German University of Applied Sciences is looking for partners to build up a consortium and apply to the HORIZON-CL5-2026-03-D3-19 call: Affordable and sustainable primary equipment for Future-Ready multi-terminal HVDC

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Germany**	**RDRDE20260122016**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**22 Jan 2026** **22 Jan 2027**	**23 Jan 2026**

General Information

Short summary

The Power electronics research group in a German university of applied sciences needs companies and partners to form a consortium for the HORIZON-CL5-2026-03-D3-19. The project will address the component size, cost, interoperability and environmental impact, including SF_6 -free solutions (solid-state circuit breakers).

Full description

About the project idea under HORIZON-CL5-2026-03-D3-19:
This project focuses on developing more affordable, reliable and environmentally friendly High Voltage Direct Current (HVDC) equipment to support Europe's energy transition and the growing demand from electric mobility. Research will address component size, cost, interoperability and environmental impact, including SF_6 -free solutions (solid-state circuit breakers). New HVDC components for multi-terminal grids will be developed, tested and validated in representative or operational environments, supported by techno-economic assessments and contributions to standardisation.

The power electronics group provides expertise in the design and realization of power electronic systems for high-power mobility and energy applications. Its competencies cover the full spectrum of power conversion, including AC/DC, DC/DC, and DC/AC systems, with a focus on high efficiency, high power density and reliable operation under demanding conditions.
Core strengths include the development of traction inverters for electric drive systems in road and rail applications, addressing requirements such as dynamic load behaviour. Advanced modulation and control strategies are applied to optimize efficiency and system robustness.

A further competence area is high-power charging and energy conversion infrastructure. The group develops scalable converter architectures for fast and ultra-fast charging systems, including high-power applications up to the megawatt range. This includes bidirectional charging concepts, system efficiency optimization and the integration of local energy storage to manage grid loads.

Methodological expertise spans model-based system design, control implementation, hardware prototyping and experimental validation. The group conducts efficiency, thermal, and fault-related testing under realistic operating conditions with considerations for EMC compatibility, enabling reliable assessment of converter performance.

Advantages and innovations

Develops affordable, reliable and environmentally sustainable equipment for HVDC systems, including solid-state and hybrid circuit breakers, power electronic converters and modular protection equipment. These technologies support a growing direct current industry in Europe and enable both local direct current microgrids and larger interconnected grid regions. Impacts include improved grid stability, more efficient renewable electricity transmission, reduced environmental footprint and greater flexibility to support E-mobility, industry and energy storage, strengthening EE's energy security and competitiveness.

Technical specification or expertise sought

Partners should show expertise in:
- High-voltage direct current system integration at component and substation level, preferably able to provide or assist with grid use cases.
- Software development for HVDC component integration.
- Grid codes, interoperability and environmental regulations for high-voltage direct current systems, digital protection, monitoring and control of high-voltage direct current systems.
- Feasibility study and business model for affordable, sustainable high-voltage direct current equipment and infrastructure.

Type and size of partners are not limited for the role mentioned (SME <=10 / SME 11-49 / SME 50-249 / Big company / R&D Institution / University / Other)

Stage of development

Lab tested

Sustainable Development goals

- **Goal 7: Affordable and Clean Energy**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 11: Sustainable Cities and Communities**

IPR Status

No IPR applied

IPR Notes

Partner Sought

Expected role of the partner

The roles of the partner(s) are:
- To provide support in understanding the market and/or current technology need in their product portfolio.
- Joint design and execution of testing rig/facility for HVDC systems.
- Create a digital-ready framework for the interoperability of HVDC component/system, ready for grid codes of selected countries specifically and of Europe in general.
- And more to cover the scope and expectation of the call

These roles can be adapted during the preparation of the proposal

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **R&D Institution**
- **SME 50 - 249**
- **University**
- **Big company**
- **SME 11-49**
- **SME <=10**

Call Details

Framework program

Horizon Europe

Call title and identifier

HORIZON-CL5-2026-03-D3-19: Affordable and sustainable primary equipment for Future-Ready multi-terminal HVDC Systems

Submission and evaluation scheme

one stage IA Lump Sum

Anticipated project budget

tbc

Coordinator required

No

Deadline for EoI

20 Feb 2026

Deadline of the call

31 Mar 2026

Project duration in weeks

Web link to the call

156

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/HORIZON-CL5-2026-03-D3-19?order=DESC&pageNumber=1&pageSize=50&sortBy=relevance&keywords=HORIZON-CL5-2026-03-D3-19&isExactMatch=true&status=31094501,31094502,3

Project title and acronym

tbd

Dissemination

Technology keywords

- **04001006 - Transport and storage of hydrogen**
- **04002013 - Smart grids**
- **04002012 - Other energy related machinery**
- **04001005 - Transport and storage of gas and liquid fuels**
- **04007001 - Energy management**

Market keywords

- **06010003 - Energy for Industry**
- **06009 - Energy Distribution**
- **06010002 - Energy for the community/public sector**

Targeted countries

- **World**

Sector groups involved