powered by an advanced sodium-sulfur battery was successfully run, demonstrating a range of more than 100 miles on a single battery charge.

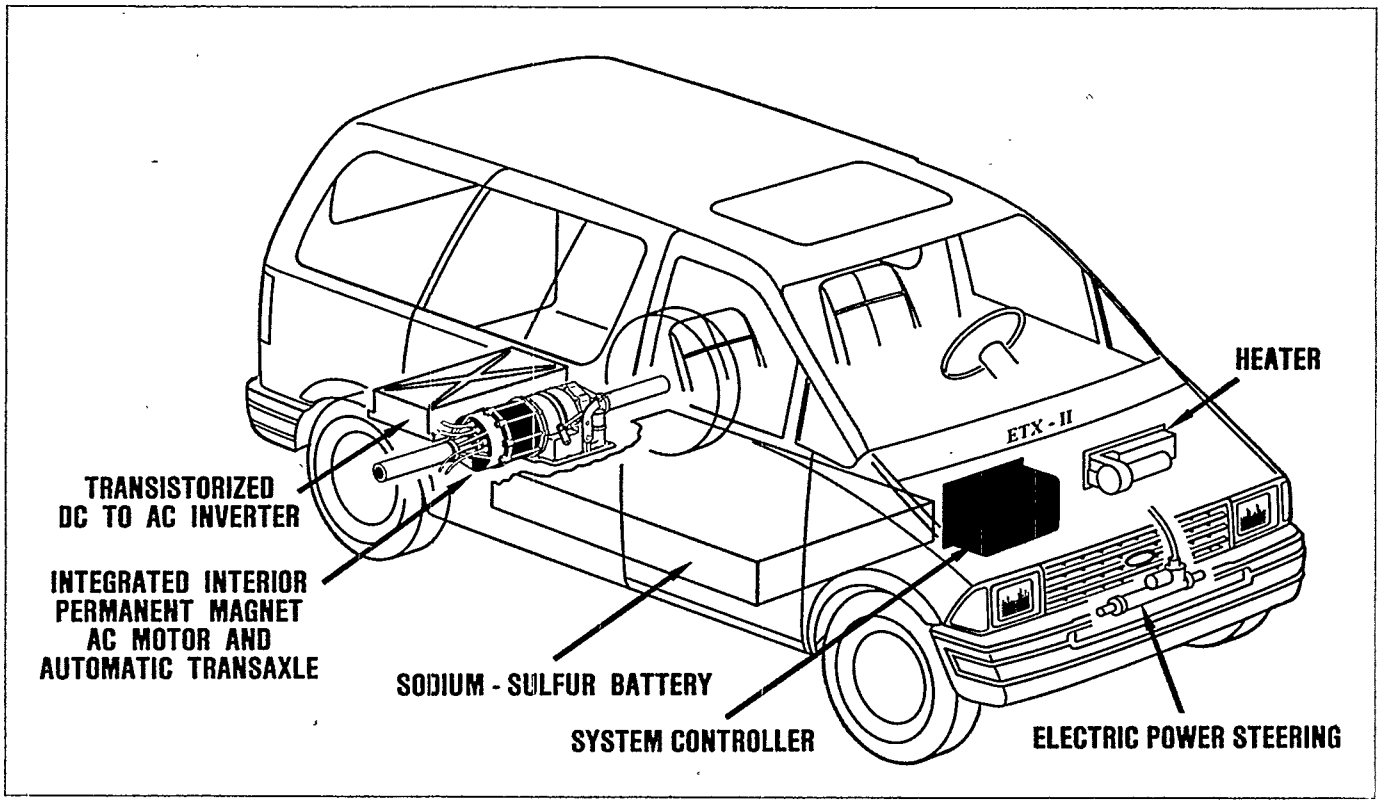
Nonautomotive Stirling Engine Applications

Stirling engines use an external heat source to provide usable mechanical energy. These engines feature low noise, high efficiency, low pollution, and low vibration levels, making this unique technology particularly useful in several applications. In particular, the capability to use any source of heat as fuel, including solar or nuclear power, makes this technology an attractive candidate for remote applications such as in-orbit power supplies, where conventional power systems are not feasible.

As DOE-sponsored Stirling engine technology research began to demonstrate the validity of using Stirling engines in automobiles, other uses for this technology became apparent, including applications in solar power modules, irrigation systems, and mobile power generation systems. Associated research programs, such as the high-temperature, low-cost alloys projects, will result in increased levels of Stirling engine efficiency. Remote power generation systems already have limited market penetration, and demonstrations of Stirling engine technology sponsored by other Federal agencies and private sector firms are currently under way.

Alternative Transportation Fuels

The transportation sector relies almost entirely on petroleum products as a source of energy. Recognizing the vulnerability of this sector, DOE has sponsored research activities to develop alternative fuels. In cooperation with the Department of Transportation, numerous academic institutions, and private sector firms, DOE research has focused on long-term, high-risk, basic research oriented toward developing alcohol-fuels technology to supplement, and eventually replace, conventional hydrocarbon fuels.



The Ford ETX-II, a state-of-the-art electric vehicle, integrates advanced sodium sulfur battery technology with advanced single-shaft, alternating-current power train technology.