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Cat® Dynamic Energy Transfer system prototype under development at Caterpillar Tucson Proving Ground

Caterpillar introduces groundbreaking dynamic energy transfer solution for battery and diesel-electric mining equipment

IRVING, Texas, Sept. 17, 2024 – Today, Caterpillar Inc. (NYSE: CAT) unveiled an innovative OEM-designed solution to help solve one of the most complex aspects of the mining industry’s energy transition – energy management.

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Cat[®] Dynamic Energy Transfer (DET) is a fully Caterpillar-developed system that can transfer energy to both diesel-electric and battery-electric large mining trucks while they are working around a mine site. It can also charge a machine's batteries while operating with increased speed on grade, improving operational efficiency and machine uptime. The innovative Cat DET system provides the industry with options to support both near-term and long-term sustainability strategies.



“We believe Cat DET provides a technological leap for the mining industry. Our team of innovators designed this system to provide immediate benefit to miners who want to lower their operating costs and greenhouse gas emissions today while also creating flexibility for the future,” said Denise Johnson, Caterpillar’s Resource Industries group president. “We know customers need choices to fit their unique site objectives. We are proud to deliver an innovative, integrated solution that can support their needs of today and those of the future.”

Enabling Enhanced Flexibility Through Innovative Design

Cat DET is comprised of a series of integrated elements, including a power module that converts energy from a mine site’s power source, an electrified rail system to transmit the energy and a machine system to transfer the energy to the truck’s powertrain.

The rail system is a highly deployable, mobile solution that can be customized to customers’ specific site layouts, including high-speed and curved haul roads, enabling higher productivity. The connecting arm can be installed on either side of a truck and on multiple truck models, providing options to fit customers’ specific operations. It can also be used on mature or developing sites, and it can be easily moved or expanded to allow maximum mine site coverage.

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Cat DET will integrate with the Cat MineStar™ Command for hauling solution, merging autonomy and electrification technologies to provide a holistic site solution.

Caterpillar Senior Vice President Marc Cameron explained, “We believe mine sites will benefit from enhanced efficiency with the integration of electrification and automation. When combined, these technologies will help miners achieve production targets while simultaneously managing energy demands.”

The Cat DET system will be on display as part of Caterpillar’s MINExpo 2024 exhibit, located in Central Hall booth #6333 at the Las Vegas Convention Center, Sept. 24-26.



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About Caterpillar

With 2023 sales and revenues of \$67.1 billion, Caterpillar Inc. is the world’s leading manufacturer of construction and mining equipment, off-highway diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. For nearly 100 years, we’ve been helping customers build a better, more sustainable world and are committed and contributing to a reduced-carbon future. Our innovative products and services, backed by our global dealer network, provide exceptional value that helps customers succeed. Caterpillar does business on every continent, principally operating through three primary segments – Construction Industries, Resource Industries and Energy & Transportation – and providing financing and related services

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through our Financial Products segment. Visit us at caterpillar.com or join the conversation on our social media channels at caterpillar.com/en/news/social-media.html.