



BEST START

Partner Company Profile

EXERGI
PREDICTIVE

Energy logistics present one of the greatest vulnerabilities in modern warfare. For frontline military units, every gallon of fuel comes at an extraordinary cost—not just in dollars, but in human risk. In combat zones like Afghanistan, the Army discovered that delivering just one gallon of fuel to forward positions required transporting seven gallons due to security risks and the fuel consumed by protection convoys themselves. These challenges drove costs to \$600 per gallon in high-threat environments, creating an urgent need to reduce dependence on vulnerable supply lines while maintaining operational readiness. Exergi Predictive addresses this challenge with its Energy Prediction for Intelligent Command and Control (EPICC) software, an AI-powered system that optimizes energy use for military vehicles and microgrids—cutting waste, improving efficiency, and keeping warfighters focused on the mission.

Precision Energy Prediction for Tactical Advantage

Originally developed in 2022 to control robotic combat vehicles, Exergi's EPICC software has evolved into a versatile tool for predicting and managing energy demands in real time. Under the BEST START program, Exergi is adapting this technology for tactical microgrids, creating EPICC Microgrid. This advanced system forecasts charging requirements for mobile command posts and integrates seamlessly with microgrids to balance energy supply and demand, ensuring mission success while minimizing generator use.

What sets EPICC apart is its ability to deliver precise energy predictions for off-road environments, a capability unmatched by existing solutions, which are limited to on-road scenarios. By analyzing route data, weather conditions, and surface terrain, EPICC generates highly accurate mission energy profiles. These predictions enable microgrids to anticipate charging needs, allocate resources efficiently, and even leverage vehicle batteries for grid support when idle.



Lightening the Load for the Warfighter

These predictions enable reduced fuel consumption, fewer supply convoys, and more reliable energy for warfighters in the field. By accurately forecasting fuel and power needs, the software optimizes microgrid performance so that units have the energy they need, when they need it, and without unnecessary waste. This not only enhances operational readiness but also reduces the risks associated with fuel logistics in hostile environments.

The impact is measurable: Exergi's prediction technology has already demonstrated a 20% reduction in fuel use for on-road vehicles by prioritizing battery energy over range-extender engines. In off-road military applications, EPICC has achieved a remarkable 95% prediction accuracy across diverse terrains and powertrain types. Exergi supports key FY26 investment priorities by advancing OE-informed planning and decision-

making through AI-powered energy modeling, simulation, and microgrid technologies that integrate seamlessly with CJADC2 environments. Our solutions also contribute to OE and installation energy convergence by enhancing energy assurance, situational awareness, and resilience—directly strengthening homeland defense operations.

From Combat Vehicles to Commercial Applications

While EPICC was designed for military challenges, its potential extends far beyond the battlefield. The same technology can be applied to commercial "vehicle-to-X" systems, such as vehicle-to-home energy sharing, where predicting energy demands can mitigate peak load charges and stabilize local grids. Exergi has

already proven the adaptability of its software, deploying it on platforms like the M992A3 ammo transport vehicle and off-road UTVs with consistent accuracy.

Looking ahead, Exergi plans to expand EPICC to all military and commercial off-road vehicles, add Android Auto and Apple CarPlay

support, and explore machine learning for stationary energy systems.

A Team Built for Innovation

Exergi Predictive was founded in 2019 by a team of experts in vehicle engineering, data science, and software development. Headquartered in Minneapolis-St. Paul, the company has quickly established itself as a leader in energy prediction, earning multiple SBIR awards from the Department of Energy, ARPA-E, and the Department

of Defense. Their mission is clear: equip the military with AI-driven tools to maximize energy visibility, reduce logistical vulnerabilities, and extend operational reach in fuel-constrained environments. Long-term, Exergi aims to refine EPICC into a universal energy management solution for both military and civilian ground vehicles.

About BEST START

BEST START provides the crucial support businesses need to bring their visionary technologies to life. Whether refining smart grid technologies, enhancing green energy applications, or creating efficient solutions for power generation, BEST START partners with Minnesota companies to move technology forward. BEST START is a collaboration of three organizations—DEVCOM Army Research Laboratory, the University of St. Thomas in Minnesota, and ETC, a nonprofit defense solutions provider.

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