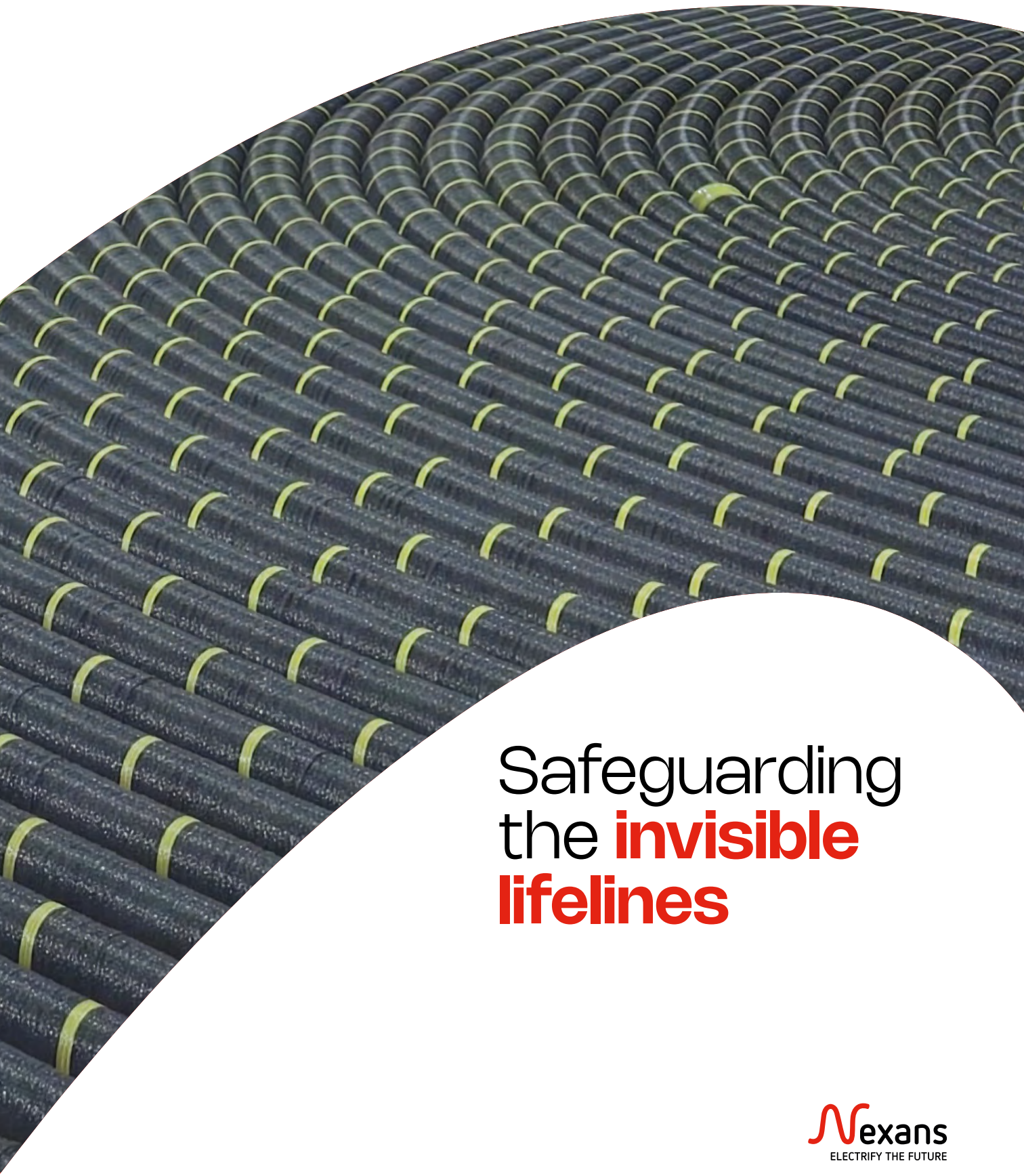

Safeguarding the **invisible lifelines**

Nexans
ELECTRIFY THE FUTURE

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Sovereignty is nothing without resilience. As offshore wind reaches record milestones, the vulnerability of our high-voltage subsea cables has become a critical risk. Europe's current framework remains insufficient to tackle the dual challenge of risk prevention and rapid recovery. Nexans, together with sector professionals, is championing a new European standard for IMR (Inspection, Maintenance, and Repair).

