

Introduction

The Ford Motor Company introduced the Ranger EV in order to meet the demand of the environmentally conscious consumer. In 1999, they were one of the first vehicle manufacturers in the nation to either sell or lease electric vehicles. During the first year, Ford sold or leased hundreds of these vehicles throughout the United States and Canada, claiming that they had met the demands of the consumer and that the Ranger performed comparably to its internal combustion counterpart.

Individuals who have driven the Ford Ranger EV find that the truck is significantly quieter and easier to handle than its internal combustion alternatives. With zero emissions during operation, the vehicle provides excellent performance with little environmental impact. The driving force for this model is a 90 horsepower, three-phase AC motor with single speed transaxle connected to a robust rear-wheel drive train. A heavy-duty frame and suspension support the truck; the charging of the vehicle is easily accomplished using an inexpensive conductive charging system.

After several years of production, Ford abandoned the Ranger EV project as competing automakers began to introduce the new generation of energy efficient vehicles: electric-gas hybrids. After the introduction of the hybrids, the driving distance limitations and the awkwardness of the massive battery pack left the Ranger EV less desirable for some consumers of the energy efficient vehicles. Ford then requested that the leased vehicles be returned immediately without the option to buy. When returned, the Rangers were destroyed.

However, a number of the vehicles still do exist and are owned by private parties or serve as corporate fleet vehicles for various entities, such as, the Detroit Zoo. Because there is no longer repair support for the vehicles, battery packs that go bad leave the owners with very few options to get their vehicles running again.

Recently, the Institute for Environmental Research and Education on Vashon Island began a project called “Energy Independent Communities.” The goal of the program is to eliminate the island’s reliance on outside sources of energy. Rita Schenck, a project member, began looking into electric vehicles that would be available for use to the islanders. Rita Schenck purchased a 1999 Ranger EV through the Internet auction site eBay. Because the island is only thirty miles long, the Ranger was ideal for the short trips.

After several months of use, the vehicle lost power during operation and was unable to recharge. Options for diagnosis and repair of the vehicle were limited, as Ford had eliminated the EV project, its team members, and company-sponsored support for vehicle owners. Schenck approached Professor Joyce Smith Cooper of the University of Washington Mechanical Engineering Department for help in making the vehicle operational again.