



**Cable for Offshore Windparks**



Nexans Germany is one of the leading cable manufacturers in Europe. The company is offering an extensive range of high performance cables, systems, and components for the telecommunications and energy sectors, rounded off by superconducting materials and components, Cryoflex transfer systems and special machinery for the cable industry. Producing at manufacturing plants with 3.800 employees in Germany and abroad, the sales in 2002 amounts to 708,6 Mio Euro. The full integration into the Nexans Group Nexans Germany also benefits from excellent opportunities to use the available synergies in all corporate fields, which not only applies to worldwide projects but also to research and development, the exchange of know how, and to other areas.





Low, medium and high voltage cables are manufactured at the Hanover plant. Planning and design for cable installations, the cabling of onshore and offshore wind parks as well as the production of special machinery for the cable industry complete the production range.

Since the early 70ies, Nexans Deutschland Industries has been a supplier of XLPE-insulated submarine power cables for customers all over the world. Such cables are used to supply power to lighthouses, offshore oil and gas platforms, and to islands such as the North and East Frisians, the energy supply of which is secured by Nexans submarine cables.

# Cable for Offshore Windparks

## Submarine power cables

For almost 30 years, Nexans has been supplying different types of XLPE-insulated submarine power cables manufactured at its Hanover facilities to customers all over the world. The cable design is determined by a variety of requirements and environmental conditions - with conformance to national and international standards always to be kept in mind. Since requirements and environmental conditions for each project differ greatly, submarine cable designs are always project-specific.

For the internal cabling of wind parks, maintenance-free 36kV-XLPE cables with integrated optical fibre elements for data communication, are the tried and tested products to be chosen. Nexans' product range comprises cable designs with or without radial and longitudinal water tightness. Designs with laminated aluminium tape do

have a lower weight, smaller diameters and smaller bending radii than cables with lead sheathing. This way, the handling of the cable during laying and while being installed inside the towers of wind power plants is easier.

By assembling the three energy cables and applying the outer steel armouring, the magnetic field is reduced to a technical minimum. Additionally, the armouring is a mechanical protection of the cables against the enormous forces during laying as well as during fixing them to their hang-offs at the turbine towers.



## Cable laying

Nexans has transportable special equipment for the transfer of marine cables into cable vessels at its disposal. For the laying of the cables, we cooperate with leading, specialized contractors worldwide. Depending on the seabottom condition, the cables may be further protected by simultaneous or subsequent burial.



## Accessories

Accessories – from cable hang-offs via sealing ends for the connection to the switchboards up to splice enclosures for optical fibre cables – enable comprehensive solutions for cabling systems. They offer planners and operators of offshore wind parks a wide variety of standardized components for a high degree of flexibility.



## Logistics

Offshore wind park cabling projects make high demands on logistics. Miles of submarine power cables weighing many tons must be transported from the production site to the wind park for just-in-time deliveries. Nexans Logistik GmbH and our project management teams developed project-specific transport solutions and the logistic concept for the wind park's cabling.





## Environment management

Keeping ecological concerns for the protection of resources in mind, economical advantages can be achieved. A constant reduction of raw materials and energy consumption as well as the consistent improvement of our products, processes and technologies in ecological terms is part of our environmental policy.

## Project management

Nexans project management teams are looking after such offshore wind park projects that require special expertise. The project manager or project team in charge plans and supervises individual operational sequences and coordinates processes - from the acquisition to the successful conclusion of the project.



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## Competence



As a result of the growing environmental awareness, an increasing demand for renewable sources of energy and the higher output of wind power plants at sea, turnkey cabling of offshore wind farms was an important new challenge for Nexans. With the successful realization of the first offshore wind power projects, including the complete delivery of submarine power cables with all corresponding components for

the Arklow Bank wind park in the Irish Sea, and the cable laying and turnkey installation for Horns Rev, presently the world's largest offshore wind park off the Danish coast, Nexans has proven its expertise and increased its lead in this market segment.

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## Engineering



The development of new products, processes and systems in close collaboration with the customer is the concept behind the success of Nexans. The fact that production, project management, sales and engineering are all located at the same premises, is an advantage turned to good account at our Hanover location. This way, individual technically and economically optimized system solutions are developed to guarantee the safe operation of offshore wind park facilities.

## Service

Highly specialized Nexans employees, especially trained for offshore jobs, carry out the demanding tasks on site - from the connection of switchboard plants, via the splicing of optical fiber cables for data communication, up to the commissioning tests which successfully conclude the installation work.





Global expert in cables and cabling systems

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