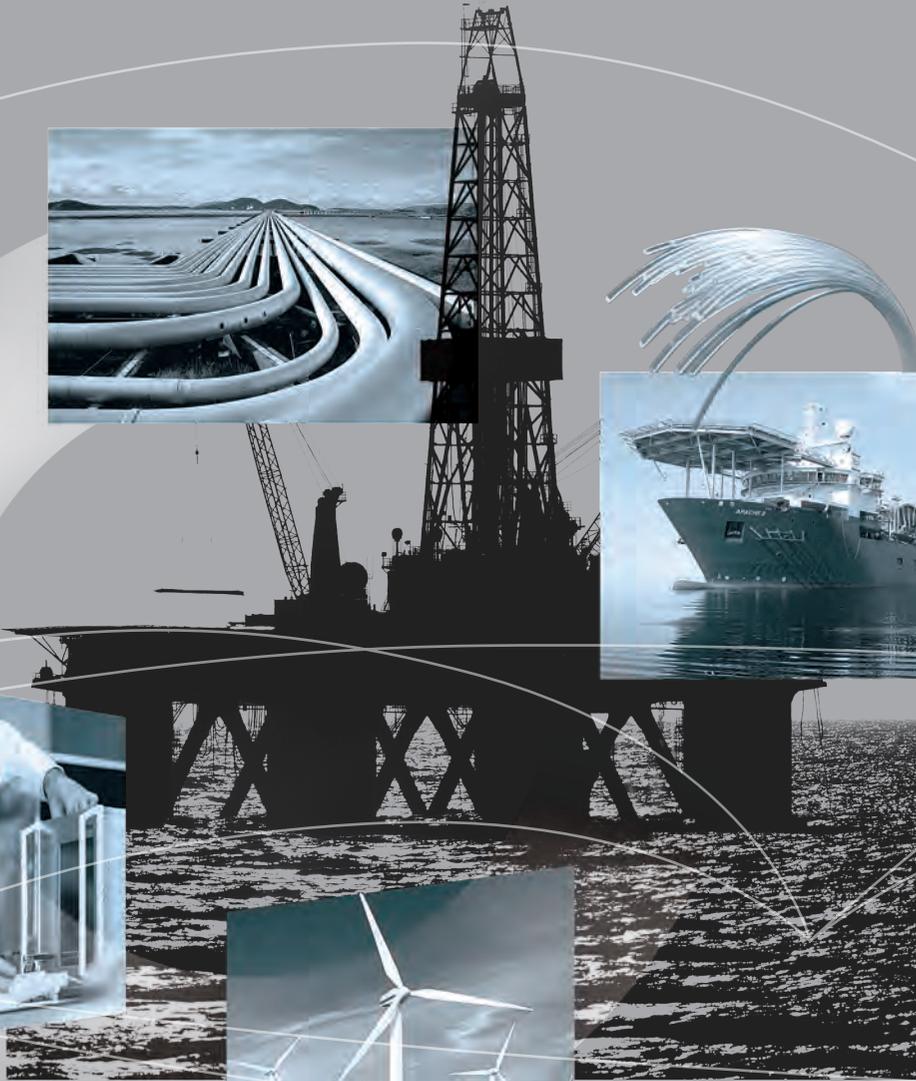
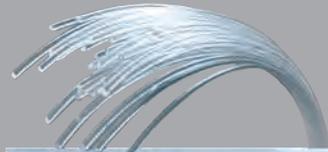


omnisens

Securing asset integrity



Omnisens is a world leader in energy asset monitoring and management

FROM RESEARCH TO REVENUE

Omnisens is a company born out of research into fiber optic measurement techniques at the renowned Technical University of Lausanne (EPFL). Today, Omnisens provides energy companies with some of the world's most advanced systems for securing asset integrity, helping to ensure the safety of people and communities, reduce operational risk and improve commercial performance.

