

## Executive Viewpoints:

Challenges and trends  
for the next 20 years

### Annual Product Guide

Powertrain & Energy

Electronics

Hydraulics

Materials & Manufacturing

Testing & Simulation

Body & Chassis

Interiors



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**Annual series of opinion pieces penned by executives on the future of the off-highway industry.**

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Oerlikon Fairlikon has debuted a complete hybrid-electric drivetrain technology system with energy recovery from engine to wheel, enabling an up to 30% fuel-economy improvement. The concept technology is designed for a wheel loader, but consists of modular components that can be configured for a broad range of applications.

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*Off-Highway Engineering*®, May 8, 2014, Volume 22, Number 3. *Off-Highway Engineering* (ISSN 1528-9702) is published six times a year by SAE International®, 400 Commonwealth Dr., Warrendale, PA 15096-0001 and printed in Mechanicsburg, PA. Copyright© 2014 SAE International. Annual print subscription for SAE International members: first subscription, \$20 included in dues; additional single copies, \$30 each North America, \$35 each overseas. Prices for nonmember subscriptions are \$100 North America, \$150 overseas. Periodical postage paid at Warrendale, PA, and additional mailing offices. POSTMASTER: Please return form 3579 to *Off-Highway Engineering*, 400 Commonwealth Dr., Warrendale, PA 15096-0001. SAE International is not responsible for the accuracy of information in the editorial, articles, and advertising sections of this publication. Readers should independently evaluate the accuracy of any statement in the editorial, articles, and advertising sections of this publication that are important to him/her and rely on his/her independent evaluation. For permission to reproduce or use content in other media, contact [copyright@sae.org](mailto:copyright@sae.org). To purchase reprints, contact [advertising@sae.org](mailto:advertising@sae.org). Claims for missing issues of the magazine must be submitted within a six-month time frame of the claimed issue's publication date. The *Off-Highway Engineering* title is registered in the U.S. Patent and Trademark Office. Full issues and feature articles are included in the SAE Digital Library. For additional information, free demos are available at [www.sae.digitallibrary.org](http://www.sae.digitallibrary.org). (ISSN 1528-9702 print) (ISSN 1939-6686 digital)

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ANALYSIS

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## HEV drivetrain system

**Oerlikon Fairfield** offers a complete hybrid-electric drivetrain technology system with energy recovery from engine to wheel. Components of the system include an engine-driven generator to produce electrical power; a 1.2 MJ ultracapacitor bank (shown) that stores energy developed by the generator or recovered



through braking; a software control unit; dual inverters integrated into the front and rear axles for simplified wiring packages; and four high-power-density traction motor drives at each wheel end that allow for higher motor speeds and improved performance over various ground speed ranges. The system offers up to 30% fuel-economy improvement; other benefits include electrically driven auxiliary drives and the ability to add engine stop-start technology.