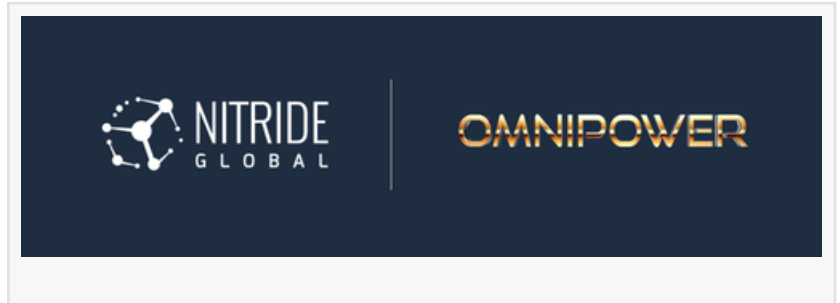


# Nitride Global & OmniPower Sign MOU for HVDC-based grid development via next-gen semiconductor & advanced packaging tech

*Partnership unites UWBG semiconductor & advanced packaging materials for HVDC grid technology to unlock massive power capacity without new generation capacity*



WICHITA, KS, UNITED STATES, June 22, 2026 /EINPresswire.com/ -- [Nitride](#)

[Global, Inc.](#) ("NGI") and [OmniPower, Inc.](#) ("OMNIPOWER") today announced the signing of a Memorandum of Understanding (MOU) establishing a strategic cooperation framework for the commercialization and technology development of materials and HVDC solutions. The agreement positions both companies at the forefront of a national effort to modernize America's power grid, an infrastructure challenge identified by the U.S. Dept of Energy as the defining bottleneck of the AI era.

## A Grid at Its Breaking Point

The United States faces an unprecedented energy infrastructure crisis. Electricity demand is projected to reach 4,239 billion kWh in 2026, surpassing all prior records, driven largely by the explosive growth of AI-powered data centers, electric vehicle adoption, and the onshoring of advanced manufacturing.

The consequences of inaction are stark. The Dept. of Energy has warned that power blackouts could increase 100-fold, reaching 800 hours annually by 2030. Meanwhile, the European Union and China have deployed 30 and 60 long-distance HVDC transmission lines, compared to just five in the United States.

## A Complementary Alliance: From Materials to Grid

Under the MOU, OMNIPOWER and NGI will collaborate on commercialization and technology development to bring NGI's advanced materials to market within OMNIPOWER's HVDC deployment ecosystem. OMNIPOWER will lead commercialization, leveraging its network of utilities, data center operators, and government stakeholders.

Nitride Global is one of only four companies in the world with expertise in aluminum nitride

(AlN), an ultra-wide bandgap semiconductor material that the White House, Department of Commerce, and Department of Energy have designated as critical to national interest. NGI has also developed a revolutionary advanced packaging and thermal management technology based on a proprietary composition of AlON (aluminum oxynitride) that enables a new generation of high-voltage modules while reducing thermal resistance by up to 50% compared to current industry-standard substrates and enabling up to a 50% reduction in semiconductor die required per power module.

OMNIPOWER is leading HVDC America, an initiative to execute the first nationally coordinated HVDC overhaul of the U.S. power grid. Backed by Infrastructure Masons, a coalition of over 6,000 data center builders and \$1.5 trillion in global infrastructure, OMNIPOWER's Grid-to-Chip (G2C) Partnership model unites the Department of Energy, private investors, energy companies, and AI industry commitments to finance and deploy HVDC corridor upgrades nationwide.

#### Transformative Impact: Solving the Grid Crisis at the Materials Level

Today's HVDC converter stations rely on silicon-based submodules operating at approximately 3 kV per unit, requiring thousands of submodules, massive physical footprints of 40 acres or more, and billions of dollars per corridor.

The NGI-OMNIPOWER collaboration targets a breakthrough: a 20 kV-class AlN/AlON HVDC power cell operating at 12.5 kV nominal, roughly four times the voltage of current state-of-the-art submodules. This represents a potential 90% reduction in submodules required per converter arm, compressing footprints and accelerating deployment.

Beyond HVDC, the same innovation extends across the broader power electronics landscape. Studies by Oak Ridge National Laboratory have shown that advanced wide bandgap semiconductors can reduce data center power usage by over 17%. Combined with AlN's superior efficiency, up to 65% greater than other advanced semiconductors, and AlON's thermal performance improvements, the aggregate savings potential reaches up to 62 TWh annually, equivalent to the electricity consumption of five million American homes and the avoidance of 32 million tons of CO<sub>2</sub> emissions, without building a single new power plant.

#### Leadership Perspectives

"Modernizing America's grid is a race we cannot lose. While the EU and China have deployed dozens of HVDC corridors, the U.S. has only five. NGI's AlN and AlON technologies represent exactly the kind of materials breakthrough that can make HVDC not just viable at national scale, but economically compelling. This MOU is a critical step toward our Grid-to-Chip vision—building the enabling technology layer from the semiconductor up to the transmission line."

— Henry Lee, Chief Executive Officer, OmniPower, Inc.

"The convergence of AI, electrification, and advanced manufacturing is placing extraordinary demands on a grid that was designed for a different era. This partnership with OMNIPOWER is about ensuring that NGI's semiconductor and advanced packaging technologies reach the

market at the scale and speed this moment demands. Together, we can fundamentally change the equation—delivering dramatically more power through existing infrastructure by solving the problem at the materials level."

— Mahyar Khosravi, P.Eng., Chief Executive Officer, Nitride Global, Inc.

The partnership also addresses a critical national security dimension. The alliance aims to reduce American dependence on foreign-sourced semiconductor materials at a time when supply chain security is paramount.

About Nitride Global, Inc.

Nitride Global, Inc., headquartered in Wichita, Kansas, is an advanced materials developer focused on delivering transformative dual use innovation while improving US national security via a fully domestic supply chain. The company's solutions include ultra-wide bandgap (Aluminum Nitride, AlN) and a revolutionary advanced packaging and thermal management technology (Aluminum Oxynitride, AlON) for power electronics, 3D packaging and photonics. One of only four companies worldwide with AlN crystal growth expertise, Nitride holds an extensive IP portfolio and works with partners & customers across automotive, defense, aerospace, datacenter, and quantum computing markets.

About OmniPower, Inc.

OmniPower, Inc. develops and deploys high-voltage direct current solutions and leads HVDC America, a national initiative to execute the first coordinated HVDC overhaul of the U.S. power grid. Through its Grid-to-Chip (G2C) Partnership, OMNIPOWER aligns the Department of Energy, utilities, data center operators, and private capital to finance and build HVDC transmission corridors. OMNIPOWER's leadership includes Chairman Terry Boston, the former CEO of PJM, the largest utility grid operator in the United States, and a recipient of the Platts Global Energy Lifetime Achievement Award and IEEE Leadership in Power Award. The initiative is endorsed by Infrastructure Masons, a coalition representing over 6,000 data center professionals and \$1.5 trillion in global infrastructure.

Forward-Looking Statements

This press release contains forward-looking statements regarding the anticipated benefits, scope, and timeline of the partnership between Nitride Global, Inc. and OmniPower, Inc. These statements involve risks and uncertainties, and actual results may differ materially from those expressed or implied. Neither company undertakes any obligation to update these statements.

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