

Risk Consulting ^{2 • 2025}

Insights into risk management and loss prevention



4 Navigating global uncertainty in a shifting geopolitical landscape

20 New research calls for multi-pronged approach to lithium-ion battery safety

24 Electrical fire risks in the spotlight



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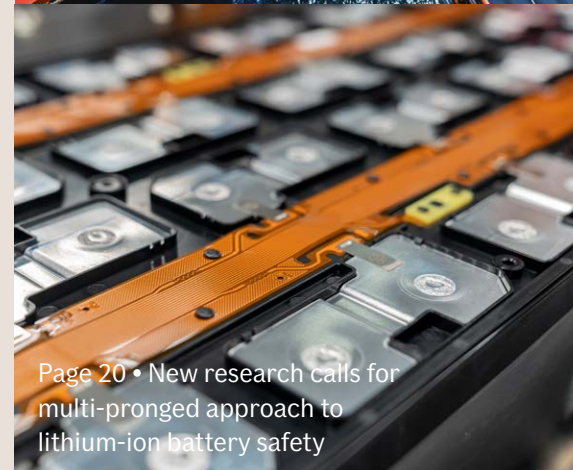
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EDITORIAL

Navigating traditional and emerging risks

While the insurance landscape is changing rapidly, many traditional risks remain ever relevant. Fire, flood, machinery breakdown, and US liability—these well-known risks continue to shape our clients' risk profiles. Yet, alongside these, the swift advance of technology brings new challenges: cyber threats, supply chain vulnerabilities, digital assets, and environmental exposures.

When facing multiple risks, the potential for losses increases. Therefore, proactive decision-making, scenario thinking, and business continuity planning are essential for effective risk management.

At If, we strive to maintain a balance by providing robust risk management services, as well as investing in research and development to understand, and to anticipate, tomorrow's threats.

We conduct regular surveys, ensuring that our solutions are not only comprehensive but also at the forefront of industry development. This commitment enables us to advise clients on best practices, share actionable insights, and help them stay ahead of risks—both old and new.

In this issue of Risk Consulting, we will take a deep dive into traditional risks, such as fire hazards and the importance of sprinkler systems.

This issue also features two inspiring client articles, providing insights into sustainability and highlighting the importance of conducting risk assessments.

Alongside traditional risks, you can also dive into articles on business interruption caused by geopolitical uncertainty, new research on lithium-ion battery safety, cybersecurity, and much more.

Finally, you can also read about the establishment of our Green Energy and Construction Underwriting unit, that will be steered by Sofia Hidén, who will be supporting our unwavering commitment to the green transition.

We cherish your engagement and input and encourage you to reach out to your contacts at If Insurance with your thoughts and feedback on this autumn issue. ●

Poul Steffensen
Head of Business Area Industrial



BUSINESS INTERRUPTION

Navigating global uncertainty in a shifting geopolitical landscape

Assessing the impact of geopolitics on business interruption risks

By Caroline Bødkerholm Ramsby, If

In today's interconnected and rapidly changing world, businesses face a multitude of risks that can impact or halt operations unexpectedly. These risks are no longer confined to traditional hazards such as fire, flood, or equipment failure. Rather, they are intricately tied to the complex web of global politics, international relations, and worldwide events. As a result, business interruption (BI) insurance has become a crucial risk management tool for companies. This article explores the evolving landscape of BI risks stemming from geopolitical and global events, and how If Insurance stands by our client's side in responding to these unprecedented challenges.

At its core, business interruption refers to any event or circumstance that disrupts a company's ability to conduct its normal operations. Typical triggers may include natural disasters, fire, or equipment malfunctions. However, in a world marked by increasing uncertainty, the spectrum of potential causes has broadened to include cyberattacks, pandemics, civil unrest, and the ripple effects of international conflicts.

Changes in global markets demand robust Business Continuity Planning. Business interruption risks affect different sectors and industries in different ways. In volatile

times, preparedness is therefore vital for companies, whether the risks emerge from geopolitical disputes, extreme weather events, or other causes.

Pekka Sarpila, Head of Property Risk Management Services at If, notes, "In our field work we have noticed that very often companies have business continuity plans in place, but that an impact analysis has not been done or the continuity plan has never been stress-tested in a crisis exercise. In today's businesses where supplier networks are complex, it is important to dig into these risks further to uncover the dependencies that may hit the business severely."

GLOBAL SUPPLY CHAINS AND GEOPOLITICAL SHOCKS

Modern businesses often rely on intricate global supply chains, sourcing raw materials from one part of the world, manufacturing goods in another, and selling to customers across continents. Any disturbance in this chain—whether due to international sanctions, export bans, or sudden border closures—can trigger far-reaching business interruption. The Russia-Ukraine war, for example, disrupted energy supplies and agricultural exports, sending shockwaves through industries worldwide. Similarly, tensions in the South China Sea could jeopardise shipping routes vital for the flow of goods between Asia and the West.

Geopolitical risks such as trade wars, embargoes, and diplomatic tensions can materialise overnight, leaving companies scrambling to adjust. These events may lead directly to business closures or indirectly to shortages, price volatility, and logistical delays—all of which can result in significant financial loss.

“We in the insurance industry have seen that companies who are well-prepared will be able to shift to alternative suppliers quickly, while others will struggle to continue operations,” highlights Pekka Sarpila.

PANDEMICS AND GLOBAL HEALTH CRISES

The COVID-19 pandemic highlighted the vulnerability of businesses to global health emergencies. Lockdowns, quarantines, and restrictions on movement forced companies to suspend or radically alter their operations for extended periods. From an insurance perspective, the pandemic spurred unprecedented debate over the scope of BI coverage, particularly whether losses stemming from government-ordered shutdowns or the absence of physical damage were insurable events.

CIVIL UNREST AND POLITICAL VIOLENCE

Political instability, protests, and acts of terrorism can also disrupt business activities. Even in countries with a long history of stability, sudden outbreaks of unrest can lead to property damage, curfews, or roadblocks that prevent employees and customers from accessing business premises.

CYBER THREATS AND DIGITAL WARFARE

As companies digitise operations, the risk of cyberattacks and hacking continues to grow. A ransomware attack can bring an entire company to a standstill, resulting in days or weeks of lost income. When such attacks are linked to geopolitical hostilities, attribution, and coverage become especially complex.

Strategies for companies to mitigate business interruption risk

Given the evolving landscape, companies must adopt a holistic approach to risk management that goes beyond insurance alone. Key strategies include:

- **Diversifying supply chains:** Sourcing from multiple regions or suppliers reduces dependency on a single geopolitical hotspot.
- **Scenario planning and stress testing:** Regularly evaluating how various crises would impact operations helps identify vulnerabilities and contingency plans.
- **Cybersecurity investments:** Strengthening digital defences and developing robust incident response plans can reduce the likelihood and impact of cyber-related interruptions.
- **Crisis communication plans:** Clear communication with employees, customers, and stakeholders is vital during disruptions.
- **Reviewing and customising insurance policies:** Collaborating with brokers and insurers to understand

exclusions, add necessary endorsements, and ensure coverage aligns with evolving risks.

