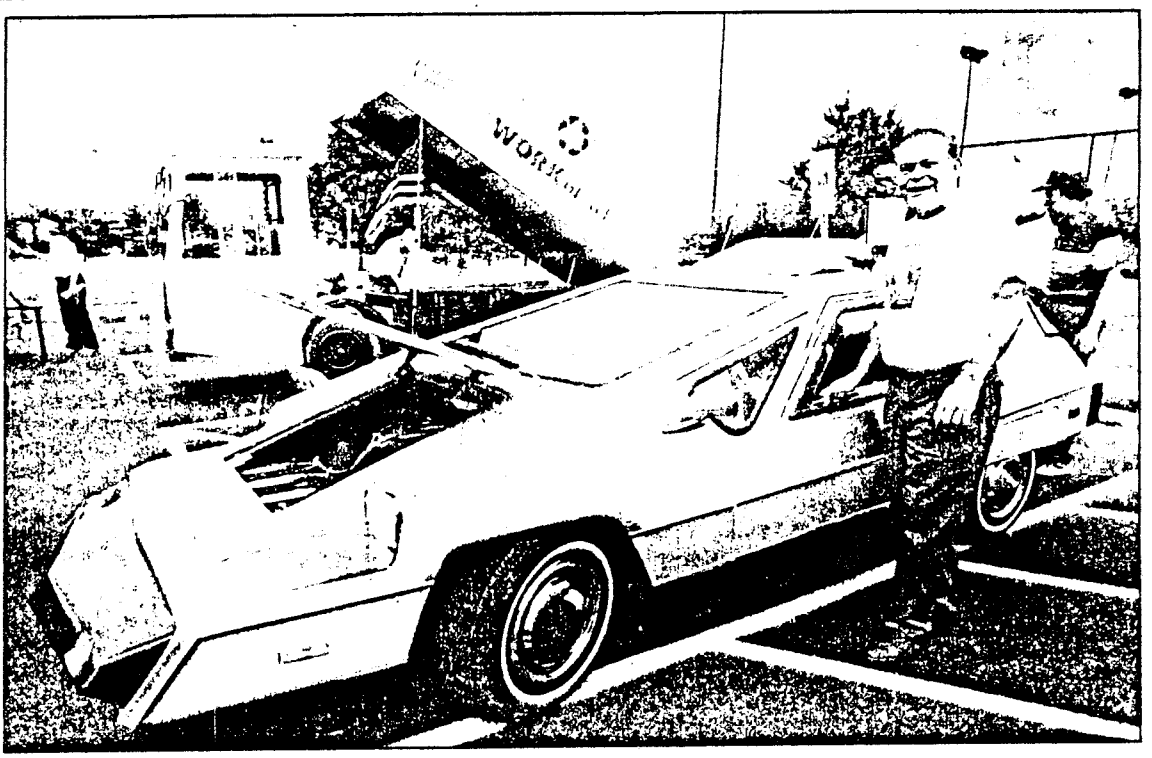
See editorial, page 10

Electric cars are quieter, cheaper to drive and better for the environment. So why is it that motorists continue to depend on gas-driven vehicles that not only pollute the air, but have forced Americans to become overly dependent on foreign suppliers?

Having studied the differences between electric and gas-driven vehicles, Ken Woods said he is convinced electric is better, but the idea just hasn't caught on and probably won't until car drivers demand a change. Woods and other electric car proponents discussed the benefits of electric cars and alternative energy resources during the Electric Car & Solar Energy Summer Event held at the College of DuPage in Glen Ellyn on Saturday.

As president of the Fox Valley Electric Auto Association, Woods, a professional engineer for 40 years, said car manufacturers need to re-[illegible]mine mass production of the electric cars to make them more affordable because the benefits are worthy.

During his lecture, "Beyond Oil Go Electric," Woods said Americans currently possess the technology to produce electric cars that could go from 20 to 120 mph, and are more energy efficient than gas-driven vehicles.



