

PRESS RELEASE

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Revolutionizing Energy Distribution: Medium Voltage DC Grids Driving Megawatt-Scale Applications

The DC-POWER Project Launches

Brace yourselves for a monumental leap into the future of energy distribution! The DC-POWER project, funded by the European Union, has officially kick-started in January 2024.

Coordinated by CEA (INES), this groundbreaking project will show the marvels of medium voltage direct current (MVDC) grids operating at bipolar ± 1.5 kV, ushering in a new era of sustainable power distribution with at least a jaw-dropping 50% reduction in copper conductor usage.

Background

For over a century, AC grids have been the backbone of electricity distribution. However, it is starting to show its shortcomings due to a rise in local generation with renewable energy sources and the essentially direct current (DC) nature of many modern electric loads.

Modern grids need to deal with two-way energy flows, local intermittent generation from renewables and local energy storage in stationary batteries. The DC-POWER project is ready to address these challenges with medium voltage distribution microgrids using DC instead of AC to redefine the energy distribution.

The visionary DC-POWER Concept

While there have been commendable initiatives in low-voltage DC distribution grids, DC-POWER is expanding their concepts into the medium voltage range. The project introduces the revolutionary D³Bus (Dual DC Distribution Bus), a bipolar DC bus operating at ± 1.5 kV. This technological marvel is set a significant transformation, reducing distribution energy losses by over 90% slashing downtime, equipment costs, and space requirements, all while increasing sustainability.

Pilot Projects: From Concept to Reality

DC-POWER demonstrates, tests and validates the D³ Bus concept in 2 operational pilots:

- An industrial-scale hydrogen electrolyser system with a total power of 2MW.
- A novel data centre with up to 500 kW installed IT power.

Both pilots are graced with sizeable solar PV arrays (200 kW) and the data centre also includes a directly coupled storage solution with UPS functionality.



DC-POWER has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101135828.

DC-POWER develops the complete system concept as well as several DC-DC converters, an AC active frontend, system protection components, and a power/energy management system.

Led by CEA (INES), our the DC-POWER consortium comprises 10 partners from 6 countries: France, Germany, Italy, Slovenia, Switzerland and Spain. The consortium includes universities, private and industrial partners, ensuring a well-balanced and diverse consortium.

We are excited to kick-start the project and share our progress and results with you as we work towards implementing MVDC distribution in the market!

Follow us on [LinkedIn](#), [X](#) to stay tuned!

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