To stay ahead of these BI risks, it is important to have solid Business Continuity Planning. Just as importantly, companies should evaluate scenarios and conduct regular reviews of potential risks that can impact their operations. Thorough planning will help ensure that solutions put in place are indeed fit for purpose, or at least as fit for purpose as possible. For example, having an alternative channel to reach your employees is vital when cyber criminals have compromised regular channels of communication.

The future of business interruption insurance

In an increasingly volatile world, the boundaries between traditional and non-traditional risks continue to blur. Transparent communication, ongoing risk assessment, and collaboration between public and private sectors are essential to building resilience.

In conclusion, business interruption is not a peripheral concern but a central element of corporate risk management. Geopolitical tensions, global events, and emerging threats have redefined the scope of interruptions and the insurance solutions required to address them. By understanding the evolving risk landscape and working closely with insurance professionals, companies can navigate uncertainty and safeguard their operations against the unforeseen.

At If Insurance, we help clients in their loss prevention work and collaborate closely with them, seeking to uncover potential risks that can interrupt or impact their daily operations. ●

Pekka Sarpila has been appointed as Head of Property Risk Management Services.



With an impressive 19-year journey at If Insurance, Sarpila brings deep expertise from roles such as Health and Safety Risk Engineer and leader of the Finnish Risk Management Services.

“Risk Management has many strengths to build upon,” he shares. “I’m particularly proud of our people, our experts. We have a strong Nordic culture and support each other across borders and around the world. These are important cornerstones for our future success.”

Looking ahead, Sarpila highlights the evolving risk environment: “We’re moving at the pace of our clients and society. The shift to green energy, for example – it is reshaping traditional industries and we’re ready to continue that transformation.”



GETTY IMAGES

CYBER

Discover how AI is changing the cybersecurity landscape

By Laura Hyytiäinen, If

Artificial Intelligence is rapidly reshaping the cybersecurity threat landscape, creating both new challenges and opportunities for large enterprises. As malicious actors embrace AI tools and large language models (LLMs), cyberattacks are becoming faster, smarter, and harder to detect.

This article explores how cybercriminals are using artificial intelligence to launch faster, more convincing, and harder-to-detect attacks—from deepfake scams to AI-generated phishing and malware. It also highlights why proactive defence strategies, including AI-powered security tools and employee training, are more critical than ever.

Read on to discover how speaking with your insurance provider before an incident occurs can make all the difference—and how your cyber insurance policy can support you when it matters most.

AI-powered threats: The new normal
Cybersecurity is no longer a matter of patching known vulnerabilities—it is about anticipating and countering adaptive, AI-driven threats. Threat actors now use generative AI to craft convincing phishing emails, automate voice-based scams (vishing), and send malicious SMS messages at scale. These techniques not only increase the frequency of attacks but also significantly improve their success rate.

Social engineering is now more precise and more scalable. An adversary with access to AI tools can simulate legitimate communication

I anticipate that cybercriminals will evolve their use of AI-bots to penetrate organisational defences much faster - within a few minutes - to steal data, or for national security purposes.

Peter Granlund, CISO at If

with astonishing accuracy—imitating voices, mimicking writing styles, and even generating deepfake videos in social engineering efforts.

This evolution demands a shift in how organisations defend their digital environments—traditional methods are no longer enough. Enterprises must invest in AI-driven defence mechanisms to counter these threats effectively.

Ransomware: Still a persistent and evolving threat

Despite the buzz around AI, ransomware has remained a cornerstone of enterprise risk in 2025. What has changed is the level of sophistication in how these attacks are executed. Attackers are using sophisticated extortion tactics—encrypting data, stealing it, and then threatening public disclosure, for example, if ransom demands are not met.

Large enterprises should make ransomware preparedness a priority. This includes conducting regular system backups, developing, and rehearsing incident response plans, as well as prioritising employee training to mitigate the impact of an attack.

Cybercriminals are leveraging AI to conduct more sophisticated attacks

Large Language Models (LLMs) enable anyone in the world to write personalised and well-written phishing emails, in almost any language. This is used to increase their credibility and make them more likely to deceive recipients. Protecting against AI-driven phishing will likely improve by using AI for defence filtering, however, the responsibility for safeguarding against this threat ultimately rests with us, the human workforce.

“In a recent phishing simulation by cybersecurity company Arsen, they used AI to craft emails and managed to trick 35% of the recipients”, explains CISO Peter Granlund at If.

Another area is writing malicious code. Large Language Models (LLMs) enable malware writers to create new malware, or transfer existing malware, to any exotic programming language – thereby avoiding detection, since most malware is written in C/C++ and is compiled with Microsoft’s

compiler. So, by wrapping malware code in an exotic language, the code can bypass signature-based detection.

“You may be surprised to learn that the AV-TEST institute registers approximately 450,000 new malware samples every day! This demonstrates that the malware writing industry is evolving into an underground industry”, Granlund comments.

The GPT-5, compared to the GPT-4.1, is especially good at coding, so with this continued rapid development we can expect cybercriminals to leverage new AI capabilities for malware creation in obscure or exotic programming languages to avoid detection. With the ongoing swift advancements in technology, it’s likely that cybercriminals will exploit these new AI features for more innovative and effective malicious activities, including cyberattacks and fraud.

“I anticipate that cybercriminals will evolve their use of AI-bots to penetrate organisational defences much faster - within a few minutes - to steal data, or for national security purposes”, says Peter Granlund.

AI-driven interactive attacks will grow in coming years

In Australia, research commissioned by MasterCard indicates that one in eight businesses in the country fell victim to deepfake scams in 2024. The research found that 20% of Australian businesses have received deepfake threats in the past 12 months, and of these, 12% fell for the manipulated content.

“With the rapid evolution of Large Language Models, I expect that we will see more interactive AI attacks, where AI without human intervention interacts with messages, voice and video in a way that will make it increasingly difficult for us humans to determine whether it is actually the intended person”, Granlund says.

He expects that within the next few years cyber defence software and services will have adopted AI-capabilities that enable organisations to act more predictively, quickly, automatically, with high precision, and with a low rate of false-positives to block cyberattacks at the early stages of the attack. Historically, this has required significant resources and customisation, so in this area, AI can be a real game-changer.

Important advice on how to protect your organisations

As AI becomes commoditised, the gap between offense and defence is narrowing. Malicious actors are rapidly integrating AI into their attack workflows, but many organisations lag in deploying AI-based defence mechanisms.