(Photo by Pat VanDoren)

Ken Woods, president of the Fox Valley Electric Auto Association, shows one of the electric cars at the weekend Electric Car & Solar Event held at College of DuPage.

Woods predicts the day will come when motorists will drive to the office or shopping mall and simply plug their car into an outlet, instead of stopping at a gas station for a fill-up. Ideally, a person would use the car all day long, and recharge it during the night. The cars could be plugged into 120- or 140-volt outlets. Woods said many cars have already been converted successfully, including a Bradley rescued from a junk yard and later purchased by television personality Ed Begley Jr.

Woods said in 1973 during the oil crisis, while most Americans were standing in line waiting to fill up, Batavia resident John Stockberger was converting his Fiat 124 to electric. "That's real guts. That's what it takes. We've had this technology for years," Woods said.

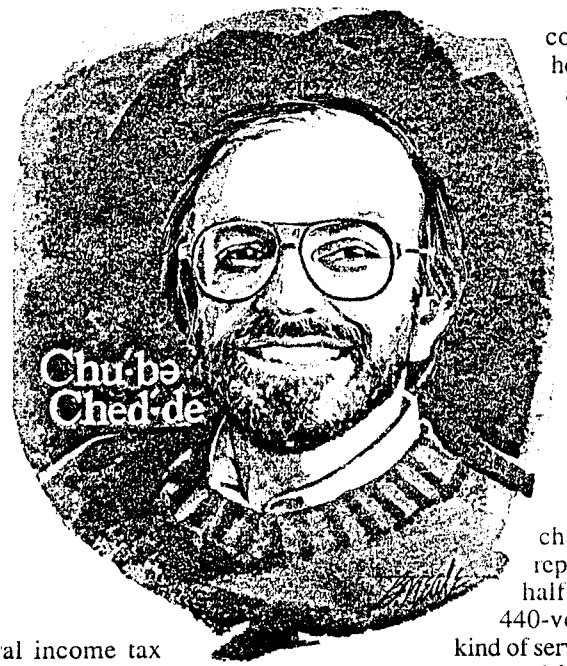
Though some conversion companies already exist, converting a gas-driven vehicle is very expensive, Woods said. The battery for a car like a Geo Metro could cost about $20,000. When comparing the cost benefits, electric cars win hands down. Woods said a person could travel as many as 75 miles in the city, and 112 miles on the highway for $1, while only traveling up to 22 miles in a Geo, and 19 miles in an Infiniti on a dollar's worth of gas. For people who wanted to supplement their gas-driven vehicle with an electric car, the cost savings could amount to $3,000 to $4,000 a year.

Several electric cars were displayed at one of the college's parking lots, including a futuristic sports vehicle built in 1981 by Oakbrook Terrace resident George Krajnovich. The car resembled a vehicle you might see on Star Trek, which could go up to 55 mph running on 12 Trojan 72-volt golf cart batteries. The ride is smooth, though the fans that keep the batteries cool are noisy. Taking no chances, however, Krajnovich attached a gas-driven motor to the back of his car to supplement his electric engine.

The event was co-sponsored by the Fox Valley Electric Auto Association and the Illinois Solar Energy Association. Both groups were organized shortly after the oil crisis of 1973.

THE STEERING COLUMN

Watt's happening?



It should come as no surprise to regular readers of this magazine that we at *Car and Driver* have not embraced electric cars with the unbridled enthusiasm we would have for, say, a redesigned Corvette ZR-1 that stickered for $20,000.

Electric cars promise to be slow, dull conveyances with about as much mechanical appeal as a refrigerator—in short, the antithesis of everything that enthusiasts enjoy about automobiles. What's more, we don't believe that electric cars will do much to reduce air pollution, certainly nothing that couldn't be accomplished faster, cheaper, and with vastly less inconvenience to us all by simply repairing the poorly maintained gross polluters or removing them from the roads.

