

## Power Electronics

# Advanced Power Electronics: Enabling the Future of Green H2

The success of green hydrogen depends on more than just electrolysis technology—it hinges on the integration of advanced power electronics. As hydrogen production scales up to meet global climate targets, electrolysis plants will impose massive new electrical loads on already strained power grids.

Power electronics play a vital role in overcoming these challenges. They enable electrolyzer systems to actively support grid stability, offering services such as voltage regulation, reactive power compensation, and fault ride-through. These capabilities are essential as more high-capacity plants connect to the grid.

With hydrogen demand projected to grow from 94 Mt today to over 430 Mt by 2050, the energy system must expand rapidly—requiring thousands of GW of renewables and a new generation of smart, grid-friendly infrastructure. Advanced power electronics will be key to ensuring both stable grids and efficient hydrogen production in this transformation.

## At a glance

- **Green hydrogen growth will dramatically increase electrolysis-related loads on power grids**
- **Grid connection challenges: harmonic distortion, reactive power needs, and frequency/voltage stability**
- **Modern power electronics enable grid support features like reactive power control and fault ride-through**
- **Power electronics selection is critical for scalable, stable, and efficient hydrogen production infrastructure**

# krecotec – Expertise That Drives Renewable Power Forward

Founded in 2022, krecotec gives customers direct access to over 25 years of hands-on experience in converter technology. Our team of engineers has been active in the wind industry since 1991, bringing deep knowledge in engineering, power electronics, grid integration and service support.

We deliver more than just products—we provide tailored solutions, engineering services, remote support, technical training, and spare parts to keep your systems running reliably and efficiently.

**krecotec – Your partner for expert-driven power electrical solutions.**

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