Forward-looking organisations are already adopting AI-driven threat detection, behavioural analytics, and anomaly detection systems to stay ahead. The resilience of every large enterprise’s cybersecurity posture is and will continue to be tested. The organisations that thrive will be those that shift from reactive to anticipatory defence models, treating cybersecurity as a dynamic, systemic business risk—not just an IT problem.

A wave of new legislation in the EU—including the Cyber Resilience Act and the Artificial Intelligence Act—is set to redefine compliance and risk expectations for large enterprises.

“These developments are positive from a risk governance perspective, as they elevate awareness and understanding of emerging cyber and AI risks”, says Ghita Meyer, Head of Liability and Cyber Underwriting.

“However, the real challenge lies in staying two steps ahead of an increasingly complex and fast-moving threat landscape. Regulatory compliance is just the starting point—true resilience requires strategic foresight”, she concludes. ●



Meet our experts

Peter Granlund
Chief Information Security Officer
(CISO)



Ghita Meyer
Head of Liability and
Cyber Underwriting

CLIENT

Advancing sustainable real estate through long-term partnering

By Caroline Bødkerholm Ramsby, If

Vastint, established in 1989, is an international real estate company with a mission to create long-term value by developing and actively managing offices, hotels, and residential properties across Europe. Operating in Belgium, France, Germany, Italy, Latvia, Lithuania, Netherlands, Poland, UK, Romania, with hotel assets in Denmark and Norway, Vastint aims to split its portfolio between 50% office, 25% hotel, and 25% residential buildings.

A partnership built on trust and expertise

The collaboration between Vastint and If Insurance spans over two decades, forming a foundation of trust and mutual understanding.

Martina de Ornelas, Vastint's Risk and Insurance Manager, highlights the value of this relationship: "If's risk engineers are involved early in relevant processes, and their recommendations are highly valued. This is highly appreciated because they know the business," Martina noted, emphasising that If's expertise is valuable for minimising risks and ensuring business continuity. She also points out that If's input supports Vastint's internal guidelines for development and property management, and that collaboration works hand in hand, with both companies often going beyond regulatory requirements.



Sustainability and risk engineering

Sustainability is at the core of Vastint's operations, and If's risk engineers play a key role in supporting this focus. Erik Van Der Heijden, Senior Risk Engineer at If, shares a concrete example from a project in Vilnius, Lithuania.

"Local authorities required a high insulation value for building panels, which led to the inevitable use of combustible insulation material. This posed a fire risk. However, If Insurance, together with Vastint and their fire safety consultant, developed a solution: the combustible material was encapsulated with non-combustible layers, ensuring fire safety without compromising on sustainability."

Erik adds, "We're also proud to see our work recognised externally—Vastint has featured If's risk engineering contributions in their sustainability report, highlighting the value of our collaboration in advancing climate resilience and sustainable real estate."

Martina also highlights the redevelopment project of Leeuwenburg, one of Amsterdam's largest buildings. Following a 2023 circular strip-out that dismantled 5.2 million kilograms of material, 97% of which was recycled or reused, Vastint Netherlands has now completed Phase 2 and will soon start Phase 3.

Innovative construction and safety practices

Most of Vastint's hotels are built using prefabricated cross-laminated timber elements, a process that is both sustainable and efficient. These timber hotels are equipped with advanced fire protection, including sprinklers, automatic fire detection, and fire walls between rooms, setting a new industry standard. Some of the new-built residential buildings use prefabricated concrete elements, also emphasising durability and safety.

Risk surveys and cross-border collaboration

Risk surveys are a cornerstone of Vastint's risk management strategy. Martina explained that in 2024 alone, 20 risk surveys were scheduled, providing actionable recommendations for safety and sustainability. Fredrik Holmqvist, Head of Property Risk Management Services Denmark and International at If Insurance, commented on the importance of these surveys, explaining how the company leverages cross-border expertise to support clients like Vastint: "We try to find expertise where it is available in our organisation. It really does not matter if it is in Germany or Denmark, or elsewhere. We find the best resources with the specific capabilities to best support our clients." This approach ensures that the customer is provided with tailored survey programs within wood construction, including PV Panels, and other sustainable building practices across Vastint's diverse portfolio.

Climate adaptation and certifications

Vastint is proactive in climate risk assessment, working with external consultants and aiming for net zero operational carbon by 2030. The company holds over 120 sustainability building certificates, including BREEAM and LEED. If supports Vastint in evaluating climate-related risks, such as flood exposure, and advises on safe installation of heat pumps and low carbon solutions. Martina de Ornelas expressed a desire for even more climate-related input from If, recognising the growing importance of climate risk in real estate.

Continuous improvement and looking ahead

Both Vastint and If recognise the increasing importance of climate risk, with unpredictable events like floods and wildfires posing new challenges. Vastint seeks more climate-related input from If to enhance their risk management and reporting.

Martina de Ornelas concluded by expressing her appreciation for the partnership and her optimism for the future: "I really enjoy working with If Insurance and I'm looking forward to the next 10 years or more."

If is proud to continue to support Vastint with tailored Construction All Risk Insurance coverage. The long-standing partnership between Vastint and If demonstrates how collaboration between real estate developers and insurers can drive sustainability, safety, and innovation. By integrating risk engineering into every stage of development, Vastint is setting benchmarks for sustainable building practices and climate adaptation in the European real estate sector. ●

Martina de Ornelas
Risk and Insurance Manager at Vastint

Erik Van Der Heijden
Senior Risk Engineer, If





CLIENT

Supporting the forest industry with physical asset valuation – Stora Enso's perspective

By Vilma Torkko, If

The forest industry works to answer global challenges such as rising raw material costs, stricter sustainability demands, and the need for new renewable products. Therefore, having a reliable method to keep insurance values up to date as well as acquiring new replacement values for physical assets like buildings, machinery, and equipment, is critical in an industry that is going through rapid transformation. For global players like Stora Enso, managing risks and ensuring that assets are correctly valued and insured at up-to-date replacement value has never been more important. One solution that has proven valuable is the AFRY Block Valuation model. Used

in partnership with If, it provides accurate and consistent replacement values in pulp & paper and sawmill industry facilities.