Protecting these vital lifelines is no longer an option—it is a strategic necessity.

Resilience as a strategic imperative

Infrastructure at risk, but poorly protected

Deep beneath the waves, Europe's energy and digital systems hang by a thread: high-voltage subsea cables. These invisible but essential arteries enable electricity to flow seamlessly between countries, including offshore renewable energy.

They're also subject to diverse risks, from natural seabed instability to deliberate sabotage. The resulting outages are both costly and perilous for the economy. Unlike telecommunications networks, electric grids have little backup capacity: downtime therefore has a direct impact on markets and consumers.

Yet, today, no satisfactory framework exists for repairing this essential infrastructure.

European Union: a solid foundation

The EU has started to grasp the urgency of this situation, establishing a first strategic framework to boost capacity to prevent, detect, respond to, recover from and deter incidents in February 2025. The EU Action Plan on Cable Security introduces measures including an EU investment framework, a coordinated surveillance mechanism, and the prospect of a reserve fleet of repair vessels to ensure capacity in times of crisis. Yet Europe's ability to repair damaged cables remains compromised.

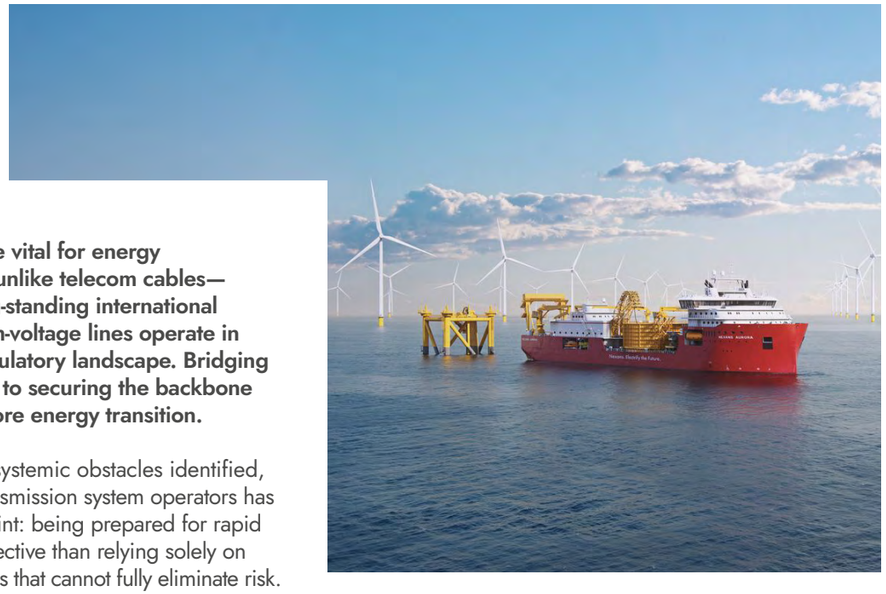
While industry organizations have welcomed the EU action plan, they have nevertheless sounded the alarm about two points:

- **Without coordinated investment and strategic support, capacity gaps may emerge.**
- **Without direct collaboration between public authorities and the subsea cable industry, Europe risks falling short in energy security.**

Four systemic challenges identified by the ESCA/IMCA and the EU:

- **Ageing fleets – too few dedicated repair vessels, which are often tied up in installation projects**
- **Skills shortages – critical gaps in jointers and marine engineers**
- **Regulatory fragmentation – inconsistent national rules delay emergency permits**
- **Investment gaps – lack of coordinated frameworks to finance repair capacity and equipment stockpiles**

Limiting downtime: a priority for Europe



Subsea cables are vital for energy sovereignty. Yet, unlike telecom cables—protected by long-standing international agreements—high-voltage lines operate in a fragmented regulatory landscape. Bridging this gap is critical to securing the backbone of Europe's offshore energy transition.

In addition to the systemic obstacles identified, feedback from transmission system operators has raised a crucial point: being prepared for rapid repairs is more effective than relying solely on preventive measures that cannot fully eliminate risk.

For example, by 2030, subsea cables installed by Nexans alone will exceed 19,800 km, averaging 11 repairs per year. Failures are inevitable. But without a contingency plan, these major power transmission lines risk facing outages lasting months or even a year, leading to severe losses.