Be that as it may, lawmakers in California have seen fit to implement a regulation that will force any carmaker that sells more than 35,000 cars annually in the state to blackmail, bribe, entrap, or otherwise cajole at least two percent of its customers into buying electric cars by 1998. The regulation says the percentage of electric-car sales must increase to five percent in 2001 and to ten percent by 2003.

Some will argue that this will never come to pass. They say that when Californians are confronted by these cars that carry less payload and operate at slower speeds for much shorter distances than conventional cars, and are then told by their government that they must buy them at higher prices, they will rebel. They will initiate recall petitions, break out the tar and feathers, or resort to more drastic measures to put a stop to this foolishness.

That would be delightful, but we should never underestimate a government's remarkable capacity for implementing laws that seem universally unpopular. When the federal income tax was enacted in 1913, the American populace did not exactly greet it with universal acclaim. Opponents had predicted that the government would soon jack up the rates from the initial one-to-seven-percent brackets to twenty or even thirty percent. Level-headed, moderate people of the day didn't take that argument seriously—everyone knew that the government could never get away with such confiscatory rates. In fact, by 1921, the base rate had risen to six percent and the top bracket was a whopping 77 percent.

That's why we take electric cars seriously. And the best way to do that is to test them, just as we test any other car, and honestly report what we find. This, however, is easier said than done, and some of the problems we've encountered illustrate the immaturity of the technology.

Because 1998 is more than four years away, no one has any mass-production-ready electric cars for us to test. The Big Three are, however, getting ready for the day of electric reckoning, and Ford and Chrysler have pilot programs under way right now.

Chrysler is converting 50 of its popular minivans to electric operation. Chrysler plans to sell these TEVans to electric companies for $120,000 each. Ford also has an electric-van program. The vehicle is called the Ecostar, and it's a conversion of a European Escort van that Ford plans to lease to fleet users for 30 months at a cost of $100,000. GM will implement a similar program next spring with a design derived from its electric concept car, the Impact.

Chrysler and Ford are perfectly willing to let us take brief spins in their machines. Chrysler even drove the TEVan across the country, accompanied by a horse trailer full of generator and charging circuitry that was towed behind a gasoline pickup. But neither company has been willing to let us live with one of their electric vans for a week or two, as we do with conventional road-test cars.

Part of the problem is that these vehicles aren't fully baked. Ford is still fiddling with the Ecostar's exotic sodium-sulfur batteries, and the TEVan's nickel-cadmium batteries work best with a special charger. This charger can replenish the batteries in about half an hour, but it requires a 440-volt three-phase circuit: the kind of service that powers electric elevators, and is not exactly common on street corners. With a 220-volt line—a typical electric clothes-dryer service—you can almost achieve a full charge in sixteen hours. Common 110-volt service doesn't work at all.

Because the special charger is at the Chrysler proving grounds about twenty miles west of Ann Arbor and the TEVan's typical range is about 80 miles, we couldn't even drive as far as the Detroit city limits if we wanted to make it back to the charger under our own power. Contemplating ways around this problem makes one appreciate the beauty of carrying an extra twenty miles in a metal can filled with seven pounds of gasoline.

Even if we didn't run down out on the road, would we be barely crawling back through the proving-ground gates? Remember that a Porsche 911 Turbo, for example, can hit 60 mph in 4.0 seconds whether its fuel tank is full or down to the last quart. But as you use up the juice in an electric car's battery pack, the motor gets progressively weaker and the car slows down. For an electric, we might have to measure—in addition to its absolute range—the range to the point before the electric becomes a slow-moving large pylon.

In fairness, gasoline cars would also have problems if fuel weren't readily available. But even if charging stations were common, it's hard to match the convenience of pouring hundreds of miles of driving into a tank in a matter of minutes.

In fact, if today's cars were electric and someone had just invented the gasoline-powered internal-combustion engine, I suspect it would be greeted as the breakthrough of the century. —*Csaba Csere*

Need for energy policy

The great Electric Car and Solar Energy show at College of DuPage Saturday was optimistically styled the "Summer Event."