Navigating an industry in transition

The forest industry is facing a period of profound change. According to Sami Silvennoinen, Director of Risk Management at Stora Enso, several challenges stand out:

- High raw material costs — particularly wood
- Overcapacity in the packaging sector, putting pressure on margins
- Macroeconomic and geopolitical uncertainty, driven by trade tensions and shifting markets

- Need for higher value-added renewable products
- Sustainability pressures, including water usage, climate change and forests' role as carbon sinks

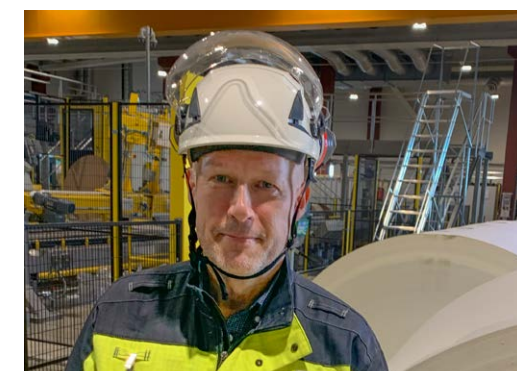
At the same time, opportunities are emerging: the replacement of fossil-based plastics in packaging, new recycling technologies, bio-barriers for liquid packaging, wood-based carbon materials for batteries and the increasing use of wood in high-rise construction. As Silvennoinen points out, "These advances are crucial in addressing sustainability demands while opening new growth areas for the industry."

Why accurate valuation matters

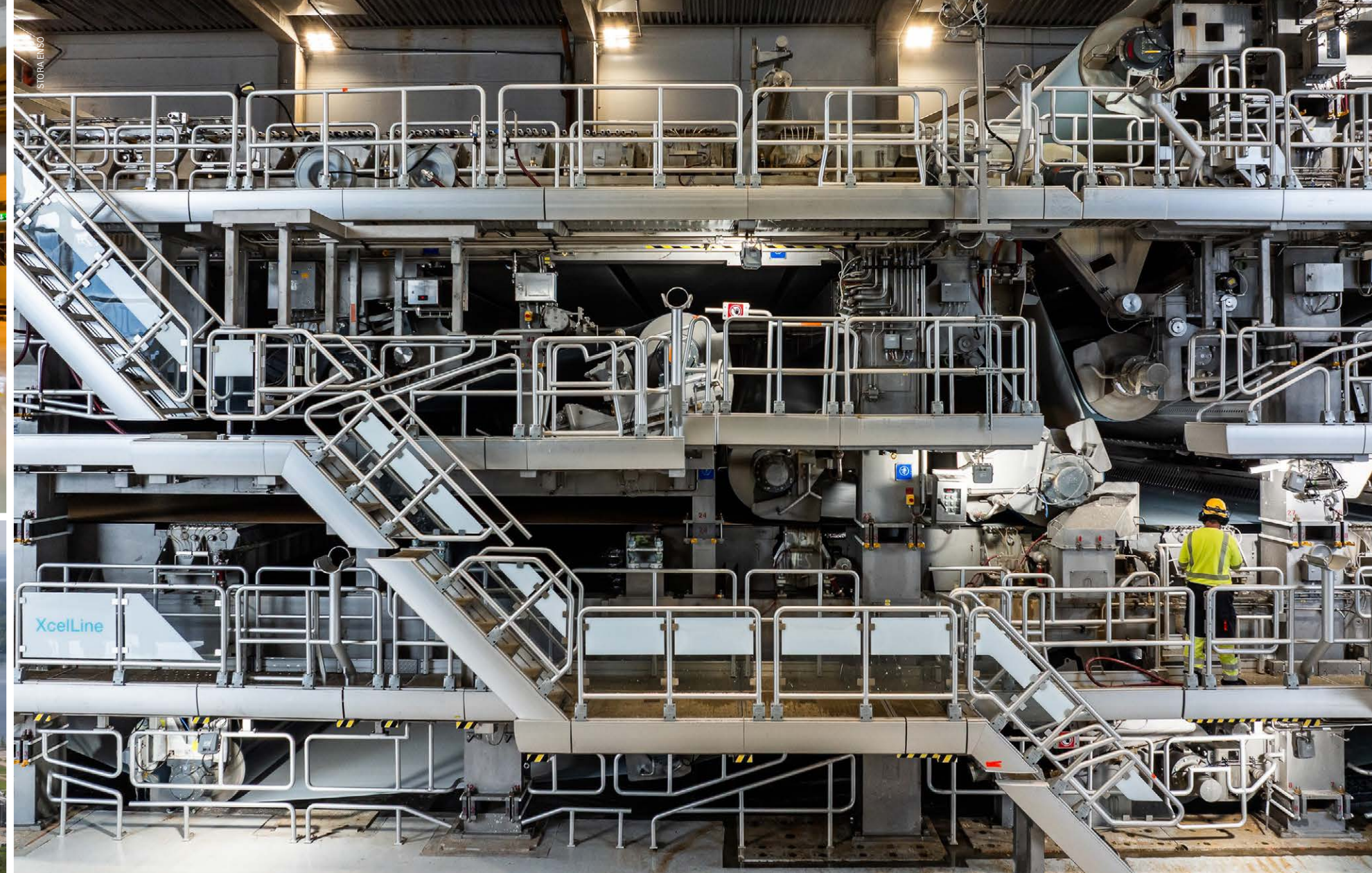
For a global company like Stora Enso, it is essential to manage insured values and property and business interruption insurance coverage consistently across all business areas and units. The AFRY Block Valuation tool provides a standardised, reliable basis for calculating replacement costs of mills and production facilities.

Silvennoinen highlights several clear benefits of using AFRY Block Valuation. One of the most important is consistency across the

group, as the same tool is applied in all Stora Enso business areas except corrugated board, ensuring comparability and reliability of values. It also provides security for insurers, who can trust that property sums insured for physical assets are based on robust, industry-standard calculations. Another strength is the integration of new investments: major CapEx projects can easily be added into the valuation process by updating increase in design production capacities or changes in main equipment and machinery or buildings, avoiding gaps or outdated figures.



Sami Silvennoinen,
Director of Risk
Management
at Stora Enso



Finally, the tool supports long-term planning, as the replacement values serve as a base in Stora Enso's Asset Mapping tool for strategic asset replacement investment planning.

With property assets valued at several billion euros through the Block Model, the scale is considerable. "Without the Block Valuation, we would have to rely on costly appraisal companies every few years or maintain manual updates in spreadsheets," Silvennoinen notes. "It would mean a lot of manual work and follow up of several induct cost indices without this valuation method. In fact, many other industries – such as steel, oil, and others - have observed that the forest industry has a more systematic way of maintaining property insurance values."

Continuous improvement needed

Although the AFRY Block Valuation is highly effective, Silvennoinen also sees areas where it could be further developed. One improvement would be in the templates used

to collect production capacity, new equipment, and machinery data from the production units. Progress has already been made with non-calculating block spreadsheets, which makes it easier to request and share updates, but there is still room to streamline the process further. Another area is the delivery speed of updated cost indices from AFRY, which often lags behind and can delay the reflection of current values. This is essential, especially at the end of the year, as Stora Enso's property renewal date will be 1 January and new property values should be updated at the latest during November. Silvennoinen also emphasises the need for more trained risk engineers across different markets, ensuring that the service can be provided consistently. Finally, he highlights the importance of clearer guidance on manual adjustment factors — for example, how to take into account spare parts, infrastructure, local labour or the share of local sourcing when applying the model.