REDUCING THE RISK OF CATASTROPHE

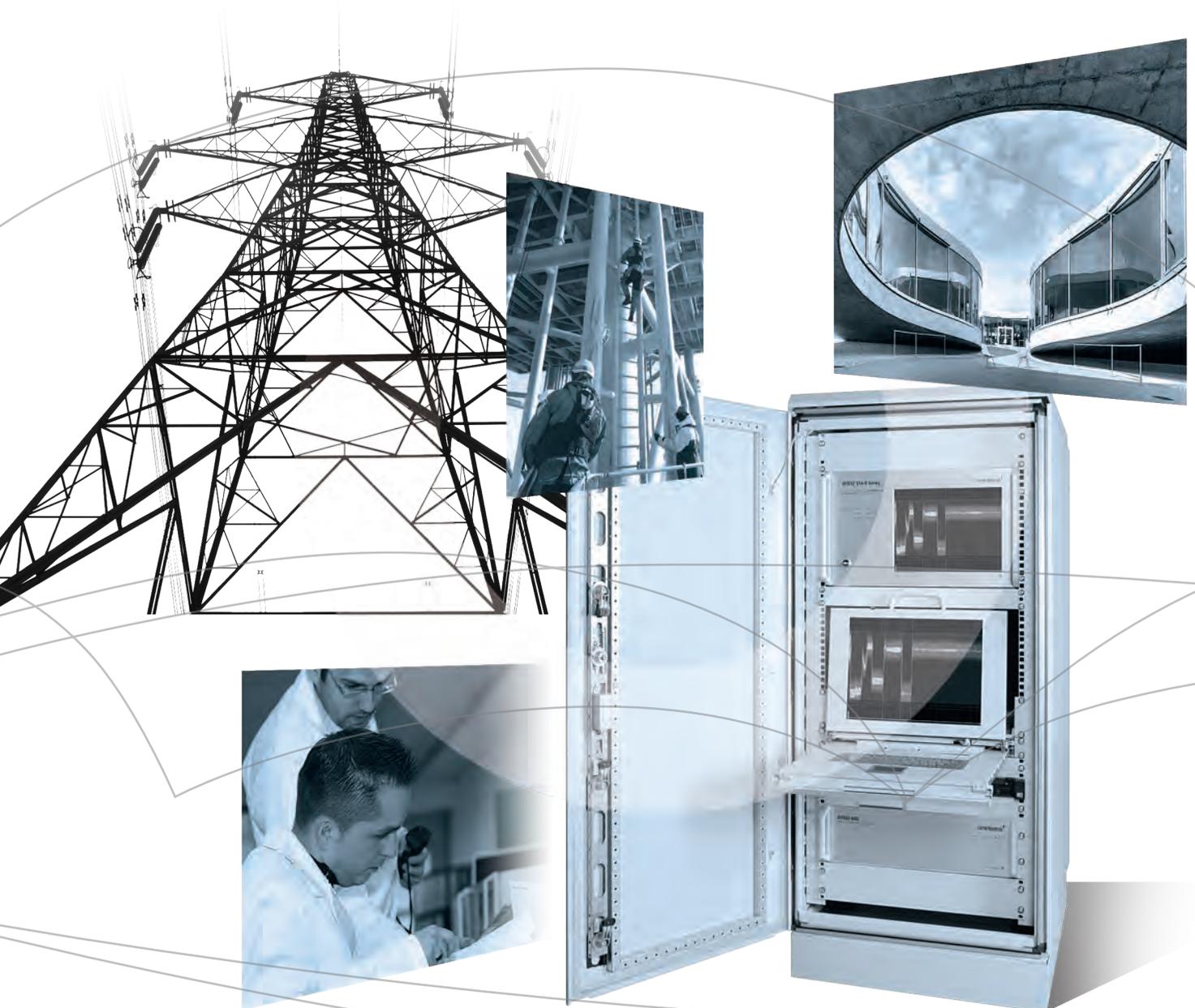
Global energy suppliers have a critical need to ensure that pipelines, subsea infrastructures and electricity cables are monitored in 'real-time'. Omnisens technology accurately detects events, before they become catastrophic failures, and gives their location, so they can be quickly investigated and rectified.

