

Cable Solutions for the Future

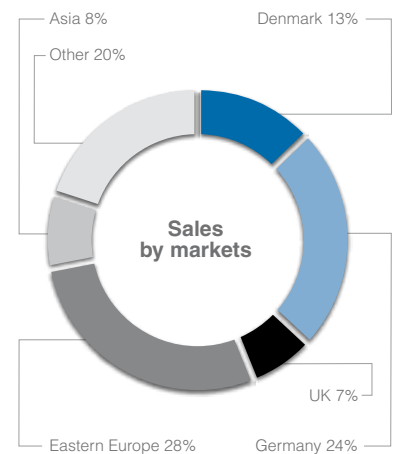
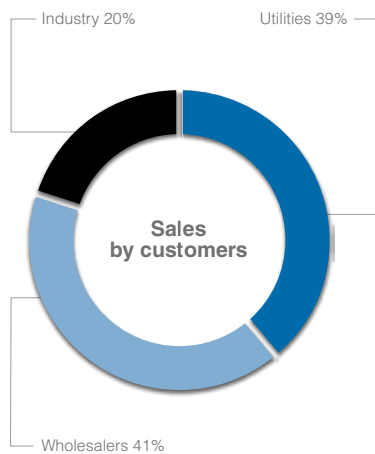
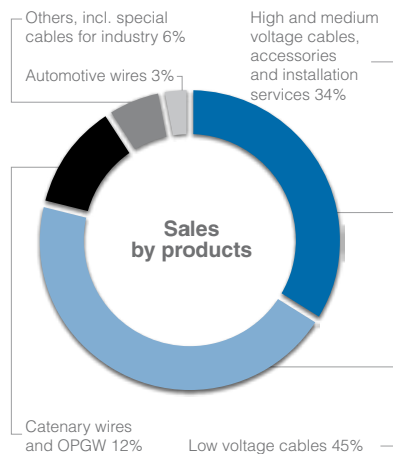


Completing the picture

A natural choice as a supplier to the energy sector



Left to right: Thomas Hofman-Bang, CEO NKT Holding, Dion Metzemaekers, CEO **nkt cables group**



A natural choice as supplier to the energy sector

Innovation and thinking ahead have always been high priorities for **nkt cables**. Our manufacturing plants are among the most modern, flexible and cost-effective in Europe. We are also among the most innovative companies in terms of environmental responsibility, focusing on finding creative processes and products.

nkt cables develops, manufactures and markets power cables and cable systems for electricity transmission (high voltage cables and accessories), electricity distribution (medium voltage cables and accessories), and electrical installations (low voltage cables). Temperature monitoring systems and OPGW/OPPC (Optical Ground Wires/Optical Phase Conductors) are also part of our product range for the electricity sector. The range also includes catenary materials for electric railways, wires for the automotive industry and a wide selection of special cables for industrial uses. We also provide numerous consulting and engineering services.

With manufacturing facilities in Denmark, Germany, Norway, the Czech Republic, Poland and China and sales offices all over the world, **nkt cables** is a market oriented, highly technological cables manufacturer with global ambitions. **nkt cables** continuously invests heavily in new and improved manufacturing facilities. The most recent of these is our new plant in Cologne (expected operational by Mid 2009), which focuses mainly on high voltage cable solutions, including submarine cables.

The primary markets for **nkt cables** is Europe and China, while catenary systems, OPGW, medium and high voltage cables and accessories are sold all over the world.

nkt cables' main customers are within the electricity and power sectors, building and construction, telecommunications and railway companies, and the auto industry, as well as industry in general.

nkt cables has more than 3,200 employees and a 2008 turnover of around Euro 1 billion.

nkt cables is owned by NKT Holding A/S (www.nkt.dk), which is listed on the Danish Stock Exchange.