Looking ahead

As sustainability regulations tighten — from the EU's Packaging and Packaging Waste Regulation (PPWR) to the Deforestation Regulation (EUDR) — accurate valuation and risk management are becoming even more critical. Clients are supported with tools, expertise and training to meet these evolving needs.

Silvennoinen reflects on his long history with the tool, dating back to the late 1990s when he joined Industrial Insurance (Teollisuusvakuutus Oy) in Finland as a young and eager engineer.

"The Block Valuation has been an integral part of how we manage our assets for decades. It gives us confidence that our insurance values are correct and that we are well-prepared for the uncertain future." ●

Why use the AFRY Block valuation?

- Correct property insurance values → no underinsurance clause applied in the case of loss
- Smoother claims handling
- Less administration for clients
- Automatic adjustment with global machinery indices, exchange rates, and other local cost levels
- Supports long-term investment planning

RISK MANAGEMENT

New research calls for multi-pronged approach to lithium-ion battery safety

By Caroline Bødkerholm Ramsby, If

If has partnered with Research Institutes of Sweden (RISE) on “COMBAT: *Compartment Explosions Induced by Batteries*,” a project focusing on the risks and means to prevent explosions caused by lithium-ion batteries. The project aims to understand and reduce the dangers associated with these batteries, particularly in enclosed spaces such as ships, where flammable gases can build up.

At If, we aim to support our clients in the shift towards low-emission technologies. By supporting various research projects, we deepen our understanding of new technologies. This approach also enables us to ensure that while technological solutions advance rapidly, we stay abreast of evolving risks, which can often progress faster than historical data and legislation.

What is a lithium-ion battery?

Lithium-ion batteries are used widely in devices and machinery, powering the ways we live, work, and connect. Because they can be found everywhere, irrespective of industry, the number of lithium-ion battery-operated devices in households and businesses worldwide is countless.

Lithium-ion batteries power laptops, mobile phones, backup power systems, electric bikes, and scooters. On a larger scale, electric cars, forklift trucks, and Battery Energy Storage Systems (BESS) also rely on lithium-ion technology, and demand for these solutions is projected to increase seven-fold between the years 2022–2030.

Since 2020, the number of lithium-ion battery fires in Denmark has nearly tripled, according to new data from [Danske Beredskaber](#)¹⁾ and [Beredskabsstyrelsen](#)²⁾. Last year alone, 143 fires were linked to batteries in mobile devices, e-bikes, scooters, and gardening tools.

According to Andreas Kråling, Head of Property Risk Management, Sweden, “Batteries come in many formats, sizes and chemistry and not all are the same – but many add risks and can cause fast-developing fires. And smaller is not necessarily better from a risk standpoint as the small ones often lack a Battery Management System.”

Harnessing renewable energy with BESS

BESS is increasingly being utilised to store energy generated from renewable sources like solar and wind. This technology allows for the efficient management of energy supply and demand, ensuring that excess energy produced

during peak times can be stored and used when production is low. BESS also provides stability to the electrical grid by balancing fluctuations and preventing outages.

Contributing to reducing greenhouse gas emissions, BESS boosts the usability and enables further growth in the installation of clean energy. Energy storage helps to balance the risks relating to inconsistent energy production from wind and PV panels. Its integration into various sectors — including residential, commercial, and industrial applications — is paving the way towards a more sustainable and resilient energy future.

Transporting lithium-ion batteries on ships poses risks

Lithium-ion batteries are integral to a wide range of devices and machines across industries, resulting in a significant volume of shipments. However, transporting lithium-ion batteries on ships poses significant risks, including fire and explosion hazards.

“Thermal runaway, where one failing cell can cause adjacent cells to fail, can lead to intense fires. Improper handling and packaging can compound these risks, and the limited firefighting resources on ships make controlling such fires challenging,” explains Mike Barry, Risk Specialist at If.

“Additionally, fires involving lithium-ion batteries can release toxic gases, increasing risks to the crew and posing environmental hazards. Lately, we have seen a higher number of fires onboard ships due to improperly declared containers as well as EV automobiles on Roll-on/Roll-off (RoRo) vessels. It is of utmost importance that shippers know what they are transporting and that they advise shipping companies accordingly. Even limited quantities of lithium-ion batteries can pose risks if not correctly reported,” says Barry.

Lithium-ion battery fire incident at Zeebrugge Port

According to World Cargo News, a lithium-ion battery fire took place on April 16, 2025, when a blaze broke out on the RoRo ship MV Delphine, while it was berthed at logistics solutions provider CLdN’s terminal in Zeebrugge, Belgium. The

incident, which started on a cargo deck carrying approximately 60 electric vehicles (EV) and 40 conventional cars, caused significant damage.

Recent reports state that the fire did not originate in an EV, however, electric vehicles were involved as it progressed. The fire triggered the vessel's CO₂ fire suppression system, and local firefighters quickly evacuated the crew. Four tugboats equipped with water cannons were deployed to cool the ship's hull. Despite the intense heat and challenges brought by burning lithium-ion batteries, the fire was extinguished using a combination of CO₂, nitrogen, and external cooling.

Barry notes, "The latest industry guidelines, from Vehicle Carrier Safety Forum³⁾, recommend operators respond by promptly evacuating, shutting down ventilation, and starting CO₂ flooding very early in the firefighting process. Putting out fire using CO₂, nitrogen, and external cooling is effective in this scenario because CO₂ and nitrogen displace the oxygen that is essential for combustion. External cooling helps reduce the temperature of the burning material, preventing re-ignition."

- Safety considerations**
- The use of lithium-ion batteries presents unique risks due to several, generally known factors, including the following:
- **Thermal runaway** is a self-sustaining, uncontrolled increase in temperature within a battery cell, leading to fire or explosion. A battery cell that is damaged or exposed to intense heat can trigger thermal runaway.
 - **Confined spaces** and enclosed compartments where flammable gases can accumulate from the batteries, and the gas buildup can lead to explosions if ignited.
 - **Fire suppression challenges** arise when putting out BESS fires, as the unique nature of lithium-ion batteries can present significant difficulties. Traditional firefighting methods may not work, and specialised solutions such as water-based or gaseous suppression systems are needed to manage the fire and reduce explosion risks. These complexities make fire suppression a demanding task that requires careful planning and advanced technology.

Thermal runaway, where one failing cell can cause adjacent cells to fail, can lead to intense fires.

