

Advanced car battery makers seek juice from stimulus plan

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The U.S. is struggling to catch up with China, Japan and Korea in a race to build the advanced batteries needed to power the electric cars of the future.

The latest setback came last week, when General Motors picked a Korean company over an American rival to build lithium ion batteries for GM's Chevy Volt, which is due on the market late next year.

Lithium ion is the current hot technology to replace the familiar leadacid batteries used in most cars today, and the newer nickel-metal hydride batteries in hybrid electric vehicles, such as Toyota's popular Prius.

The National Alliance for Advanced Transportation Battery Cell Manufacture intends to ask the U.S. government for as much as \$2 billion in grants and loans during the next five years to jump-start the American lithium ion industry, while creating thousands of jobs in the process.

The alliance, a group of 14 U.S. battery manufacturers that was formed in December, hopes it will be funded as part of the stimulus package proposed by Congress and the incoming Obama administration. Electric cars reduce the demand for oil and contribute less to global warming.

Lithium ion is an extremely light metal atom that's lost or gained an electron and can be used to produce an electric current. Small lithium



ion batteries are widely used in cell phones, power tools and laptop computers, but aren't yet ready for mass use in cars.

The battery gap has major implications for the health of the U.S. auto industry and, more broadly, for U.S. competitiveness in the world.

"For 20 years, the United States has sat idly and waited for foreign markets to become the leaders in lithium ion technology," said Alan Eishafei, chief executive of MicroSun Technologies of Lisle, Ill.

Experts say a moderately priced battery with enough power and endurance may be the key to survival as the industry attempts the difficult transition from gasoline engines to an electric future.

"Whoever makes the batteries will one day make the cars," said James Greenberger, an attorney for the battery alliance. "If we don't secure a supply, we'll be at the mercy of foreign suppliers - not just for the battery but for everything else that goes into a car."

Asian firms, backed by heavy government subsidies, currently dominate the growing advanced battery market. The U.S. has no large-scale domestic manufacturer, and must import almost all the lithium ion "cells" that make up the battery, said Greenberger, a lawyer with Reed Smith LLP in Chicago.

"Electric engines will help break our reliance on petroleum," Greenberger said. "They are cleaner and much more efficient than the internal combustion engine."

A123 Systems of Watertown, Mass., the company that lost the Chevy Volt contract, had recently applied for a \$1.84 billion loan from the Energy Department to open a large battery assembly plant in the Detroit area.



GM announced on Jan. 12, however, that it would buy lithium ion cells from LG Chem of Seoul, South Korea. The cells will be manufactured in Korea and assembled into battery packs at a new facility that GM will build in Michigan. Robert Lutz, a GM vice chairman, said that his company preferred the Korean design.

"LG Chem has massive support from the Korean government," Lutz said at the Detroit Auto Show. "Korea recognizes that advanced battery technology is a key component of the country's competitiveness."

American lithium ion backers acknowledge that their batteries face a number of problems before they can be widely used in cars and trucks. They include cost, endurance and the need for a nationwide infrastructure of recharging stations.

The Energy Department has set a target price of \$1,700 to \$3,400 for an all-electric car battery that could go 40 miles on a full charge.

The lithium ion battery in the Chevy Volt is believed to cost significantly more than that, but the price should go down as more vehicles are sold. GM said the first Volts are expected to sell for about \$35,000.

Theoretically, lithium ion batteries could be recharged in a home or office garage. Public charging stations can be set up in parking lots and shopping malls. Stations are currently being installed in Portland, Ore.; Boulder, Colo.; and San Jose, Calif.

"This offers new business opportunities - charging stations at Starbucks or Wal-Mart," said Michael Brylawski, a vehicle efficiency expert at the Rocky Mountain Institute, an environmental policy organization in Snowmass, Colo.

Brylawski acknowledged that it's easy to install a few dozen recharging



stations, but hundreds of thousands eventually will be required. "That's very different than (what) we have now," he said.

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