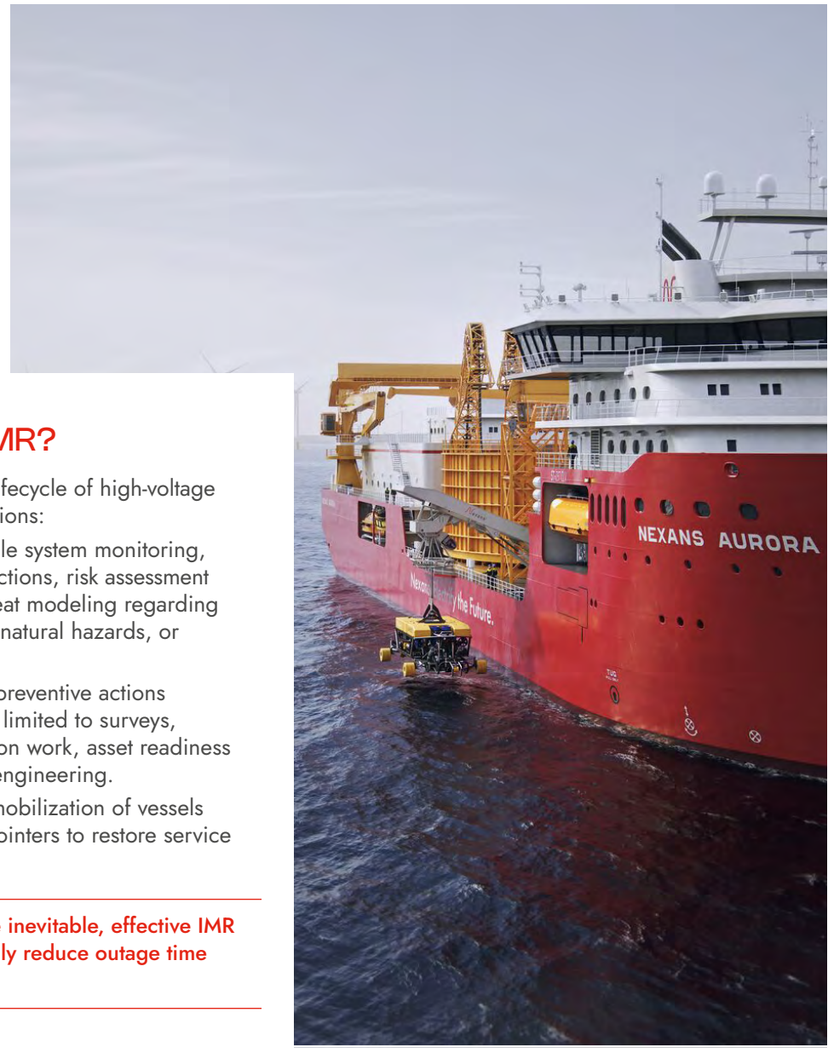
Europe must urgently safeguard the services provided by this subsea infrastructure by minimizing downtime caused by outages. This goes beyond preventive measures, which will never eliminate all risks, to instead include rapid repair systems.

A proven **Inspection, Maintenance, and Repair (IMR)** strategy is vital to ensuring Europe's energy sovereignty and investor confidence. Our ability to advance sustainable electrification in Europe will depend on our capacity to guarantee resilient and reliable infrastructure for offshore wind.

"In an era of geopolitical instability and rapid electrification, Europe's subsea cables have evolved from simple technical assets into critical infrastructure. Through our specialized technology, we provide the inspection, maintenance and repair services that underpin European energy security, sovereignty, and investor trust."

Pascal Radue | Senior Vice-President PWR-Transmission, Nexans

Inspection Maintenance Repair (IMR): A strategic asset for Europe



What is IMR?

IMR covers the full lifecycle of high-voltage subsea cable operations:

- **Inspection** – cable system monitoring, spare parts inspections, risk assessment and proactive threat modeling regarding maritime activity, natural hazards, or interference.
- **Maintenance** – preventive actions including but not limited to surveys, remedial protection work, asset readiness checks, and pre-engineering.
- **Repair** – rapid mobilization of vessels and specialized jointers to restore service and limit impact.

While failures are inevitable, effective IMR frameworks drastically reduce outage time and systemic risk.

Nexans, a leader in IMR

Our IMR approach is the result of innovative technology, expert technicians, and a world-class fleet:

- Our **digital monitoring** tools detect anomalies early via real-time data.
- Repair equipment such as the **Modular Repair Deck (MRD)** can be adapted to multiple vessel types.
- Combined with **advanced ROV-based inspection,** these innovations create safe, scalable, dependable IMR operations at depth and in challenging marine environments.