COST-EFFECTIVE AND RESPONSIBLE SOLUTIONS

Energy companies invest millions in safety and social responsibility programs. Omnisens supports these commitments by helping companies avoid the huge costs – human, reputational and financial - of a catastrophic event, such as a pipeline leak, or an interruption to supplies.

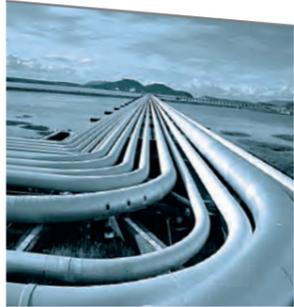
PROPRIETARY TECHNOLOGIES AND A FULLY INTEGRATED SERVICE

As an expert and preferred partner, Omnisens proven technologies combine sensors, software and applications expertise to create high performance monitoring systems that deliver pinpoint accuracy and, ultimately, peace of mind. Operations cover the full spectrum of commercial activity, from design, engineering, project management and installation to training, data interpretation, service and support.





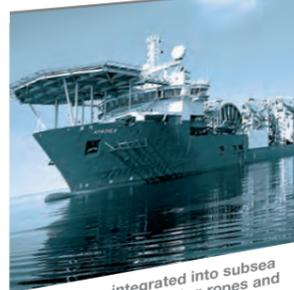
Threats to pipelines include ground movement, landslides, corrosion and third party interference.



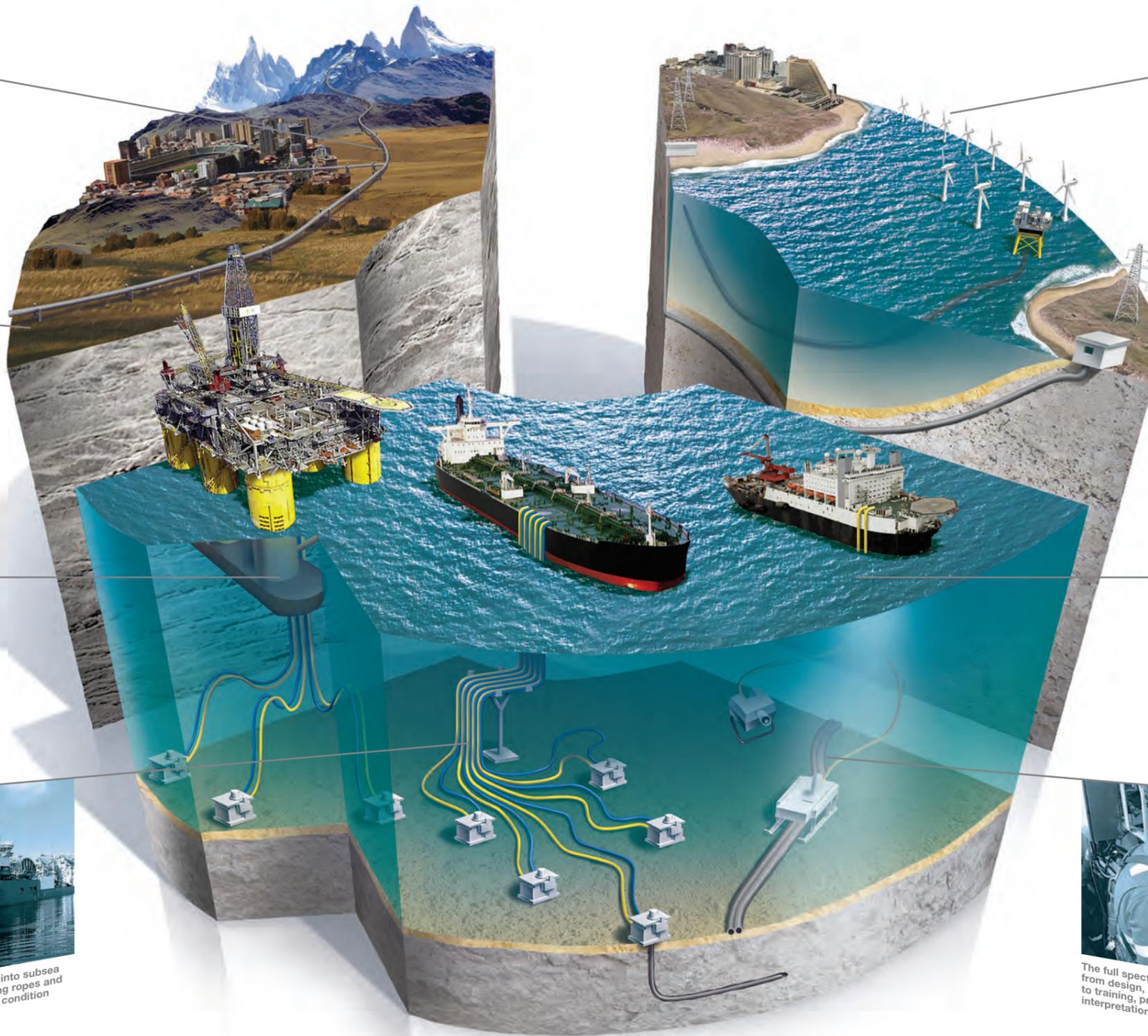
Pipelines are continuously monitored with an Omnisens system, registering small variations in temperature, strain and even vibration, to within a meter of the occurrence.