It drew the committed, a few of the curious and, we suppose, some of the confused. In short, the preaching was pretty much to the choir. Too bad.

People at the show included those who have built solar homes and electric cars and other people who could speak knowledgeably about those things but not many were there to listen. We think this is a message that needs to get out.

In the '70s, there was much discussion and even commitment to the idea of alternative energy sources, following the first "oil crisis" when gasoline prices doubled and lines at the pump stretched around the block. Jimmy Carter, yes, that President Carter, spoke of breaking our dependence on oil as "the moral equivalent of war."

That makes President Clinton's proposed gas tax look easy. But the OPEC oil embargo ended, prices came down, oil flowed and our interest in alternative energy waned.

We have all heard that fossil fuels, including oil, are finite. We also dimly know that we import most of the oil we use from the politically volatile Middle East. What this means is brought home on occasion when the moral equivalent of war becomes the real thing and we have to send an army to the area to protect a friendly supplier as we did in the Gulf War.

We think it is important that Clinton's policies have refocused on alternative source development though we disagree with the exclusion of nuclear reactor research and development. The fast-breeder reactor being developed by Argonne National Labs would burn nuclear fuel efficiently and safely, including the current spent fuel rods and even weapons grade uranium. Nuclear fuel is currently our best alternative to fossil fuels.

Electric cars and solar homes are not cost-efficient on a mass scale in the United States now. Solar power, hydro-electric, geothermal, wind are all renewable sources that can be tapped, though this technology is in the future. It will remain in the future without research and development.

Photo-voltaic (sun powered) cells that are at the heart of this energy technology were developed in the United States and found application in the space program.

But there was more profit in oil. The technology, along with computer chips, and other forward looking research items, went overseas where the Germans and the Japanese find them both useful and profitable.

There will always be more profit in oil. Sunshine is free and it probably won't get a lot of political backing until it too can become a profit source.

Meanwhile, the research can go on, and maybe we will get smart enough to use it.

Westinghouse takes award

Westinghouse Electric has won the 1993 R&D 100 Awards competition, sponsored by R&D Magazine, for its development of an electric drive train being tested in some Chrysler mini-vans. The control unit boasts software that advances energy conservation and performance.

EVs & EV KITS AVAILABLE TODAY

Doran Motor Co., Sparks, NV 702-355-7356

Rich Doran and company, originally recognized for their three-wheeled vehicle plans and kit, now offer a production-built electric scooter called the *EcoScoot*, with an established 25 mile range and a top speed of 30mph. Price: about $2,000.

Electro Automotive's conversion kit.

Electro Automotive, Felton, CA 408-429-1989

With 15 years of experience with electric conversions, Mike Brown introduced a conversion kit for a VW *Rabbit* in 1992, which is eligible for a $1,000 tax credit in the state of California. Workshops available. Sale price: $6,500, without batteries.

Solar Car Corporation, Melbourne, FL 407-254-4566

With a 20,000 sq/ft manufacturing facility targeting 5000 electric vehicles produced by 1995, Solar Car Corp. offers a converted *S-10* Chevy pickup, a conversion kit for $6,500, and an electric Ford *Festiva*. All conversions use 12 hp Advance DC motors and standard lead acid batteries. Conversion kits and EV conversion training are also available. Prices: from $17,000-$30,000.

Solar Electric Engineering, Santa Rosa, CA 707-542-1990

Solar Electric, who has been selling conversions for over three years, recently announced a joint effort with Consulier Autor tive to produce a monocoque design electric utility van, expec to be delivered mid-1993. The chassis used for the majority of conversions to date are the Ford *Tempo* and Pontiac *Fiero*.

Solectria Corporation, Arlington., MA 508-658-2231

James Worden has built a reputation on solar and electric vehicle racing, which has lead Solectria to use efficient designs which make use of direct coupling with the differential rather than through the transmission. Both NiCd and lead acid battery packs are available as well as integrated solar panels. Prices: from $20,000-$65,000.

