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**HORIZON FUEL CELL TECHNOLOGIES**

**For Immediate Release:**

**Horizon launches pocket-size fuel cell power plant for portable electronics**

- *World's first fuel cell product to compete on cost with both disposable and rechargeable batteries*
- *Refilling just one cartridge 100 times avoids using 1000 disposable AA alkaline batteries*
- *100% recyclable, no heavy metals, no toxic liquids used as fuel*

**Singapore, June 16, 2010** - Horizon Fuel Cell Technologies announces the launch today of a disruptive pocket-size fuel cell power plant targeting portable consumer electronics markets. Named MiniPak, this is the first of several Horizon portable fuel cell power products of varying size and fuel storage technologies to be released commercially over the next months and years.

Starting sales at \$99, the MiniPak breaks the cost barrier traditionally associated to most fuel cell devices, making it the first affordable and refillable fuel cell product to enter the consumer portable electronics market. A higher production levels, prices are expected to drop to \$29, with extra fuel cartridges sold at prices similar to disposable alkaline batteries, and refilling costs not exceeding a few cents.

The MiniPak addresses the growing power gap common to an increasing number of portable electronics, whereby the design of today's handheld devices is constrained by the runtimes they are able to achieve. While batteries and efficiencies are improving, faster data networks and more power-draining functionalities such as TV or videoconferencing are accelerating the need for higher energy density fuel cell power supplies. Without changing any of today's battery-operated devices, Horizon packaged its fuel cell technology into a pocket-size energy accessory that helps increase runtimes and maintain connectivity, while reducing dependence on wall sockets.

The MiniPak "personal power center" delivers 1.5 to 2W of continuous power using a standard USB port, and uses refillable fuel cartridges able to store up to 12Wh of net energy. It is designed to extend the charge of small portable electronics (cell phones, smart phones, MP3/MP4, GPS), but also to free up thousands of creative USB applications normally connected to and powered by PCs. Numerous fuel cell powered USB applications can now be taken "off-grid", including flashlights, wireless speaker systems for smart phones, personal mosquito repellants and many more.

Although the Minipak's capability is limited to small devices, it is effectively a miniature-scale power plant that produces electricity directly from hydrogen at the point of use. Similar to a pocket-size distributed energy system, it avoids the energy losses that occur between the power plant and the battery operated devices that we charge from sockets in the wall. Added together these losses aren't small, as in the US alone we are talking about 10,000 power plants with an average thermal efficiency of 33%, and



transmission losses of around 5-10%. When it comes to portable electronics, the US Environmental Protection Agency estimated that in 2004 in the US alone, there were 2.5 billion AC to DC power adapters consuming 207 billion kWh per year or up to 6% of the \$247 billion national electric bill. It is further estimated that 6 to 10 billion similar devices are presently in use worldwide, operating at an energy efficiency of around 50%. Whereas the MiniPak is not applicable to all AC to DC powered devices, it can indeed participate in reducing billions of dollars of wasted energy costs.

Besides contributing to overall efficiency, Horizon's new micro-fuel cell system offers numerous environmental benefits. Just one of its Hydrostik fuel cartridges can be refilled over 100 times, and each can run 10 times longer than one disposable AA battery at a continuous power draw of 1W. This means that over its lifetime, the use of over 1000 disposable alkaline AA batteries could be avoided. In addition, the cartridges do not contain any toxic materials and can be 100% recycled, using conventional methods.

The MiniPak micro-fuel cell is using a combination of Horizon's mass-produced PEM fuel cells and a new low-cost metal hydride storage solution, which is able to store hydrogen safely as a dry, non-toxic and non-pressurized material. The fuel cartridge contains a metallic sponge that is able to absorb hydrogen and turn it into a solid hydride. It is then able to release it back to the fuel cell when needed. The PEM fuel cell combines oxygen from the air with the stored hydrogen - electricity via its USB port and trace amounts of water vapor. The system is simple, compact and futuristic, following Horizon's award-winning product design legacy.

*"Over the past 4 years, Horizon has brought to market several award-winning products to retail environments in over 60 countries around the world. As these were primarily toys, few have realized the implications of these first products. They have in fact enabled Horizon to become the world's largest volume producer of micro-fuel cells, and placed the company in a prime position to begin mass-commercialization into other new markets, including portable electronics. Our global market experience and mass-production are already in place, and with costs competitive to disposable batteries, Horizon's refillable fuel cell products shift the paradigm",* noted Taras Wankewycz, Founder and Chief Marketing Officer.

The MiniPak is Horizon's first portable fuel cell product to enter the market, while several others are currently under joint development with various large-scale global market leaders. Horizon is also scaling up the size of the solutions, since they offer the promise of storing renewable energy in larger quantities with no self-discharge and at a lower cost than batteries, therefore opening a path towards independent, distributed energy in homes, businesses and other industrial applications.

***About Horizon Fuel Cell Technologies Pte. Ltd.***

*Thinking big, yet starting small, Horizon pioneered the sales of next-generation fuel cell power products as small and simple consumer products, while developing more advanced power solutions for portable electronics, aerospace, and light-duty transport. With comprehensive technological developments focused on enabling the commercialization of fuel cells Horizon is the first company to bring advanced fuel cell technology out of the laboratories and into the mainstream market. For more information, visit <http://www.horizonfuelcell.com>*