

Testimony on Fuel Cell Portable Power Systems

By

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I. Introduction

Good afternoon, Mr. Chairman. My name is Jim Balcom, and I am the President and CEO of PolyFuel, a world leader in engineered membranes for fuel cells.

Mr. Chairman, the Energy Policy Act of 2005 contains a variety of R&D initiatives designed to accelerate the commercialization of fuel cell technology. I want to thank the Committee for its leadership in developing this legislation, and I would urge the Committee to continue advocating full funding for the implementation of the Act.

II. Portable Power—Catalyzing the Fuel Cell Industry

As the Committee evaluates the Administration's progress in implementing the Act, I would like to share two observations:

1. While the automotive application will allow society to realize the environmental benefits of fuel cells, the success of fuel cells in this market will be preceded by and catalyzed by their success in the portable power market; and
2. Companies and governments that want to have a leadership role in automotive fuel cells must play an active role in the introduction of fuel cells into the portable market.

The reasons for this are that the portable fuel cell application ranks higher in six critical market readiness attributes:

1. Cost targets are easier to hit;
2. Durability targets are easier to hit;
3. Fuel infrastructure requirements are easier to put in place;
4. Regulatory changes are well on their way to being established;
5. Market kinetics for adoption of new technology are very rapid; and
6. Consumer demand for the longer runtimes that portable fuel cells will deliver is very strong.

The last 2 are the most critical. From history, we know that technological progress happens most rapidly in real markets with real demand pressures. The examples of this are all around us, from the rate of improvement in cost and performance in video camera technology, hard disk drive storage, and mobile computing.

Unlike the automotive fuel cell market, where the best case scenario has fuel cell technology meeting the DOE's commercial targets in 2015, we believe that strong consumer demand and rapid market kinetics will result in the implementation of portable fuel cells within the next 2 to 3 years.

The subsequent mass commercialization of portable fuel cells will catalyze the automotive fuel cell market. That's because of the "Experience Curve" effect. This

occurs as new designs, materials and processes are developed to meet market demand and solve real customer problems. We predict that these innovations in portable fuel cells will have direct spin-off benefits for automotive fuel cells, which share many similar designs, materials and processes.

We feel that we're already seeing this at PolyFuel, both internally and externally:

Internally, we have spent a significant amount of money developing membranes for portable fuel cells, and that knowledge has led us to critical advances in membrane technology for automotive fuel cells as well.

Externally, a number of leading fuel cell industry players have recognized the opportunity for market leadership, and are moving convincingly into the portable fuel cell market space.

III. Conclusion

The 21st Century will be dominated by energy concerns. Fuel cell technology will play a key role in US efforts to achieve energy independence, improve the environment, and grow the economy. However, without a strong presence in portable fuel cells, the US risks missing the boat in the broader fuel cell market applications. The US auto industry has already experienced this in hybrid vehicle technology, where one US auto executive complained recently that it could manufacture and sell more hybrid vehicles today, but it could not obtain enough hybrid components from the foreign auto manufacturer that developed the technology.

The U.S. has the opportunity to solidify a strong leadership role in fuel cell technology, but it must act now to strengthen government and industry partnerships and refine the enabling technologies to realize this opportunity.

I recommend that the government reinstate funding for the competitively-awarded, cost-shared portable fuel cell programs that were deferred based on budget constraints by the Department of Energy in early 2006. I also recommend that the government look for ways to increase its support for research, development, demonstration, and commercialization of portable fuel cell technology. In this way, I strongly believe that the US will best position itself to benefit from the synergies that will soon be available as portable fuel cell technology acts to catalyze the automotive fuel cell application. In an era of rapid decline in domestic manufacturing jobs, the importance of securing a leadership position in next generation fuel cell technology cannot be understated.

I appreciate this opportunity to appear before the Committee, and I look forward to your questions.

Thank you Mr. Chairman.