



1 PRESS RELEASE (long text)

SAFEPOWER: Powering a Greener, Smarter, and More Reliable Future

The SAFEPOWER project is redefining energy systems by developing next-generation Medium-Voltage Direct Current (MVDC) converters designed to be compact, sustainable, secure, and competitive. These advanced technologies aim to support a cleaner and more energy-efficient future, benefiting both the environment and society.

SAFEPOWER combines cutting-edge innovations in digital and power conversion technologies, using advanced Silicon Carbide (SiC) power semiconductor devices and breakthrough Control and Health Management (C&HM) techniques. These innovations aim to enhance the performance of MVDC converters, improving efficiency, reliability, and power density while reducing environmental and economic costs.

Key Innovations

- **Advanced Materials:** The project explores SiC substrates and β -Ga₂O₃, a promising Ultra-Wide Band Gap (UWBG) material, to create cost-effective, highly efficient power devices.
- **Next-Generation Power Components:** SAFEPOWER is designing and manufacturing rugged, efficient components like power MOSFETs, free-wheeling diodes, and solid-state DC breakers to meet the growing demands of modern energy systems.
- **Sustainable Solutions:** The project emphasizes environmentally friendly and cost-effective designs, reducing the overall impact of power systems.
- **Enhanced Reliability:** By integrating advanced C&HM techniques, SAFEPOWER ensures robust performance, predictive diagnostics, and extended lifespan of energy systems, also using artificial intelligence solutions.

Why SAFEPOWER Matters

The innovations brought by SAFEPOWER will:

- Enable greater adoption of renewable energy sources, especially solar power.
- Make energy systems more reliable and affordable.



- Support Europe's transition to a climate-neutral, circular economy.

"SAFEPOWER is a vital step toward creating a future where energy systems are not only more efficient but also more aligned with societal needs for sustainability and resilience," said Xavier Perpinyà scientific leader for SAFEPOWER. "Our project reflects Europe's commitment to leading the development of green technologies."

Looking Ahead

SAFEPOWER aims to position MVDC converters as the preferred choice for sustainable, secure, and competitive energy solutions. By doing so, it will contribute to Europe's strategic autonomy in energy technology and strengthen its leadership in digital and enabling technologies.

Project info:

The project is funded by Horizon Europe under the Climate, Energy, and Mobility call, with a total funding amount of €4,332,803.75. It involves ten partners from five countries: Spain, the United Kingdom, France, Latvia, and Italy. These partners include research organisations, leading companies, and top-tier universities.

The project partners are:

1. The Institute of Microelectronics of Barcelona (IMB-CNM-CSIC) (ES)
2. Power Electronics Espana SI (ES)
3. Swansea University (UK)
4. University Of Warwick (UK)
5. Clas-Sic Wafer Fab Limited (UK)
6. Universite De Technologie De Tarbes (FR)
7. Centre National De La Recherche Scientifique Cnrs (FR)
8. Universite De Versailles Saint-Quentin-En-Yvelines. (FR)
9. Latvijas Universitates Cietvielu Fizikas Instituts (LV)
10. Politecnico Di Milano (IT)

More info :

WWW: <https://www.safepowerproject.eu/> (under construction)

LinkedIn: **SAFEPOWER EU Project**

2 PRESS NOTE (short text)

The SAFEPOWER project is revolutionizing energy systems with the development of next-generation Medium-Voltage Direct Current (MVDC) converters. These compact, sustainable, and secure solutions aim to enhance efficiency, reliability, and power density while reducing environmental impact and costs.

By leveraging advanced Silicon Carbide (SiC) devices, β -Ga₂O₃ as an Ultra-Wide Band Gap (UWBG) material, and cutting-edge Control and Health Management (C&HM) techniques, SAFEPOWER is setting



new benchmarks in energy technology. The project's focus on cost-effective and environmentally friendly designs paves the way for greater renewable energy adoption, particularly solar power, and aligns with Europe's transition to a climate-neutral, circular economy.

SAFEPOWER's innovations will make energy systems more efficient, reliable, and affordable, supporting societal needs while fostering Europe's leadership in green and digital technologies.

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