

Strategies

ISE

Hybrid Pioneer Sets Supplier Partnerships, Sees Parallel Drives Broadening Its Market

San Diego's ISE Corp, a 14-year pioneer in electric drive buses, is establishing a strategic partnership with Germany's ZF with an eye to developing new and more economical parallel drives to broaden its overall market.

ISE recently expanded its reach to refuse trucks, supplying series drives with Siemens components to Crane Carrier for testing in New York (*F&F*, March 23; components from Siemens, an ISE partner for ten years, are also being used in eight hydrogen fuel cell buses by Ireland's WrightBus for London and in 20 hydrogen fuel cell buses by New Flyer for next year's Winter Olympics in British Columbia, all with Ballard fuel cells and ISE drives).

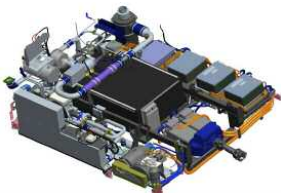
Parallel Drives for Commercial Vehicles

ISE last month publicized an MoU with ultracapacitor specialist Maxwell Technologies (also of San Diego) that's expected to lead to heightened technical and commercial collaboration. ISE said it will source ultracaps for its drives exclusively from Maxwell, while Maxwell will offer "high-voltage and high-performance ultracapacitor modules designed and produced by ISE."

ISE's MoU with ZF outlines the German company's intention "to utilize ISE expertise for integration engineering, sales, subsystem assembly, and service support for ZF hybrid systems and components into the North America commercial vehicle market.

"Respectively," ISE said it "intends to develop and market an ISE branded parallel hybrid drive system for the North America commercial vehicle market" — using ZF hardware.

"ISE is thrilled with the opportunity to partner with ZF, who are without question, the world's most capable provider of driveline products and parallel hybrid drive systems for medium and heavy duty applications," ISE president and CEO Rick Sander



gasoline-fueled New Flyer hybrid, propulsion module for Wrightbus

ISE at a glance

Headquarters: Poway, California (San Diego)

Employees: 136

Products: Series hybrid electric drivetrains for heavy duty vehicles, including gasoline-fueled hybrids; developmental parallel and battery electric drives.

Key Suppliers: Siemens, Maxwell, ZF Friedrichshafen

Key Customers: New Flyer, North American Bus Industries, Thor/EIDorado, WrightBus, Crane Carrier.

ISE was incorporated in 1995 and claims an installed base of approximately 225 hybrid drive vehicles. Venture capital backers include Siemens, NGP, Rockport, NorthArrows, MacQuarie, DTE EV.

Dave Mazaika is chairman of the board.

said in a release. "The synergies of this relationship will help accelerate and expand the world wide adoption of commercial hybrid drive systems," he said.

"We are very excited about this groundbreaking relationship," said Wolfgang Schilha, senior VP for bus driveline technology at ZF Friedrichshafen. ZF employs 63,000 people at 125 plants in 26 countries, and had group sales of \$16.3 billion last year.

'Envy of the Industry'

"This partnership is, without question, the envy of the industry," Sander said.

Parallel drives tend not only to be more economical, explains ISE business development VP Gary Willms, but lend themselves to more packaging options, i.e. more engineering flexibility, on a given vehicle. They are also better for applications involving some over-the-road driving, like commercial delivery vehicles. Perhaps more important, parallel drives, Willms told *F&F* last week, are expected to give ISE access to commercial customers who tend to have less federal support for their purchases than ISE's traditional transit vehicle market.

Parallel drives also, Willms said, lend themselves better to OEMs who are increasingly doing their own hybrid vehicle integration.

ISE notes that it's been using Maxwell's BoostCap brand ultracapacitors since 2002.

"ISE's pioneering energy storage system designs incorporating ultracapacitors gave our BoostCap products their first production-level opportunity in the transit bus market," said Maxwell president and CEO David Schramm. Now, he says, "Rising fuel prices and new regulations aimed at reducing CO2 emissions are driving demand that is bringing hybrid drive systems squarely into the transportation mainstream."

As for batteries, often better-suited than ultracaps because of vehicle duty cycle, ISE remains open. Past suppliers have included Cobasys for nickel metal hydride batteries and MESA-DEA for Zebra brand sodium nickel chloride.

Now ISE is adapting to the age of lithium ion, for which it currently has multiple suppliers. Will ISE lock in just one? "At some point in time," says Willms, "you have to make a decision."

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