- COMBAT research findings**
- The COMBAT study⁴⁾ highlights the importance of using multiple strategies to effectively manage the risks of BESS explosions. Below are some mitigation strategies that were presented in the study:
- **Ventilation:** Helps reduce gas concentration but does not eliminate explosion risks. Different levels of ventilation – basic, preventive, casualty – are recommended.
 - **Deflagration panels:** These are designed to lessen the impact of explosions, with effectiveness dependent on covering sufficient surface area.
 - **Fire suppression systems:** Water-based systems provide long-term cooling and can reduce explosion pressure. Gaseous systems can help if gas concentration is maintained at a sufficiently high level.

Conclusions and future research

Advancements in lithium-ion batteries and BESS are paving the way for a more sustainable and resilient energy future. Nevertheless, as we embrace these technologies, it is crucial to remain vigilant about the associated risks. Ongoing research, such as the COMBAT project, highlights the importance of understanding and mitigating the dangers of lithium-ion batteries, especially in confined spaces.

Investing in research and developing comprehensive safety strategies can optimise the advantages of lithium-ion batteries while controlling potential hazards. As we move forward, continued collaboration and innovation will be the key to safely integrating these technologies across industries and in our everyday lives. ●



Meet our experts

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Companies often require an uninterrupted power supply, which is all the more reason to focus on the safety issues relating to electrical systems.

LOSS PREVENTION

Electrical fire risks in the spotlight

By Kristian Orispää, If

Companies and society in general have a massive reliance on electricity and reliable, continued supply of power. This is why companies need to have a continued focus on preventing losses from potential electrical risks. A systematic and integrated approach that combines technology, compliance, training, and preparedness is always required. By prioritising electrical safety, companies can better safeguard their operations.

Electricity is widely recognised as a fundamental pillar supporting global business operations and essential to the functioning of modern societies and communities. Despite the near-constant availability of reliable power at the push of a button, public awareness and understanding of electrical risks remain comparatively limited.

In the industrial space, electrical risks are better understood since electrical failures can pose significant threats to large corporations. For example, a blackout or brownout can impact employee safety but also operational continuity, financial stability, and reputation. In short, few companies can operate without electricity.

Power outages remain a real threat to businesses, leading to potential business interruption. Often the risks of an abrupt blackout or brownout relating to production may be known, yet preparedness measures may be insufficient.

Minimising electrical accident risks

According to Jussi Lehtonen, Loss Prevention Manager at the Safety Academy, “There are many issues to look out for when looking at electrical safety and related problems. Often accidents and incidents can occur following a lack of planning and failures in the flow of information between different parties involved. Separate teams are working on the same equipment, for example, the electrical equipment is owned, operated, and maintained by people who are not communicating with each other. There must be overall responsibility and ongoing communications on equipment that carries electrical fire risks.”

“Other issues can include electrical compatibility, for instance, when combining systems that have been built in different decades. To avoid this risk, the purchasing department needs to truly understand how their new purchases will work with existing equipment.”

According to If experts, the number of electrical fires today continues to decrease year on year.

Proactive measures are essential to minimise the risk of electrical accidents. This includes knowledge-sharing among colleagues and between stakeholders about any updates, changes, and issues with these systems. For example, having proper documentation on quality and maintenance-related observations and actions taken is vital.

Compliance goes a long way

To ensure a secure working environment, safeguard assets and personnel. Be sure to utilise certified professionals to conduct regular inspections and maintenance of electrical systems to uncover potential hazards such as outdated wiring or overloaded circuits, catching these issues before a fire occurs.

Although it is well understood, in practice it needs to be reiterated that companies must always comply with regional and international electrical safety standards, such as ISO 45001 or NFPA 70E. Upgrading equipment to meet these standards reduces the likelihood of electrical failures.

Your employees play a critical role in electrical safety. Comprehensive training programmes allow employees to recognise electrical hazards, take the necessary action, safely handle equipment, as well as respond effectively in emergency situations, significantly reducing the risk of accidents and incidents.

Put your emergency response plans into practice regularly. Conducting regular drills will help ensure rapid and co-ordinated responses to electrical incidents, mitigating potential losses.

Having accurate values insured and reviewing policies regularly will protect clients against potential electrical damages and business interruptions.

Smart monitoring systems increase safety and efficiency

With the right smart monitoring systems, companies can quickly assess electrical loads, detect faults, and optimise energy usage. Today, technology provides vital insight into detecting potential issues, not only assisting in risk prevention but also helping to enhance overall efficiency.

In this context, intelligent surveillance systems monitor the quality of the customer's electricity network, conducting real-time analysis of the electricity network.

By monitoring the quality of the electricity network, it is possible to react to any changes that the above-mentioned variables may cause. For many such variables, especially in production plants, customers can create triggers on parameters that activate an alert message, sirens, or alarm when the set limits are exceeded or are not achieved.

With these alerts, clients benefit by having time on their side for a more in-depth examination of what could be causing underperformance. This is of course relevant in cases where the process includes an operating model for fixing recognised deficiencies. The aim in this example is to be prepared to find the root cause in time, before production is interrupted. Smart monitoring systems aim to prevent losses due to equipment breakdown and mitigate fire risks to help prevent business interruption and even loss of life.

Usually, by measuring key variables, smart monitoring systems can help reduce unnecessary maintenance costs and qualitative deviations in production, such as repeated repairs of equipment breakdowns or insidiously increasing energy bills, etc.

Electrical fires are increasingly rare due to increased preventive maintenance customers have been doing to avoid interruptions in their production and greater focus on electrical fire prevention. Today, one could argue this is an integral part of a company's risk management.

If Safety Academy in Finland has data to support this statement, based on the frequency of finding electrical faults during site inspections. Jussi Lehtonen states that company management needs to understand electrical fire risks, as their economic impact is often underestimated. For example, he notes that close calls and small fires are often not recorded, which is why there is little data on how many 'near misses' have occurred.

Over 5,000 inspections in Finland

As early as 2008, If Insurance experts began recommending that clients conduct thermal imaging of their switchboards, utilising certified expert partners. Over the years, this advice has been proven to be an effective means of detecting hidden risks of electrical fires in commercial properties.

In 2008, there were, for example, no certified thermal imaging technicians for electrical equipment, and the technology was utilised primarily for research purposes. "At that time, it was recognised that the technology could be applied to electrical equipment, helping to locate the fire risks of electrical switchboards," Lehtonen explains, "However, there was little regulation in place, so operators in the field varied a lot due to the lack of ground rules."

"From 2011 onwards, If Insurance took a significant role in the development of this standardised operating model, and following our pilot study in 2013, If established its own Loss Prevention Unit, called If Safety Academy, which has currently carried out more than 5,000 electrical fire risk surveys in accordance with the If standard. This includes, for example, thermal imaging of more than 45,000 electrical distribution boards and statistics on the deficiencies observed in them."