Subsea wells, even deep-water, can be efficiently monitored with topside instrumentation thanks to the long distance capabilities of the Omnisens system.



Optical fibers integrated into subsea risers, umbilicals, mooring ropes and flowlines provide on-line condition and fatigue monitoring.



Power cable temperature monitoring enables utility companies to detect when and where an issue (eg: thermal bottleneck) has occurred helping them optimize grid performance.



Long-range, continuous monitoring systems provide an 'always-on' and accurate safeguard that protects people, operations and corporate reputations.



Proven technologies combine with sensors, software and applications expertise to create high performance monitoring systems.



The full spectrum of commercial activity, from design, engineering and installation, to training, project management and installation, data interpretation and support is provided.

VERSATILE AND VERIFIABLE SAFEGUARDS FOR ENERGY TRANSPORT

Power cables run for long distances, pipelines for hundreds, even thousands of kilometers, over land and under sea. Even the smallest leak, break or intrusion to an asset can cause untold damage, putting lives at risk and undermining environmental, Corporate Social Responsibility and commercial strategies. So companies need every tool at their disposal to ensure that they are prepared for the unpredictable. Omnisens long-range, continuous monitoring systems provide an 'always-on' and accurate safeguard that protects people, operations and corporate reputations in equal measure.

ENABLING EFFICIENT ONSHORE PIPELINE MANAGEMENT AND CONTROL

Pipelines carrying gas or oil across countries and continents are exposed to a multitude of risks, both natural and man-made. Potential threats include ground movement, landslides, corrosion and third party interference. Omnisens systems continuously monitor entire pipelines, registering small variations in temperature, strain and even vibration, to within a meter of the occurrence. By identifying a problem within minutes, companies can avoid the many consequences associated with pipeline failures.

ENSURING THE CONTINUOUS FLOW OF ELECTRICITY

Electricity companies need to ensure the security and continuity of their supply, whilst at the same time maximizing the efficiency of their operations. By means of power cable temperature monitoring, operators are able to detect 'when and where' an issue (e.g.: thermal bottleneck) has occurred and thus can mitigate risks. Omnisens fiber optic monitoring also allows operators to review a cable's performance and plan its replacement. Applicable to terrestrial and subsea interconnectors, umbilicals, transmission and wind farm cables, Omnisens systems help minimize risk and optimize performance in all instances.