LOW VOLTAGE CABLES

MEDIUM VOLTAGE CABLES

Low voltage cables

Automotive cables

We manufacture automotive wires for temperature classes 100°C and 125°C, and wires – some with screening – made of a wide range of special materials for particular temperature classes and applications. These materials include polyamide, teflon, polyester, polyurethane, silicone and polypropylene.

Flexible cords and specialities

Our manufacture of flexible cords, cord sets and special cables for industry takes place at cost-effective manufacturing facilities throughout Europe.

Our products comply with all current requirements regarding flexible cords for industrial use, and we supply a wide selection of this kind of products and services to leading European OEM manufacturers.

Building wires and 1 kV cables

For environmental and safety reasons, **nkt cables** developed and introduced a completely new range of cables and cords that do not contain PVC and halogen. In case of fire, these PVC and halogen-free cables only emit weak smoke, with no corrosive fumes. This ensures better escape and rescue conditions. As a result, using cables supplied by **nkt cables** results in greater safety for both people and equipment.

Our PVC and halogen-free cables have gone through a lot of improvements since their introduction in 1995, and we are now marketing the third generation of this technology. **nkt cables** is much more than a cable manufacturer. Creating complete solutions for our customers is very important for us – which is why we have developed our own proprietary **nkt doc**® software for use with low voltage cables. This software makes it easy to design and calculate the entire electrical installation. It also helps you with documentation and ensures that you have made the best possible selection of cable types and specifications.

Medium, high and extra high voltage cables (up to 550 kV)

nkt cables provides complete cable solutions, extending right from design to final installation. This has made us one of the leading suppliers of equipment for electricity distribution and transmission supply systems.

This in turn imposes particular requirements, including safety, quality assurance, reliability, flexibility and control. As a consequence of these requirements, **nkt cables** has introduced basic certification and quality control throughout the process. Every phase of the manufacturing process – from the suppliers of raw materials to final delivery – is monitored and controlled by the latest technology, and supervised by our own specialists with the assistance of **nkt cables'** in-house cable installation department.



HIGH VOLTAGE CABLES

CABLE ACCESSORIES

By partnering with **nkt cables**, you get access to our know-how about complete energy transmission systems, starting with medium voltage and high voltage cables as well as accessories.

nkt cables has also more than 130 years of know-how in the field of submarine cables. This unique expertise is also the basis for our special know-how regarding submarine cable systems for wind farm projects. In addition, you get access to the highly experienced **nkt cables** submarine cable crew, available for rapid, professional offshore cable installation and repair jobs.

The latest development is the new monitoring system with RTTR software “Adappro®” (Real Time Thermal Rating), based on optical fibres. This system enables our customers to optimize the performance of their high voltage transmission systems – both onshore and offshore.

nkt cables is also at the forefront when it comes to high-temperature superconductor (HTS) technology. Right from the very beginning, we have led the way in researching and manufacturing superconductive cables, and put the first superconductive cable into operation in 2001. The transmission capacity these cables provide is five times higher than with conductors made of copper, while current loss is reduced to one tenth.

Superconductive cables can also conduct electric current without resistance at temperatures of approx. 200°C

below zero, making this a solution that is particularly environmentally friendly.

OPGW and OPPC

The high standard of research and development in the field of construction of Optical Ground Wires and Optical Phase Conductors (OPGW/OPPC) has made **nkt cables** a high-tech partner in the installation of telecommunication network systems for power supply companies.

Equipped with a customer-specific number of optical fibres, this data highway makes it possible for a wide range of operations, including data transmission, data exchange, remote monitoring, telecommunications and process signal transmission to be carried out in power supply companies’ networks, in a manner that has never been achieved before.

As a result, **nkt cables** is able to meet all international customer requirements to perfection.

Power cables accessories

nkt cables has been manufacturing and selling power cable accessories for domestic and international markets ever since 1949, and the company is now one of the world leaders in this field.

nkt cables introduced silicone rubber terminations in the 1960s and has subsequently specialized in the manufac-



CATENARY SYSTEMS

SUBMARINE CABLES

turing of power cable accessories made of silicone rubber. This material is particularly suited to this purpose due to its excellent mechanical and electrical insulation properties. For more than 40 years, silicone has been used successfully as high-quality electrical insulation for voltages up to 550 kV. It has the added advantages of high elasticity and multi-range application, where one silicone rubber body can be used for different conductor cross-sections.