Nevertheless, there is a strong emphasis on the safety risks observed in sensory examination and the understanding of potential human factors, as the goal is always to create a safe operating environment and electrical safety culture that is present every day in the work environment. ●

Spreading the word

In 2023, the If Safety Academy in Finland celebrated its 10th anniversary. Today, the team's expertise is utilised across a broad range of tasks, such as in the training of rescue authorities, participating in and contributing to numerous studies aimed at developing electrical safety, as well as various other engagements with stakeholders across different channels.

However, customers – and the long-standing loss prevention co-operation with them – are still at the core of the team's operations. Utilising a systematic operating model, the causal link behind the interruption of business operations due to electrical fires, or in other words, the factors leading to an increased fire risk due to the failure of electrical equipment, is becoming more widely understood and people are better prepared for incidents and accidents than before.

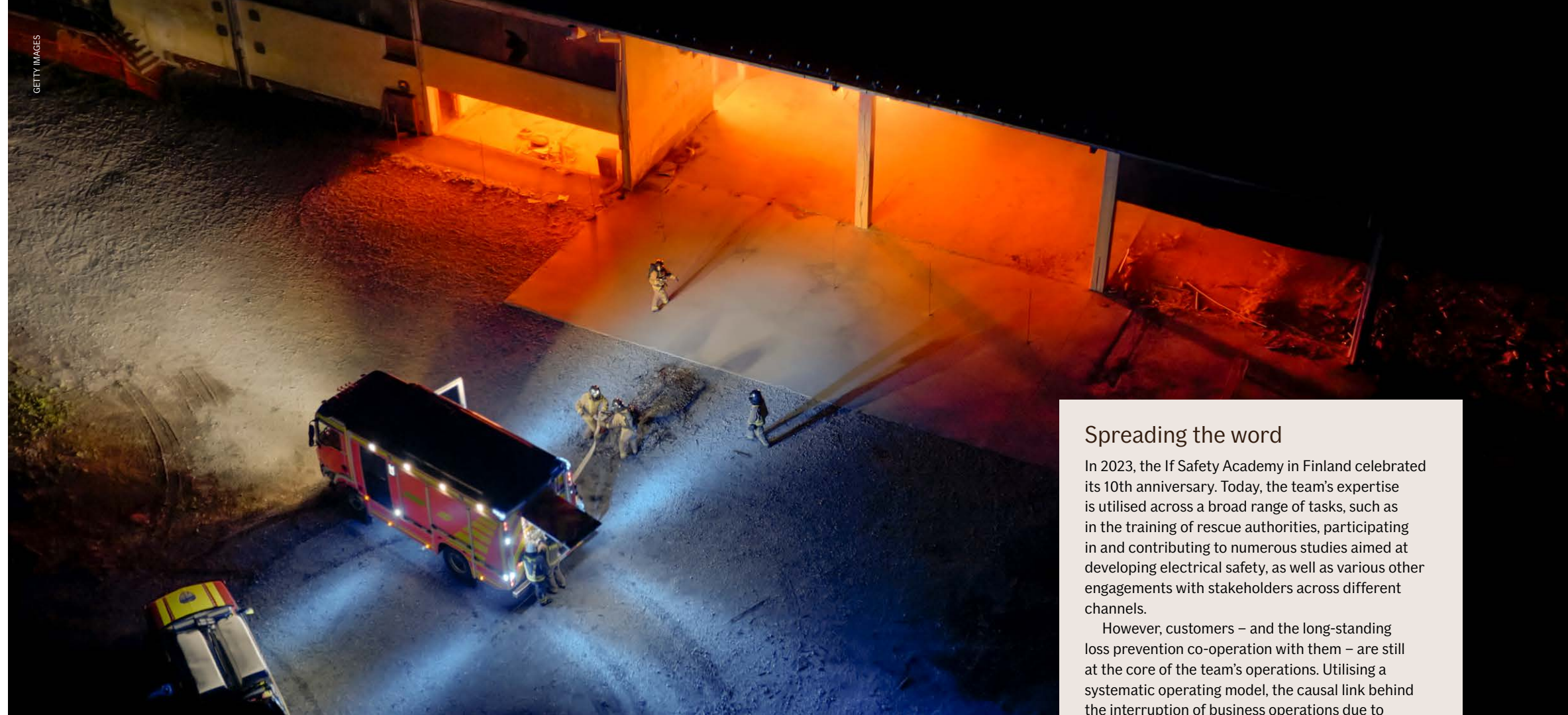
"At present, our database contains more than 5,000 inspections, with observations made surveying more than 45,000 electrical switchboards. Of these observations, as many as 3,783 were identified as severe cases requiring immediate repairs. A further 13,071 demanded immediate attention, while 19,903 were observed to require corrective measures in the next service", Jussi Lehtonen explains.

He continues, "I cannot help but mention that it is no coincidence that electrical fires, at least in If Finland's customer base, have clearly decreased, and of course the impact is much wider than just for our own customers. This all points to increased awareness on the risks relating to electrical systems and equipment as well as investments made into smart monitoring, which could mean that senior decision-makers and stakeholders have understood that electrical safety and monitoring must be a priority at the highest level."



Meet our expert

Jussi Lehtonen
Loss Prevention Manager



RISK MANAGEMENT

Mitigating solar panel installation risks



By Antti Hirvonen, If

This article is based on Antti Hirvonen's thesis (2025) for If, titled "Improving risk management practices on rooftop-mounted solar photovoltaic projects."

As solar photovoltaic (PV) systems become a key solution for global energy and climate needs, their rapid adoption introduces new safety risks. The most serious is fire from rooftop solar installations, making strong risk management essential as deployment accelerates.

The demand for electricity is rising rapidly, and while today's global energy economy remains largely reliant on fossil fuels, climate concerns and resource depletion are driving economies towards renewable energy solutions. Because its resource potential is vast and widely available across the globe, solar energy is a highly attractive source of electricity. Among the technologies for harvesting solar energy, PV technology has developed rapidly and reached technological maturity. In addition, solar PV has gained commercial acceptance and is currently one of the most promising and fastest-growing renewable energy technologies available.

A key trend in the energy system is the movement from centralised generation at large-scale plants to more decentralised electricity production. Solar PV systems are particularly well-suited to decentralised energy generation and their modularity, ease of installation, and accessibility for individual users have led to widespread adoption. Rooftop-mounted systems are gaining popularity as a way to extract solar energy, mainly because of their fast installation and the fact that rooftop solar doesn't take up external land.

Rooftop solar potential and growth

According to recent findings, rooftop PV systems in the EU could potentially generate up to 680 TWh of electricity annually, equivalent to approximately 25% of the EU's current electricity consumption. Significantly, two-thirds of this potential generation could be achieved at costs lower than current residential tariffs (Bodis et al. 2019). This highlights not only the environmental but also the economic feasibility of rooftop solar PV adoption on a large scale.

While Solar PV utilisation is expected to increase significantly in the future, driven by both market demand and policy initiatives, the deployment of rooftop-mounted solar PV is not without risks.

