

THEVA DEVELOPS SUPERCONDUCTORS FOR SUPERLINK PROJECT IN MUNICH

Project start for the development of the world's longest superconductor compound

Ismaning, October 23, 2020 - The time has finally come: Stadtwerke München and five cooperation partners have the green light to start development and testing of the components for a 12-kilometer superconductor cable in Munich as part of the SuperLink project. The accompanying funding was recently approved by the Federal Ministry of Economics and Energy (BMWi). What is special for THEVA managing director Dr. Werner Prusseit: "Within an industrial consortium, we are developing solutions which can serve as a kind of "blueprint" for other cities. Especially since industrial partners with scalable cable and cooling technology and possible operation and service offers are involved in the component development".

The aim is to have all components (superconductors, cables and cooling) developed and tested within two years so that they can be tested in the main transformer station in Menzing under real operating conditions in the grid. If this test is successful, SWM Infrastruktur plans in the second phase to realize a 12-kilometer-long superconductor high-voltage cable line from Menzing to the load center in the south of Munich – it would be the world's first superconductor cable line of such dimensions with a real supply mandate.

In order to ensure that all components are optimally matched from the outset, the three companies Linde for the cooling technology, NKT for the cable and THEVA for the superconductor are involved. The project is being supported by the University of Applied Sciences South Westphalia and the Karlsruhe Institute of Technology (KIT). Prusseit: "Thanks to the concentrated expertise of this consortium, we will be able to establish a use case with this example. This will allow us to quickly serve other cities with similar solutions. Design, operation and service can be adapted and offered to other situations thanks to modular construction. This paves the way for the conversion of urban energy supply and makes smart cities a reality more quickly".

The aim of the project is to install an extremely compact and high performance superconductor cable which on the one hand requires little space and on the other hand has no negative impact on the environment like other solutions. Conventional power lines are accompanied by electric or magnetic fields and cables have a thermal effect on the ground. Prusseit says: "We have absolutely no such problems thanks to superconductors and the latest cooling technology". Further advantages. Civil engineering costs are extremely reduced. Also the environmental impact associated with the construction is considerably reduced compared to a conventional cable connection. During operation, costs are also reduced due to saved losses.

The use of superconductors is the pioneering technical solution for the future energy grids of metropolitan areas. More than 30 years after the Nobel Prize was awarded to the two German discoverers of high-temperature superconductivity, Karl-Alexander Müller and Georg Bednorz, German companies are positioning themselves at the top of the world in terms of implementation and underline the reputation of Bavaria as a technology location.

About THEVA Dünnschichttechnik GmbH:

With almost 25 years of experience in coating and equipment technology and patented production technology, THEVA manufactures high temperature superconductors (HTS) for the loss-free transport of extremely high electrical currents, thus representing a unique approach to superconductor manufacturing.

To this end, the company has invested twenty years in development and built the first commercial HTS wire production facility in Germany. Thanks to its extremely high energy density, THEVA Pro-Line can replace conventional copper conductors in high-performance applications and opens up completely new perspectives for the construction of electrical components. Manufacturers of cables, fault current limiters, large electrical drives and busbars can rely on the high quality standard and performance of the material. THEVA stands for excellent solutions in coating technology and equipment design.

THEVA Dünnschichttechnik GmbH was founded in 1996 and today has about 50 employees. With headquarters in Germany and sales partners in Asia and the USA, the company is present for its customers worldwide.

In 2012, two strong VC investors, Target Partners and BayBG, came on board. Since 2016, eCAPITAL and Bayern Kapital have also supported the company's growth. Since the third financing round in 2017, EnBW New Ventures has also been among the investors.

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