

BALLARD • cont'd from page 1

"Daimler-Benz wants to be the first to bring a fuel cell engine production automobile to market and to develop with Ballard a major business in supplying fuel cell engines to the world."

Responding to that trend, Ballard and Daimler-Benz are investing more than \$450 million in a complex joint venture involving the formation of two companies: one to develop and manufacture fuel cell engine systems; the other to market them to automobile and bus manufacturers. As part of the deal, Daimler-Benz will invest \$198 million

to acquire 25 per cent ownership of Ballard Power Systems.

Mr. Firoz Rasul, Ballard's President and Chief Executive Officer, described the joint venture as "the most significant event in Ballard's history."

Dr. Ferdinand Panik, Senior Vice-President of Daimler-Benz, describes the fuel cell engine as "the alternative engine with the greatest chance of seriously competing with the combustion engine. Daimler-Benz wants to be the first to bring a fuel cell engine production automobile to market and to develop with

Ballard a major business in supplying fuel cell engines to the world."

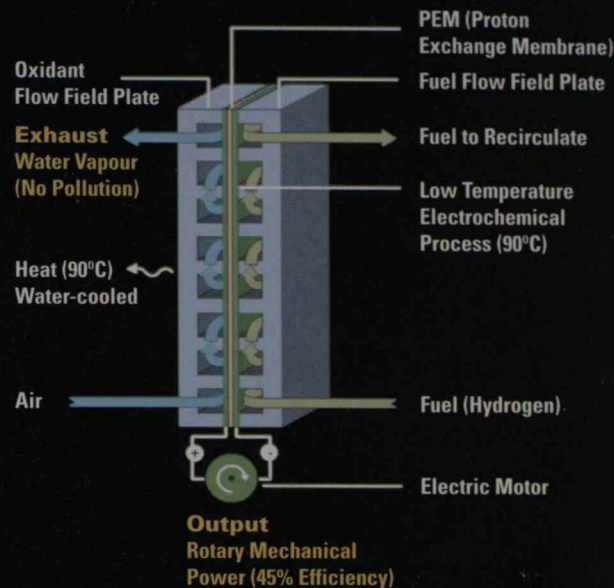
The joint venture is an extension of four years of previous collaboration by the two companies, in the development of fuel-cell powered vehicles. Ballard fuel cells power the NECAR II, the world's first traffic-ready fuel-cell car, which Daimler-Benz unveiled to German media last year.

Spokespersons for the two companies say it will be about eight years before production-scale fuel-cell cars reach the market. Buses are a different story, not only because they are easier to build than cars, but because municipalities are more likely to pay a price premium for environmentally friendly equipment. In fact, Ballard is scheduled to deliver three fuel cell-powered buses in the fall of 1997, to the Chicago Transit Authority which is thinking about converting its entire 2,000-bus fleet to the system as vehicles come up for replacement.

The company has also made an impact on the car-building side of the industry. Ballard recently landed a \$4 million contract to supply fuel-cell integration in a test vehicle for Chrysler Corporation. In March 1997, Japan's Nissan Motor Company placed a \$2-million order for Ballard fuel cells

and test equipment for its own research and development program. And Ballard and the Ford Motor Company are teaming up to build an environmentally friendly sedan that will look

Single Cell Ballard Fuel Cell Engine




much like the Ford Taurus except below the hood.

Power plants

Ballard's market also includes utility companies: in 1996 the company signed a \$31.2 million joint venture agreement with GPU, a U.S.-based electric company, for commercialization of fuel cell-based power plant systems.

Ballard's history is a case study in growth by innovation. In the early 1980s, the firm's primary business was the development of lithium batteries for the military, but the company was keeping an eye on wider horizons: even extraterrestrial ones. In the 1960s, NASA had been using proton exchange membrane (PEM) fuel cells in its moon landing program. Ballard was one of the first companies to recognize the commercial possibilities of bringing PEMs in from space to meet the environmental challenges of energy use on earth. Since then, the company has become the acknowledged world leader in PEM cell development. Its 300-member fuel-cell research and development unit in

Burnaby is believed to be the world's largest group of professionals working on PEM fuel cells. ♦



At the heart of Ballard's fuel-cell system is the company's proprietary PEM (Proton Exchange Membrane) which has significant cost and performance advantages over other commercially-available membranes.