



**Press release**

## **Nexans completes successful test of world's first HVDC superconducting power transmission system**

*After having qualified a high voltage (HV) cross-linked polyethylene (XLPE) cable system for direct current (DC) applications, Nexans is enlarging its technology portfolio for this growing market by developing a DC superconductor cable system operating at 200 kV. Such superconducting cables are expected to provide the most efficient transmission systems for gigawatts of power.*

**Paris, July 27, 2010** – Nexans, the worldwide leader in the cable industry, has completed successfully the test of the world's first HVDC high temperature superconductor (HTS) power transmission cable designed for 200 kV. This result constitutes an important step in demonstrating the capability of underground HVDC HTS cables to transfer bulk power at the gigawatt levels required by proposed supergrid projects such as the Tres Amigas renewable energy market hub in the US.

The voltage tests were carried out at the Nexans high voltage laboratory in Hanover, Germany. A prototype HVDC HTS cable together with a termination was subjected to a series of tests according to CIGRE (International Council on Large Electric Systems) test recommendations. They included testing at a voltage of 360 kV, representing 1.8 times the 200 kV operating voltage, during several hours. In addition the system was successfully submitted to superimposed overvoltages such as the ones occurring during lightning or switching events.

*"The success of these voltage tests is not just a world first. It materializes Nexans' unique combination of expertises in HV HTS systems and in more conventional HVDC systems involving copper or aluminium conductors.",* says Frank Schmidt, Head of Nexans' HTS Systems Business Unit. *"This self-funded programme constitutes the first stage in the development of an HTS cable system suitable for supergrid projects such as Tres Amigas."*

The HVDC HTS cable is based on a similar configuration to the 138 kV alternating current (AC) HTS cable currently operating in Long Island in the US (installation designed and implemented by Nexans, commissioned in 2008). The key design challenges addressed by Nexans have concerned the termination (connecting the cable to the electrical network) which is completely different from that used in AC systems.

### **Next steps – very high current and jointing**

The next step is for Nexans to adapt this HTS cable system to the very high currents (up to 12,500 A) required to transfer several gigawatts of power in order to take full advantage of the low-loss power transmission capabilities of HTS cables. Nexans will also develop suitable joints to enable the installation of long lengths of HTS cable as well as for repairs.

### **Tres Amigas project – based on HVDC HTS cables**

The Tres Amigas project would create the first renewable energy market hub in the US to enable faster adoption of renewable energy and increase the reliability of the US grid. For the first time, the project in Clovis, New Mexico would unite the three US power grids - the Eastern Interconnection, the Western Interconnection and the Texas Interconnection.

The three grids would be connected by ‘Superconducting Electricity Pipelines’ comprising HVDC power cables and VSC (Voltage Source Converter) AC/DC power converters. The Tres Amigas renewable energy market hub would be a 9.6 km triangular electricity circuit capable of transferring and balancing many gigawatts of renewable power between the three grids.

HVDC HTS cables contained in underground pipelines would transfer gigawatts of power with nearly 100 percent efficiency between each of the hub’s three converter stations. HTS cables are not only more efficient than any other transmission option, they offer a significantly greater power density, so that more power can be transferred within a smaller footprint on the ground.

### **About Nexans**

With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments: from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotives, electronics, aeronautics, material handling and automation.

Nexans is a responsible industrial company that regards sustainable development as integral to its global and operational strategy. Continuous innovation in products, solutions and services, employee development and engagement, and the introduction of safe industrial processes with limited environmental impact are among the key initiatives that place Nexans at the core of a sustainable future.

With an industrial presence in 39 countries and commercial activities worldwide, Nexans employs 22,700 people and had sales in 2009 of 5 billion euros. Nexans is listed on NYSE Euronext Paris, compartment A. For more information, please consult [www.nexans.com](http://www.nexans.com)

### **Contacts:**

#### **Press**

Céline Révillon

Tel. : +33 (0)1 73 23 84 12

[Celine.revillon@nexans.com](mailto:Celine.revillon@nexans.com)

#### **Investor Relations**

Michel Gédéon

Tel.: +33 (0)1 73 23 85 31

[Michel.gedeon@nexans.com](mailto:Michel.gedeon@nexans.com)