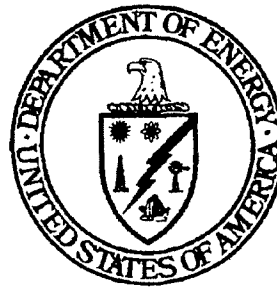


HYBRID VEHICLES PROGRAM

18th ANNUAL REPORT TO CONGRESS FOR FISCAL YEAR 1994



April 1995

U.S. Department of Energy
Assistant Secretary, Energy Efficiency and Renewable Energy
Office of Transportation Technologies
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Section 615 of the Energy Policy Act of 1992, Public Law 102-486, 42 U.S.C. §13285. In addition, this report is intended to serve as a means of communication from the Department to all the public and private sector participants involved in making the program a success, and other interested parties.

The Department remains focused on the technologies that are critical to making electric and hybrid vehicles commercially viable and competitive with current production gasoline-fueled vehicles in performance, reliability, and affordability. During Fiscal Year 1994, significant progress was made toward fulfilling the intent of Congress. The Department and the United States Advanced Battery Consortium (a partnership of the three major domestic automobile manufacturers) continued to work together and to focus the efforts of battery developers on the battery technologies that are most likely to be commercialized in the near term. Progress was made in industry cost-shared contracts toward demonstrating the technical feasibility of fuel cells for passenger bus and light duty vehicle applications. Two industry teams which will develop hybrid vehicle propulsion technologies have been selected through competitive procurement and have initiated work, in Fiscal Year 1994. In addition, technical studies and program planning continue, as required by the Energy Policy Act of 1992, to achieve the goals of reducing the transportation sector dependence on imported oil, reducing the level of environmentally harmful emissions, and enhancing industrial productivity and competitiveness.

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exhaust gases.

The Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 authorizes the Department of Energy to, among other things, "encourage and support accelerated research into, and development of electric and hybrid vehicle technologies." 15 U.S.C. §2501(b)(1). The Department established the Electric and Hybrid Vehicles Program to undertake, in cooperation with industry, research, development, testing, and evaluation activities to develop the technologies that would lead to the production and introduction of electric and hybrid vehicles in the Nation's transportation fleet. The Program is managed by the Electric and Hybrid Propulsion Division within the Office of Propulsion Systems. In Fiscal Year 1994, Congress provided an appropriation of \$74 million for the Program.

The current program structure and principal responsibilities of the organizational units are shown in Figure 1-1. The participants in electric and hybrid propulsion systems research and development, and their cost-sharing commitment, are listed in Table 1-1. Participants include major automotive companies, battery companies, component and propulsion system companies, universities, and electric vehicle users from the public and private sectors.

In Fiscal Year 1994, the Program continued to emphasize battery, fuel cell, and propulsion systems development. The Program also supported testing and evaluation of vehicles and components in laboratory and fleet operations. The battery program concentrated on technologies that could satisfy the mid- and long-term goals of the automobile manufacturers as determined by the United States Advanced Battery Consortium. Two major cost-shared contracts were placed with automotive industry teams for the development of hybrid propulsion systems that would double the fuel efficiency of conventional vehicles and satisfy the Environmental Protection Agency Tier II emissions standard.

The Energy Policy Act of 1992, in Title XX, Subtitle A, recognizes the role of electric vehicles in reducing the nation's dependence on imported oil. Section 2025 authorizes an expanded program of research and development of electric motor vehicles and associated equipment. Subtitle A of Title VI provides for a commercial demonstration program in electric vehicles. In Fiscal Year 1994, the comprehensive five-year program plan developed for carrying out the purposes of Section 2025 was completed.

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