

# Battery makers can lower costs

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As hybrid and electric vehicles get nearer to production, the focus on lithium-ion batteries is starting to shift from safety to affordability.

During a panel discussion at a plug-in vehicle conference in Detroit, several speakers said dramatic cost cuts are possible once the advanced batteries reach high-volume production.

No concerns were expressed about the safety of the advanced batteries, which in the past have overheated and started fires in consumer electronics.

Johnson Controls-Saft Advanced Battery Systems aims to reduce the cost of a lithium-ion battery pack by 50 per cent, said Michael Andrew, the venture's director of government affairs and external communications for hybrid electric battery systems.

He said JCI-Saft is not just looking at the cost of materials that go into the batteries but the way the cells are manufactured.

He said battery makers can learn from other industries how to produce lithium-ion cells more efficiently.

"We have an opportunity here to revolutionize the way these cells are built," Andrew said.

"We think we can leverage process technology being used in other industries to rapidly bring down the cost."

JCI's goal, he said, is to make a battery pack for a hybrid or an electric car that will cost the consumer the same as a petrol engine over three years.

Nissan's plan to lower costs for the 2012 Leaf electric car involves manufacturing the batteries and assembling the cells into packs at the plant where the car will be built, said Mark Swenson, Nissan North America's vice president of manufacturing engineering and vehicle production engineering.

"We plan to run the plant around the clock to maximize our investment in the production equipment," Swenson said.

The Leaf, he said, will be just one of several electric vehicles Nissan plans to sell in North America.

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Ric Fulop, vice-president of business development for A123 Systems Inc, said he believes the cost of battery packs could come down 9 per cent per year as the industry matures.

Some savings would come from making batteries more powerful, while other costs could be cut by refining the production process and using higher-quality materials.

Ravi Ramanathan, director of global business development for the Dow Chemical Co, said battery costs can also be reduced by making them more powerful and efficient, and by controlling quality during production.

Car manufacturers won't talk about how much the battery packs for hybrids and electric vehicles cost. But some estimates place the cost of the lithium-ion batteries for the Chevrolet Volt at around US\$8000 (\$10,600).

"The cost of batteries is pretty high and they have to come down," said Ramanathan.

He said initial costs may be too high because car manufacturers are over-engineering cars and battery packs to ensure there are no mechanical glitches that could sour consumers on the technology.

Meanwhile, Nissan CEO Carlos Ghosn has confirmed the car manufacturer will expand its line of electric vehicles to the luxury Infiniti brand as early as 2012 and also will create an electric commercial van to sell to governments and fleet customers.

Ghosn revealed the plans today at the Tokyo Motor Show, an event featuring electric-vehicle displays by several manufacturers.

Ghosn said the electric Infiniti will be "a compact luxury car – a stylish, high-performance four-seater with zero emissions."

Ghosn, who has become one of the industry's most bullish electric-vehicle proponents, is signaling that he thinks electrics will proliferate into multiple market segments.

The electric market is currently dominated either by products that are glorified golf carts – in some cases unsuitable for highway driving – or by exotic sports cars from niche car manufacturers such as Fisker Automotive and Tesla Motors.

But Nissan is rapidly mobilizing to mass-produce its electric five-passenger Nissan Leaf starting in late 2010, with hopes for sales as high as 150,000 units a year.

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Ghosn said that the second model will be an electric version of the NV200, a small light commercial van that Nissan is preparing to manufacture in Canton, Mississippi. The third will be the four-passenger Infiniti model.

Andy Palmer, Nissan senior vice-president in charge of zero-emission vehicles, the Infiniti brand and global light commercial vehicles, said the NV200 decision was prompted by requests from governments and large delivery services for an electric delivery vehicle.

Nissan is entering the US light-commercial business. The United States is the only major world market where Nissan is not already selling light commercial vehicles such as the NV200. Palmer suggested the electric vans could be used as taxis or postal delivery vehicles.

Ghosn did not elaborate on whether the officially planned four-seat Infiniti electric model would be a unique platform or derived from the electric platform developed for the Nissan Leaf family car.

For the past few years, Nissan has been engineering separate platforms to keep the Nissan and Infiniti brands distinct.

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