



## **Enphase Energy Successfully Demonstrates IQ Solid-State Transformer Technology Converting 13.8 kV AC to 800 VDC**

FREMONT, Calif., Oct. 27, 2026 (GLOBE NEWSWIRE) -- [Enphase Energy, Inc.](#) (NASDAQ: ENPH), a global energy technology company, today announced a major milestone in the development of its IQ® Solid-State Transformer (IQ SST), successfully demonstrating 13.8 kV AC to 800 VDC conversion at its research and development lab in Austin, Texas. The test system consisted of 132 power modules, with 44 connected in series on each of three phases, operating together as a single system. The system maintained a stable 800 VDC output through load steps simulating the fast-changing demands of AI compute racks.

"Over the past 20 years, we've built and shipped nearly 90 million microinverters, gaining extensive experience in designing and manufacturing reliable power electronics," said Raghu Belur, co-founder and chief product officer at Enphase Energy. "IQ SST brings that same approach to AI data centers, moving us closer to delivering power more efficiently to AI compute racks."

By converting medium-voltage AC directly to 800 VDC, IQ SST is designed to eliminate multiple conversion stages in conventional data center power architectures, reducing conversion losses and making more power available for AI compute.

In the demonstration, each power module handled a few hundred volts, so no single module saw the full 13.8 kV. Enphase's distributed controls maintained balanced voltage sharing across all 132 modules and coordinated their response to rapid load changes, keeping the output within specification. Redundancy is also built into the architecture. IQ SST is designed to continue operating if an individual power module fails.

"The system performed exactly as designed," said Hans van Antwerpen, chief technology officer at Enphase Energy. "All 132 modules shared the voltage evenly, and the 800 V output held steady through every load step. The architecture scales by adding power modules in series, so 13.8 kV gives us a clear path to 34.5 kV."

Each 5.5 kW-rated power module combines gallium nitride (GaN) power switching, Enphase's fifth-generation Kestrel ASIC, and a proprietary high-frequency transformer developed by Enphase's in-house magnetics team. The modules use similar components and manufacturing processes to those used in Enphase IQ Microinverters, and the first IQ SST power modules [are already being built](#) at Enphase's manufacturing facility in Arlington, Texas.

Building on this achievement, Enphase plans to extend the demonstration to 34.5 kV in the coming weeks, leveraging the scalability of its modular architecture. We expect to demonstrate full-system IQ SST racks operating at megawatt scale and rated power before the end of 2026, with customer pilots planned for 2027. To learn more about IQ SST, visit the Enphase [website](#).

### **About Enphase Energy, Inc.**

Enphase Energy is a global energy technology company advancing intelligent power systems for homes, businesses, and next-generation AI data centers. The company designs semiconductor-based energy technologies spanning solar, batteries, EV charging, energy management, and virtual power plants, and is developing solid-state transformer technology to address the rapidly growing power demands of AI data centers. Based in Fremont, California, Enphase is the world's leading supplier of microinverter-based solar and battery systems. The company revolutionized the solar industry with its microinverter technology and has shipped approximately 89.4 million microinverters, with approximately 5.3 million Enphase-based systems deployed in more than 165 countries. Enphase products enable people to harness the sun to make, use, save, and sell their own power, all controlled through the Enphase App. For more information, visit <https://enphase.com/>.

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## Forward-Looking Statements

This press release contains forward-looking statements, including statements related to the expected capabilities and performance of Enphase Energy's IQ SST, including safety, quality, reliability, scalability, efficiency, redundancy, and medium-voltage power conversion capabilities; the expected benefits of IQ SST, including reduced power conversion losses, increased power available for AI compute, and support for AI data center applications; the expected performance and benefits of Enphase's distributed architecture, gallium nitride (GaN) technology, Kestrel ASIC, and power modules; the manufacture of IQ SST power modules at Enphase's U.S. manufacturing facilities; and the timing of future demonstrations, product development milestones, and customer pilot programs. These forward-looking statements are based on Enphase Energy's current expectations and inherently involve significant risks and uncertainties. Actual results and the timing of events could differ materially from those contemplated by these forward-looking statements as a result of such risks and uncertainties. Such risks include, but are not limited to, technological development and validation risks; market demand for AI data center infrastructure and related products; competitive developments; the ability to achieve anticipated performance, reliability, scalability, and efficiency objectives; manufacturing and supply chain availability and costs; the successful completion of future testing, demonstrations, and pilot programs; changes in regulatory or compliance requirements; and other factors discussed in Enphase Energy's filings with the Securities and Exchange Commission, including those risks described in more detail in Enphase Energy's most recently filed Annual Report on Form 10-K, Quarterly Report on Form 10-Q, and other filings made from time to time with the Securities and Exchange Commission. Enphase Energy undertakes no duty or obligation to update any forward-looking statements contained in this release as a result of new information, future events or changes in its expectations, except as required by law.

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