

Electric Delivery Truck & Van

Green Star Products is offering a joint venture arrangement or a license technology transfer to start assembly line production somewhere in Asia.

***By Joseph LaStella, Ret. P.E.
President of Green Star Products, Inc.***

When chapter one was published (titled “The New Hot Race for Electric Cars”) there was an immediate response and request for further information concerning an electric delivery truck-type vehicle for the Asian market. Green Star Products has extensive historical experience in regards to this type of vehicle. In book one, we reviewed the case history and need for a commuter-type residential vehicle. Without much discussion about other vehicles that Green Star produced and tested during the same time period. Green Star produced many electric Ford Ranger trucks off its assembly line in conjunction with Geo Metros.

Green Star had an arrangement with local Ford dealerships where it purchased new Ford Ranger trucks; then removed all the components not necessary for the electric vehicle which included the engine, radiator, exhaust system, starter, fuel tank and other components; and sold back these components - since these extracted items were new, as spare parts to the Ford dealerships.



Electric Ford Ranger Truck

Furthermore, while converting these trucks, Green Star was very careful to keep intact as much as possible the original Ford Ranger truck including its 12-volt battery and the entire 12-volt system. The electric conversion modules also included a DC-to-DC converter that took the voltage from the vehicle's battery pack at 120-volts and reduced it to a charging voltage for the 12-volt battery. This was necessary because the alternator from the existing Ford Ranger vehicle was removed along with its engine.

Green Star's Electric Vehicle Story & Proposal

Ford dealerships honored the Ford Ranger warranties on any components on the vehicle that were not removed or changed by the modification. This warranter arrangement was very advantageous to Green Star for the sale of these vehicles. Ford Ranger vehicles were sold to high profile people and institutions including universities, state governments, utilities and underground mining companies where clean air is essential.

As a matter of history, Ford Motor Company's headquarters in Dearborn, Michigan, discovered that Green Star was converting their trucks and ordered a cease and desist on Green Star for using our advertisement of Ford Ranger trucks. The Ford Motor Company did not know that we had an arrangement with their dealers. This incident immediately became a high profile story for Bloomberg in New York. Senator Orrin Grant Hatch (who was once considered a presidential candidate), a high profile powerful representative in Utah (where Green Star was located), became a champion in the defense for Green Star and wrote a powerful letter to the Ford Motor Company. The Ford Motor Company immediately wrote a letter rescinding their cease and desist and assured Senator Hatch that this issue would be amicably settled. This put our company in a very strong position in the industry because many people, who never heard of us, wanted to know why a powerful corporation such as Ford Motor Company would go to such means to try to stop our production of electric vehicles. This incident turned out to be an excellent marketing strategy for Green Star.

At a later date, Ford Motor Company offered to sell the industry "gliders" (a chassis without an engine) to Green Star. However, their demands were extraordinary. The greatest drawback of the Ford Glider Program was the fact that they intended to keep the government credits for each electric vehicle produced on their chassis. These government credits would be worth an extreme amount of money in the future if the California mandates for 1998 were upheld because every major car company which sold regular vehicles in California would have to either produce a certain number of electrical cars per year or buy the equivalent EV credits from another manufacturer. Green Star refused to give up these valuable credits and walked away from the Ford Glider Program.

During the same period, Lockheed Martin was looking for an electric vehicle company to participate in their F-16 Offset Program. Government and military offset programs are very important in the sales of military and other equipment to foreign countries. Companies like Lockheed Martin are required to spend up to 10% of a contract value in equivalent offset programs in the participating

Green Star's Electric Vehicle Story & Proposal

country. The fulfillment of offset contracts are essential for the culmination of sales which included F-16 fighters to foreign countries such as Taiwan and other countries.

During the period of the late 1990s and into the millennium Green Star Products entered into several strategic relationships with Lockheed Martin in Taiwan, the Czech Republic and Poland. As a matter of mutual courtesy we asked Lockheed Martin to help Green Star to find a suitable glider to produce electric vans and trucks in the United States.

Lockheed Martin helped Green Star with an introduction to the Taiwan based China Motor Corporation. China Motor agreed to sell Green Star their delivery van as a glider for use in the manufacture of electric vehicles. This van had exceptional engineering specifications inasmuch as it was capable of carrying almost twice its own weight in cargo. The first van was delivered to the United States in 1996 and was converted by Green Star's assembly line plant at the old Lockheed Martin building in Burbank, California. Green Star's headquarters were also located at this facility.