MONITORING THE CONDITION AND OPERATION OF SUBSEA STRUCTURES

Offshore environments pose constant challenges to energy infrastructure such as subsea risers, umbilicals, mooring ropes and flowlines. Deep-water operations, strong currents, seabed migration, dragged anchors and dropped objects are constant threats. Omnisens systems use optical fibers integrated into these structures to provide condition and fatigue monitoring, informing predictive maintenance decisions. Monitoring literally thousands of measurement points over many kilometers, these systems ensure that pipelines and flowlines operate within their design limits, contributing to responsible working practices and helping ensure the longevity of the asset.

ALASKA HEATED FLOWLINE

Heated flowline, off Alaska, carrying well flow. Length: 10 km/6 miles, in semi-frozen Arctic Ocean.

OFFSHORE UK WINDFARM

High voltage subsea export cables taking electrical power from large offshore wind farm to supply UK grid. Length: 48 and 49 km/29 and 30 miles.

NORWEGIAN NORTH SEA

Direct Electrically Heated subsea pipeline in Norwegian North Sea carrying well flow. Length: 22 km/14 miles.

PERU GAS PIPELINE

Gas pipeline from Camisea to Melchorita, Peru. Distance: 410 km/250 miles, crossing the Andes at 5000 m (16,400 ft).

GUANGDONG TO HAINAN ISLAND

EHV interconnector linking one of the world's largest power grids on mainland China to Hainan Island. Distance: 32 km/20 miles.

Securing asset integrity around the world

- ENVIRONMENT CHANGES
- CLIMATIC FACTORS
- GROUND MOVEMENT
- TIDES & SEABED MIGRATION
- THIRD PARTY INTERFERENCE
- FATIGUE

\$30 billion is the value of assets monitored by Omnisens, around the globe.

SECURING THE WORLD'S ENERGY INFRASTRUCTURE ASSETS

Energy companies operating in the oil, gas and electricity sectors face increasing demands to ensure that their assets are operationally secure and effectively monitored. Compromised assets can impact the safety of employees and the public, prove disastrous for the environment and have grave consequences for companies' reputations and brand equity. Add to that the commercial and economic costs of asset damage and it's clear why companies require holistic solutions that provide 'real-time' alerts over the entire length of pipelines, power cables, subsea risers, umbilicals, and flowlines (SURF). This is how Omnisens helps.

A UNIQUE SOLUTION USING FIBER OPTIC SENSING

Omnisens is a leader and pioneer in a new generation of long-distance fiber optic sensing. Fiber optic cables are ideal for transmitting telecommunications data, but are equally perfect for detecting changes in temperature, strain and third party interference, thanks to unsurpassed levels of sensitivity, long distance measuring capability and electromagnetic immunity. For over two decades, the widespread laying of fiber optic cables along pipeline and power cable routes has created an opportunity to harness the properties of these versatile transmissive materials. Today, Omnisens provides energy companies with unique solutions for critical event detection and localization, in addition to asset performance monitoring.



SECURING ASSET INTEGRITY WITH OMNISENS

A leader in long-distance fiber optic sensing, Omnisens has pioneered effective real-time asset integrity monitoring solutions for critical oil and gas, power and civil engineering infrastructures.

The company's monitoring solutions are designed to:

- Prevent leaks in onshore pipelines through the detection and location of ground movement and third-party interference.
- Detect and locate leaks in onshore and offshore pipelines.
- Assure flow in subsea flowlines, as well as monitor the condition and performance of heat-traced pipelines.
- Monitor fatigue and operating condition of subsea umbilicals, risers and flowlines.
- Optimize performance and monitor the condition of terrestrial and submarine high voltage power cables.

Through its dedicated team, Omnisens follows a project's evolution from design, sensing cable selection and application, project management, commissioning, data interpretation and on-site or remote service and support, for fully integrated, continuous asset integrity monitoring.

The company operates throughout the world, either direct or through specialized solution providers.

OMNISENS MISSION:

We provide distributed fiber optic-based monitoring solutions for oil and gas as well as electricity transport, helping customers optimize asset performance and secure asset integrity.

OMNISENS VISION:

We are recognized by the key actors of the industries we operate in as the leading expert and most trusted partner for the reliability and performance of our dedicated asset integrity monitoring solutions and for the quality of our services.

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