The product range includes cable joints, cable connectors for SF6 switchgear and transformers as well as indoor and outdoor terminations.

Cabinets and house service boxes

The first house service box in Germany made of cast iron was developed and manufactured by **nkt cables**. Continuous development of both materials and design enabled **nkt cables** to produce the first house service box made of glass-fibre reinforced polyester resin, in the early 1960s. At the same time, **nkt cables** also developed cable distribution cabinet housings made of glass-fibre reinforced polyester resin, which is a self-extinguishing compound. Continuous enhancements of materials and cooperation with renowned specialist manufacturers of the component materials, along with changing technical requirements, have been the basis for further product developments. **nkt cables** is now among the leading manufacturers of

house service boxes and cable distribution cabinets in Germany.

Catenary systems for railway

nkt cables supplies a wide spectrum of rail traction wire materials, contact wires and chain cables. **nkt cables** has the right contact wire for every speed requirement, ranging from pure copper wire for speeds of up to 160 kilometres an hour right up to a new generation of contact wires made of a copper and magnesium alloy, which can be used for speeds of up to 400 kilometres an hour. Years of experience, along with our focus on creating high-quality products, makes **nkt cables** one of the most important partners for railway companies and planners around the world.

Installation department

nkt cables' cable system competence covers the entire process from design, planning and manufacturing of both cables and accessories to final installation. The **nkt cables** installation department has more than 100 years of experience and is capable of assisting in all kinds of installation, repair and services of most cable types. The installation department has employees in Denmark and in Germany, and can assist in all kinds of cable projects anywhere in the world.



PROJECT MANAGEMENT



ENVIRONMENT



Environment - a question of policy... and a question of doing

When we develop new products, environmental considerations are just as important as all other more conventional considerations. We assess the environmental impacts of all new products in advance, taking into account the choice of raw materials and any changes necessary in our manufacturing plants.

With 50 years of experience with cable recycling, **nkt cables** is one of the few cable manufacturers that operates a complete recycling concept for all recyclable cable types. We take back all kinds of worn-out and scrapped cables and guarantee recycling of these in our own plant, which is environmentally approved by the appropriate authorities and environmentally certified in accordance with the ISO 14001 standard. This ensures maximum utilization of resources via the best possible recycling of both metals and plastic.

A healthy working environment is also very important for us. Value-based management is one of the cornerstones of **nkt cables**. Our employees have a high degree of freedom in their work and also exert considerable influence on their own day-to-day working lives. Together, these contribute to ensuring a good, healthy working environment.

Focus on renewable energy

Due to capacity growth and concerns about resource exhaustion, the impact of greenhouse gases and the environmental, social and political risks associated with extensive use of fossil fuels and nuclear energy, we consider it a natural step to take our part of the responsibility. As a result of this, developing cable solutions with a focus on renewable energy technology now plays a steadily increasing role in our activities.

We connect renewable energy sources – with onshore and offshore wind farms as a prime example. Our HTS Triax™ Energy Cable is one of our most environmentally friendly solutions. This cable solution is known for its ability to conduct electric power with very low resistance at the temperature of liquid nitrogen, and with no electromagnetic radiation.



NKT Holding
Revenue 1,875 mEuro
Employees – 9,110

Nilfisk-Advance

Revenue 800 mEuro
Employees – 5,150
Prof. Cleaning Equipment

nkt cables group

Revenue 1,050 mEuro
Employees – 3,200
Cable Solutions

NKT Photonics Group

Revenue 25 mEuro
Employees – 160
Optical Components

NKT Flexibles (51%)

Revenue 190 mEuro
Employees – 600
Flexible Pipelines

All numbers concern 2008

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