



Press release, 06 May 2024

TIGON project: pioneering microgrids to bridge legacy AC grids and DC output



WEBINAR

**TIGON project:
pioneering microgrids
to bridge legacy AC
grids and DC output**

21 May 2024 - 11am CET

Join us for a webinar on pioneering hybrid microgrids – ones that are greener, more resilient and more secure as we push ahead in the energy transition.

During this 45-50 minute webinar, speakers from the TIGON project demo sites in France and Spain will explain how they are developing microgrid software and hardware.

Register [here](#)

Agenda (Central European Time) 21 May 2024

11:00 - Welcome

11:05 - Introduction to the TIGON project (Eduardo García Martínez, [CIRCE](#))

11:10 - CEA demo site (Anthony Bier, [CEA](#))



The TIGON project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement N°957769

The CEA demonstration site will put into operation two interconnected DC microgrids, one in the low-voltage range and the other in the medium-voltage range.

Photovoltaic generation, battery storage system and consumption will be connected to the low-voltage DC grid while medium-voltage DC grid will be linked to the AC mains and a very innovative medium-voltage photovoltaic plant.

In order to achieve the proper operation of the installation, specific power converters are developed in parallel with a dedicated energy management system.

11:25 - CIEMAT demo site (Paula Peña Carro, [CIEMAT](#))

CIEMAT's is developing a smart microgrid with hybrid AC/DC architecture. It is made up of different generation, storage and consumption systems operating at medium and low DC voltage.

The design and construction of specific equipment for these operational needs will allow progress to be made in the study and analysis of the benefits of this type of microgrid compared to electrical microgrids with AC architecture.

11:40 - Replication (Dominique Roggo, [TUAS](#))

The ultimate purpose of the TIGON project is to make the case for viable rollout of hybrid AC/DC grids. Two sites will replicate the innovations: a small residential district in Finland and a metro (underground) network in Sofia, Bulgaria.

Dominique will talk about the Finnish site in Naantali. The key objective at this site is to evaluate how well technology and energy management tools developed within the project can be adapted to the Finnish market at the scale of a small residential district. The replication site includes two PV plants, two Battery Energy Storage Systems, a ground source heat pump and an eV charging station. The local smart electrical distribution substation at Lounatuuli district integrates a 160 kWh BESS supplied with a LVDC bus.

A direct connection between the BESS at substation and the equipment dedicated to supply energy to a real estate resort of 21 apartment with a direct LVDC link will be investigated. The analysis will be based on small scale model at NERC lab dedicated to Hardware in the Loop simulation. A common Energy Management System will control the energy flows between subsystems, in order to optimize the self-consumption and global system energy efficiency.

The webinar will be moderated by Mark Thompson, communication officer at ICONS, and the audience can ask questions at the end.

Get to know the speakers

Eduardo García Martínez is an electronics engineer with a PhD in renewable energy and efficiency. Since 2011, he has been with CIRCE, where he works on the research and



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development of electronics and power electronics systems for renewable energy integration, DC grid integration, battery energy storage systems, electric system emulation, V2G fast chargers and Wireless Power Transfer systems.

Anthony Bier is a power electronics engineer specialising in converter control. He has worked at CEA in the solar energy department since 2012. His work focuses on DC/DC and DC/AC power converts for electrical energy applications.

Paula Peña Carro is a graduate research in CIEMAT's Energy Department. Her professional career began in the forestry sector and then she moved onto renewable energy for an international company in the photovoltaic sector. She has subsequently focused her professional development on research in microgrids.

Dominique Roggo works as a lecturer and researcher at New Energy Research Center by the University of Applied Science, Turku, Finland. His research activities focus on grid integration of renewable energy, e-Mobility and battery energy storage systems. In the frame of larger scale projects like TIGON he has developed expertise in Power Quality and in Low Voltage Direct Current Distribution Systems.

Background to the project

TIGON is funded by the EU's Horizon 2020 Research and Innovation programme and has a budget of roughly €7m. It forms part of the EU's broader policy of building a low-carbon, climate-resilient future.

Online channels

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