Through exclusive strategic partnerships with key energy sector players including Equinor and Parkwind (Jera Nex Bp Group), Nexans ensures continuity of offshore wind operations and greater network resilience.

Proven efficiency

Nexans operates one of the world's most advanced fleets of specialized cable-laying vessels. These ships are designed for the two of the most complex operations at sea: the laying of high-voltage subsea cables to connect offshore wind farms, islands, and countries to the mainland grid, and their emergency repairs. As of 2025, we've reached installation depths of 3,000 meters.

As technology advances and the global landscape changes, Nexans is continuously innovating to improve the performance of its IMR solutions. The Group also invests heavily in R&D and in new offshore repair equipment (including the Modular Repair Deck) to reduce outage times and increase operational safety.

Case study: the critical repair of Estlink 2

What does a successful repair look like?

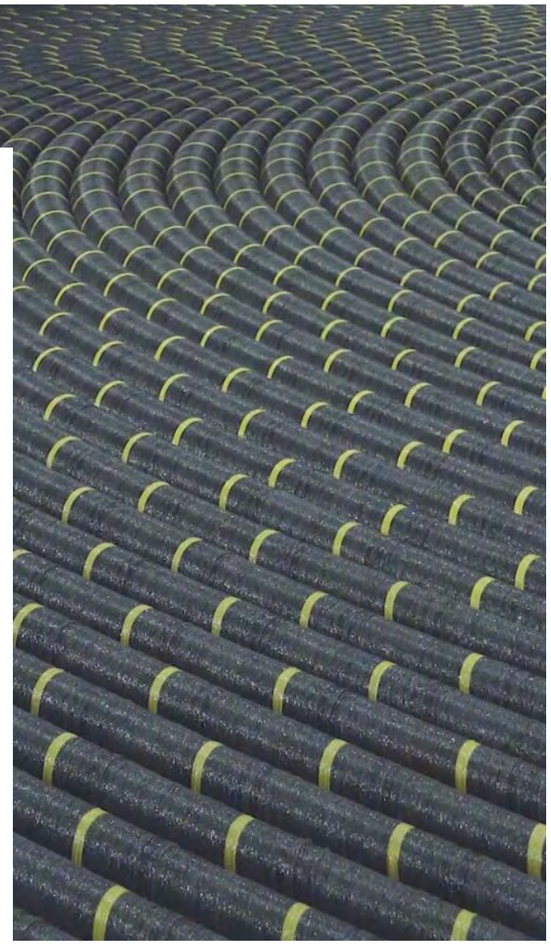
On Christmas Day, 2024, a connection failed on Estlink 2, the high-voltage direct current link between Finland and Estonia and critical part of the Baltic region's electricity system. The countries' transmission system operators confirmed the fault in the subsea section the following day.

Nexans rapidly mobilized its IMR engineering teams and equipped a repair vessel, moving equipment to Nexans' Halden facility in Norway for preparation and testing. By June 2025, a 1 km section of cable was successfully replaced offshore.

"This successful repair demonstrates our readiness and capability to respond fast and deliver where it matters most."
Pascal Radue, EVP Power Transmission, Nexans

"The interconnector plays a key role in maintaining security of supply and energy cooperation in the region. Together, we've ensured that Estlink 2 can return to operation safely and on schedule."
Kimmo Nepola, Unit Manager, Fingrid

Recommendations to accelerate European resilience



Responding quickly and effectively to failures in subsea power networks depends on 3 prerequisites: readiness (such as pre-defined IMR plans), partnerships, and expertise.

A few steps can drastically improve the EU's ability to prevent these failures:

- **Fast-track permitting** for cable repair via an EU emergency permit mechanism
- **Strategic stockpiles** of spare equipment that has been pre-tested and pre-qualified
- **Skills development** to provide EU-level training for jointers and subsea engineers
- **Integrated monitoring** combining sonar, ROV, and vessel tracking for early warning of incidents

Safeguarding critical energy infrastructure and securing continuity of supply is not only an engineering objective, but a strategic responsibility. Sovereign energy depends on resilient networks. Europe must ensure that its subsea systems—invisible but vital lifelines—are prepared for the future.

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