

3 Questions: The Smallest Shall Lead Them

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With Jim Balcom, president, [PolyFuel Inc.](#) Balcom recently spoke at the Ninth Grove Fuel Cell Symposium in London.

Question: Your position is that mobile applications, not stationary or automotive, will drive the fuel cell market. Is that the common feeling?

Balcom: I'm not the only one saying that. At the wrap-up of the conference ... the panel moderator for the panel I was speaking on made the point that portable fuel cells will be the first application. The learning coming from that will spill over to the automotive and the transportation fuel cells. That was reinforced by the other panel chairpeople. They virtually reinforced the same point.

Question: Why is portable ahead?

Balcom: The cost targets are much easier to meet than in the automotive or stationary [sectors]. In portable, you are competing against lithium-ion, which still has a relatively high cost. So the cost targets are easier to hit in portable. The second reason is durability. The durability target in portable electronics is in the 2,000- to 3,000-hour range. Most people lose a device before that. In automotive, [fuel cells have] to last for 10 years; in stationary, for 40,000 or 80,000 hours of run time. It's tough for fuel cells to reach those higher durability targets. The third reason is the fuel infrastructure for portable cells. They will be methanol fuel cells, [which will cost] pennies. So the cost structure is easy to meet for methanol. The complexity of the fuel cartridge is less than the complexity of a disposable butane lighter. Companies like Bic and Duracell want to get into the business. The fourth reason is the regulatory requirements. In order to enable the technology, efforts began with the UN in 2004, with a decision that set the rules in motion. The ICAO [International Civil Aviation Organization] considered it in 2004. The next step is the IEC [International Electro-Technical Commission] in 2006. Reason number five has to do with market dynamics. The demand for longer run time power supplies is very strong, unlike in automotive and stationary, where [the drivers] are not so clear. In portable electronics, application people very much want longer run times. The device makers, for their part, can build devices that have more functionality. The wireless carriers, for their part, can deliver content, can deliver television to handsets. The missing link is that the battery makers cannot supply enough energy in a small package. The final point is that the market kinetics in portable market are very fast. The move from generation to generation of new devices is very quick. That will help speed adoption of new technology.

Question: What do you see as the time line?

Balcom: We're taking a view that 2005 and 2006 will be the years of the test market introductions; 2006 and 2007 will be years of early and niche markets like military and some industrial applications; while 2007 and 2008 will be the commercial launch. That coincides with the conservative projections of our customers, who we consider to be the major fuel cell developers.