

Workshops

The European research projects

ELITE and GridForm



Dear industry partners and stakeholders,

Be part of shaping the future of electrical energy transmission and calibration services. Join our exclusive two-day workshop to engage directly with the latest results from the European research projects ELITE and GridForm.

Discover innovative measurement technologies through live demonstrations, hands-on laboratory tours, and practical showcases. Take advantage of interactive discussions to exchange insights, address current industry challenges, and explore collaboration opportunities with leading experts.

Participation is free of charge.

Secure your place today and benefit from direct exchange with key players in the field.

📍 PTB Braunschweig, Germany

📅 28–29 October 2026

Save the date!

Register via the project websites (see QR code below) to ensure your participation



<https://www.ptb.de/epm2024/elite/home/industry-meets-research-elite-gridform-workshop>



EPM 24GRD05 ELITE:

Metrological infrastructure for traceable electrical insulation testing for a reliable electricity grid

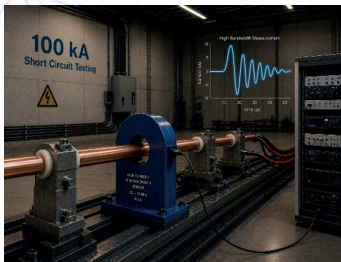
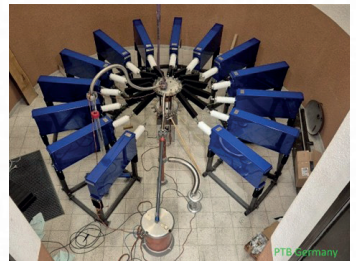
The overall objective is to develop metrological infrastructure for traceable measurement and characterisation of testing equipment for electrical insulation and components. The specific objectives of the project are:

- Development of validated techniques and algorithms for the evaluation of very fast high voltage impulses for steep voltage testing.
- Development of reference standards and calibration capabilities at NMIs for the calibration of measuring systems for steep voltages.
- Investigation of the influence of the steep voltage rise time and the high frequent disturbances on the insulation material properties (e.g. aging).



- Develop of VFT-divider-based measurement systems and associated calibration services for traceable insulator puncture testing using very fast transient (VFT) high voltages.
- Drafting a best practise guide on calibration and test setups for puncture testing based on the outcomes of a comparison campaign.

- Develop of traceable calibration facilities for impulse current tests, especially with high energetic impulse currents that are already mandatory for testing listed in IEC 62475 (e.g. 10/350 μ s up to 200 kA) at the NMIs.
- Development of a smart specialisation strategy for sharing the future capabilities in terms of the current shapes and amplitudes within the European NMIs.



- Develop of calibration facilities and reference standards for time-domain and frequency characterisation of high current, high bandwidth sensors used in e.g. short circuit tests that conform with IEC 62475 Annex C and IEC 60947 requirements (suitable for e.g. switching and protection equipment evaluation).
- Establishment of calibration facilities and reference standards for the time- and frequency-domain characterisation of high-current, high-bandwidth sensors, as used, for example, in short-circuit testing in accordance with IEC 62475 Annex C and IEC 60947 requirements (relevant for switching and protection equipment evaluation).
- Preparation of a best-practice guide for determining the characteristics of high-current, high-bandwidth sensors, covering phenomena such as skin effect, variations in inductance and resistance, pre-discharge behaviour, arcing, and related mechanisms.

EPM 24GRD08 GridForm:

Metrology for efficient grid-forming converters to stabilize future power grids

The overall project aim is to improve stability and inertia of electricity grids with significant renewable generation by development of the metrological infrastructure for traceable testing and evaluation of Grid-forming (GFM) converters and their efficiency. The specific objectives are:

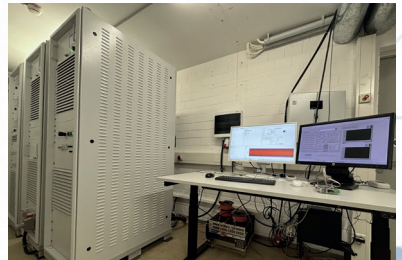


Lab Testbeds:

To develop testbeds for traceable testing and performance evaluation of grid-forming power converters up to a power level of 30 kW, capable of emulating various grid conditions. The testbed will include power sink and source capabilities to test the grid-forming converters and furthermore will have measurement capabilities to assess the power-voltage/frequency response of the converter as it operates to support the grid.

Test Methods:

To develop laboratory methodologies exploiting the testbeds to assess the response of grid-forming converters as they operate to i) deliver frequency response (inertia) support; ii) deliver voltage support; and iii) support power quality. In order to perform a highly dynamic analysis of the behaviour of grid-forming converters, various grid events must be simulated. By analysing the characteristics of grid-forming converters and their impact on the grid, recommendations can be made for optimising the control parameters and strategies of grid-forming converters.



Efficiency Measurements:

To develop and characterize measurement equipment and procedures for efficiency measurements of grid-connected power converters under actual grid operating conditions. This instrumentation should have at least 5 kHz bandwidth to include energy at higher frequencies and to allow for dynamic efficiency evaluation under non-static operating conditions. To apply this instrumentation to determine the efficiency of three converters under different operating conditions with uncertainties better than 5 % in the loss power.

On-site Testing:

To develop traceable methods, measurement equipment and suitable fast power algorithms for traceable on-site testing of GFM at fundamental line and harmonic frequencies up to 5 kHz. These methods should realise fast real-time current, voltage, power, and frequency measurement with at least 0.1 % uncertainty under highly dynamic grid conditions. To develop and apply an on-site test methodology to assess the performance and response of two commercial state-of-the-art GFM, with an accuracy and timing resolution of two times better than the capabilities of these converters.



AGENDA

EPM 24GRD05 ELITE:

Metrological infrastructure for traceable electrical insulation testing for a reliable electricity grid

EPM 24GRD08 GridForm:

Metrology for efficient grid-forming converters to stabilize future power grids

28th October 2026 - 29th Oct. 2026, PTB Braunschweig

Wednesday 28th Oct. 2026	11:00 - 13:00	Stakeholder Workshop welcome, registration, poster session and lunch
	13:00 - 13:10	Introduction ELITE
	13:10 - 13:30	WP 1 ELITE - Metrology for fast voltage transient measurement and insulation testing
	13:30 - 13:50	WP 2 ELITE - Metrological tools for puncture testing
	13:50 - 14:20	Coffee break and poster session
	14:20 - 14:30	Introduction GridForm
	14:30 - 14:50	WP 1 GridForm - Development of testbeds for grid forming converters and future converter technologies
	14:50 - 15:10	WP 2 GridForm - Laboratory methodologies to test grid-forming converters
	15:10 - 15:30	Coffee break and poster session
	15:30 - 17:40	Lab Tours
	19:30 - end	Dinner

Thursday 29th Oct. 2026	08:30 - 09:00	Keynote speaker - Development of future grids – David Schreiber, Head of Grid Smartification, E.ON SE
	09:00 - 09:30	Keynote speaker - Standardisation and Testing – Heribert Schorn, Chair of IEC/TC 42
	09:30 - 09:50	WP 3 ELITE - Impulse current testing up to 200 kA with standardised waveforms
	09:50 - 10:10	WP 4 ELITE - Metrological tools for transient current waveforms
	10:10 - 10:30	Coffee break and poster session
	10:30 - 10:50	WP 3 GridForm - Metrology for grid-forming converter efficiency
	10:50 - 11:10	WP 4 GridForm - On-site testing of grid-forming converters
	11:10 - 12:30	Lab Tours
	12:30	End of Stakeholder Workshop, lunch optional