Electrovan™



*Green Star's Electrovan
Based on China Motors Delivery Van*

The Lockheed Martin facility in Burbank was nicknamed the “Skunk Works”, a renowned building which had been converted to a low pollution automotive research and design facility under the auspices of CALSTART. The Lockheed Martin Burbank “Skunk Works” was famous for many years for producing advanced military aircraft and was also a place where Howard Hughes spent much time. Green Star was the largest occupant of this CALSTART building.

During the same period, a company from Germany called the Kummerow Corporation had developed a battery based on zinc-air technology. Although it was Green Star's opinion that the battery was not ready for production, it certainly presented some unique characteristics. In February of 1997, it was announced that a global partnership had been signed between a Singapore corporation called Green Fuel Resources, the Kummerow Corporation and

Green Star's Electric Vehicle Story & Proposal

Green Star to use these new batteries in the China Motors mini-van and attempt to break a world distance record. The record was to be set at a track in Utah, in the middle of winter, in sub-freezing temperatures and at a speed that would be normal for Asian city driving delivery vehicles.

On February 24, 1997, a world distance record of 478 miles on a single charge was set. This record soon attracted world attention as it presented a real historical milestone for electric vehicles. Green Star later set additional vehicle records with these batteries including the record for electric bicycles which was set at the Olympic Velodrome at the California State University. Four world-class bicyclists drove the bike, without pedaling, for a total of 30 hours straight and traveled a record 443 miles without a recharge. All this publicity pushed the German battery developer Hanz Kummerow and the other member of the global partnership, Green Fuel Resources of Singapore, to make the decision to immediately produce commercial batteries for use in the transit bus industry in Singapore. Although Green Star owned 20% of the Kummerow Partnership, it could not influence its global partners not to produce the batteries commercially. Green Star still believed that the batteries were not ready for commercial operation. Green Star refused to take part in the Singapore project and eventually it proved to be a correct decision. A large quantity of zinc-air batteries were later delivered to Singapore installed in their converted buses and failed within the first week of operation bringing the zinc-air battery era to an abrupt finish.

It should also be noted that Green Star was also very active in the electric bicycle industry and that was one of the reasons for setting an electric bike vehicle record. During 1996, there were three companies involved in creating the electric bike market in the United States, they were the EV Warrior, the ZAP and the Electrobike (a Green Star subsidiary) .

Lockheed Martin also introduced us to an electric bicycle manufacturer in Taiwan and we imported many containers of electric bikes into the United States. Later, we added our own design electric bike built in the U.S. to our electric bike production line. This was unveiled at a Green Star Stockholder's Meeting at the Lockheed Martin Skunk Works in 1996.

Lockheed Martin also acted as a matchmaker for a third line of vehicles from the giant Skoda Corporation in the Czech Republic and in fact we were setting up programs to accept gliders both from Skoda and China Motors.

In 1997, politically, the electric vehicle mandates were beginning to

Green Star's Electric Vehicle Story & Proposal

deteriorate. The big three U.S. auto makers filed a lawsuit against the State of New York in effort to defeat the state's mandates for the sale of zero emission vehicles that were to be enacted with the 1998 model year. The filing of this lawsuit eventually lead to the mandates being dropped by the East coast states and eventually by the State of California. Without the mandates, the electric vehicle market soon disappeared and Green Star Products successes had to be abandoned and the company went on to its new future in the alternative fuel business.

Green Star Products still possesses the knowledge and experience to build low cost electric vehicles to fill a real gap in the transportation business. Once again interest in electric vehicles has been hype due to the high price of petroleum fuels as pointed out in the first chapter of our report.

We have enclosed some pictures of our Ford Ranger truck and the Electro-Van from China Motors.

We are offering a joint venture arrangement or a license technology transfer to start assembly line production somewhere in Asia.

The Electro-Van demonstration in Utah, the Electrobike demonstration at the California Velodrome, and the Geo Metro record established at Pikes Peak still stand to this day.

It is noteworthy to remember that the electric vehicles are independent of their battery pack. A vehicle that is purchased today running on lead-acid batteries can utilize any advanced battery pack in the future just by changing the batteries, not the vehicle. Electrons are the same from all sources.

For more information please contact:

Joseph LaStella, President
Green Star Products, Inc.
info@GreenStarUSA.com
(800) 741-7648, (800) 340-9784
(619) 789-4743 fax