Sebring Auto-Cycle, Sebring, FL 813-471-0424

The original creator of the *Citicar* electric in the 70's, Sebring Auto-Cycle is presently producing the *ZEV-Colt*. The configuration is lead acid batteries and a 12 hp brushed DC motor. Price: starting at $15,000.

B.A.T. Technologies, West Valley, UT, 800-255-0906

Battery Automated Transportation Technologies recently set a range record of over 450 miles on a single charge using a proprietary battery technology, named the *Ultra Force*. Their converted Ford *Ranger*, priced at $23,000, is guaranteed to yield a range of 100 miles/charge and last for 100,000 miles.

Renaissance, Jessup, MD, 410-799-3550

Bob Beaumont, who sold over 1,500 EVs in the 70's will be back in 1993, with a purpose-built EV, which will initially be marketed only in Florida. Low sticker price and lots of experience make this EV attractive.

BUSES & SPECIALTY VEHICLES

Cushman, Lincoln, NE

In 1992 Cushman added an electric three-wheeled vehicle to their fleet of specialty vehicles for police, campus and park use.

Nordskeg Electric, Redland, CA

Fifteen passenger van with leasing options to businesses.

Electric bus built by Specialty Vehicles of Downey, CA.

NEW IN 1993

Green Motor Works, North Hollywood, CA 818-766-3800

Although not a producer of EVs, GMW is one of the first electric car dealerships selling a wide range of EVs and offering conversion services as well. They offer the Danish *Kewet*, the first purpose-built electric vehicle fully crash tested for the American market for $12,000, as well as Doran's *EcoScoot* electric motorcycle, and Solar Electric Engineering cars.

Specialty Vehicle Manufacturing Co., Downey, CA

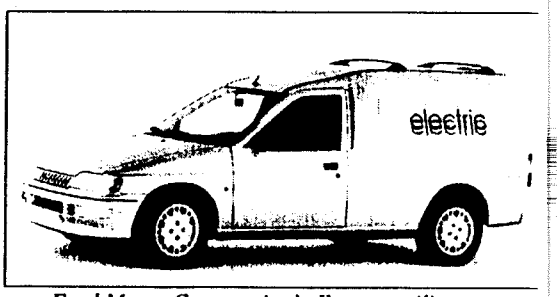
Twenty-four passenger bus with battery exchange capabilities.

Taylor-Dunn Manufacturing Co., Anaheim, CA

Long producers of electric golf carts, a specialty electric vehicle will be added to th line in 1993.

FROM THE BIG THREE:
Fleets for today, cars for tomorrow

Chrysler Corporation's *TEVan* is based on the popular Dodge *Caravan*. Nickel ir batteries developed by Eagle Pitcher provide 50% more power than lead acid batteri to the oil-cooled DC General Electric motor. The *TEVan* is rated for 1,200 lb payloa 1993 also saw the unveiling of Chrysler's quick-charge system. The 50-80 vans to be produced this year are being offered to fleets for $120,000.



Ford Motor Corporation's Ecostar utility van.

Ford Motor Corporation is releasing 150 *ECOStar* vans to fleet owners in 1993, for lease, at over $100,000 each. The utility van, based on the European *Escort*, features sodium sulfur batteries, a 75 three-phase induction motor, and can carry a 850 lb payload. Ford has also displaye their concept family taxi, the *Connecta*.

General Motors Corporation's purpose-built *Impact*, which debuted in 1992, has a demonstrated 0-60 in 8 seconds, squashing the perception of electrics as slow, sluggish and ugly. Powered by 32 10-volt lead acid batteries and twin 57 hp AC motors driving the front wheels, the *Impact III*, originally targeted for the general market, will be sold to fleets for over $100,000 in 1993. GM has also displayed a concept electric hybrid van, the *HX3*.

Conceptor Industries of New Market, Ontario, Canada, has produced and sold the G-Van to fleet users since 1991. The G-Van uses a GM van body and has a 50 mile range.