Fire risks in solar PV systems

Given its serious consequences, fire is the main property risk of roof-mounted solar panels. When installing solar PV on a roof or facade, new fire factors need to be addressed.

The number of fires caused by solar PV systems is increasing as the number of installations surges. Several serious fires related to photovoltaic systems have been recorded in both the United States and in European countries.

The growing trend of fires can be seen in the recorded fire rates in Italy and the Netherlands. As of 2016, 1,600 fires were recorded in Italy, 461 of which had occurred in 2015 (Cancelliere 2016). In the Netherlands, the number of fires had doubled by 2020 compared to the total number of fires in the previous two years (Mohd Nizam Ong et al. 2022).

Installation errors as a major hazard

Generally, solar panels are subject to the same ignition sources as other types of electrical installations. The most common underlying causes of fires are installation errors, followed by the poor quality of the PV modules. Statistically, around 36% of fire events were caused by installation errors, while 15% resulted from poor-quality PV modules (Wu et al. 2020). Additionally, a significant percentage of PV-related fires are caused by the overheating of photovoltaic system components, a hot spot, or direct current (DC) arcing. When installing solar panels, the planned life cycle is usually reasonably long, at about 20–30 years, and the risks of solar panel failure and fires increase as the system ages.

Studies conducted by Clean Energy Agencies and Tukes indicate that installation errors are a frequent cause of fires, and the number of installation errors in completed installations is high. Clean Energy Associates (CEA) reports that over 97% of 600 reviewed installations exhibited major safety concerns (CEA 2023). Tukes states that 89% of the installations had at least one deficiency (Tukes 2023).

The most common faults identified by CEA were grounding issues, followed by damaged modules and cross-mated connectors. In Tukes' study, the most serious errors fell into three categories: inadequate commissioning inspections or their mis-documentation, incorrect cable installations violating standards, and failure to comply with manufacturer instructions.

Fire risk awareness and risk management are critical

Awareness of fire risks and good risk management practices are essential for the safe operation of PV panels on buildings. Having a sound understanding of fire risks is critical to decision making when installing solar PV.

Risk management is the process of making decisions intended to maintain the ongoing operations of a company and ensure the safety of its personnel. By definition, it includes all activities conducted by the company to avoid and minimise risks and their potential negative consequences. In practice, risk management is implemented by all personnel in various situations where certain risks are assessed, planned for, and addressed. Effective risk management involves proactive, deliberate, and systematic actions.

An important part of risk management implementation is risk assessment, which involves identifying and evaluating risks and their effects and probabilities. The aim of risk assessment is to identify all risk factors, analyse their severity and probability, and decide the acceptable level of risk. When carrying out a risk assessment, it is important to define scope. For example, roof-mounted solar power plants present a broader range of risks than ground-mounted systems. Risk assessments must address the roof’s load-bearing capacity, fire hazards, and environmental factors like snow.

It is also essential to evaluate the possible overall effects of a fire. When solar panels catch fire on a roof, it not only leads to a reduction in energy generation – there is also a serious chance of severe property damage and business interruption.

Fire consequences and building materials

Building materials play a significant role when assessing the fire risks of solar PV. If solar panels are installed on a roof with combustible insulation, the potential consequences of a fire are significantly more severe than with installation on a non-combustible roof. In cases where a fire spreads from the solar panels to a combustible roof, the damage could be extensive. In addition, when solar PV is installed on the roof, fire dynamics might change. Tilted panels trap heat under the panels, increasing the speed at which fire spreads.

Firefighting considerations

When installing and designing solar PV, the impacts on firefighting must be taken into consideration. The presence of Solar PV on a rooftop will affect firefighting efforts, since the risk of electric shock cannot be totally mitigated, and PV systems can potentially obstruct fire clearance or extinguishing water. Adequate access pathways are necessary to enable fire brigade operations on the roof. Comprehensive risk assessments are required when considering building safety. A fire risk assessment should address risks related to solar panels, possible effects on firefighting procedures, and consequences for property damage and business continuity.

Ownership and responsibility

To manage and assess risks effectively, it is important to define who has the overall responsibility—that is, the individual or group who holds the duty and authority to make decisions implementing risk management and assign resources to it. For rooftop-installed solar panels, there

are different forms of ownership. Either the property owner owns the solar power plant installed on the roof or, alternatively, a third-party energy provider owns it and sells the generated electricity to the property owner under a sales contract.

Outsourced energy production seems to be increasingly popular. Since the solar panel field is physically part of the property, regardless of ownership, it is important that the building owner remains responsible for the associated risks throughout its lifecycle, starting from installation and continuing through operational use. Only the property owner has the expertise and interest to analyse the property’s risks and examine the implications of the solar panel installation as part of a larger whole. If the risk is not owned by the property owner, it becomes difficult to initiate comprehensive risk management measures and address the property’s exposure effectively.

Towards a standardised approach to risk management

There are several different standards that describe the process of risk management and its stages. In addition, a wide range of methods has been identified for implementing them.

In conclusion, when implementing risk management—particularly in the context of projects—it is important to note that project size does not restrict the adoption of a documented, standardised risk management procedure. A standardised process can be applied to both operational projects and company strategic decisions. A standardised process for risk management related to solar PV installations should be created. Over time, companies are expected to

conduct a considerable number of solar panel installation projects. By following this risk management framework, risk assessments can remain consistent across projects. The process guidelines should outline instructions and best practices, specifying which elements of risk management to prioritise when undertaking solar PV installations.

A standardised approach to risk management and thorough risk assessment can lower the chances of fire incidents and limit potential damages, helping ensure that rooftop PV remains an option in the global energy transition. ●

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First and foremost, the primary function of automatic sprinklers is to protect lives and property by controlling or extinguishing fires before they can spread. A properly installed and well-maintained sprinkler system can significantly reduce the risk of fire-related injuries and fatalities. In the event of a fire, sprinklers can activate quickly, providing immediate suppression and allowing people more time to evacuate safely.

Additionally, sprinklers help minimise property damage. By containing a fire to its point of origin, sprinklers prevent the fire from spreading to other areas, thereby reducing the overall damage to the building and its contents. This can result in substantial cost savings on repairs and replacements.

Moreover, having a reliable sprinkler system can lower insurance premiums. Many insurance companies offer discounts to properties equipped with automatic sprinklers,

as they are considered a proactive measure to mitigate fire risks, leading to significant long-term savings for property owners.

Proper installation and regular maintenance also ensure the system's reliability. Over time, sprinkler components can become damaged or clogged, reducing their effectiveness. Routine inspections and maintenance help identify and address these issues before they become problematic. Proper installation is equally important, as incorrect installation can lead to system failures during a fire.

In summary, maintaining and ensuring the proper installation of automatic sprinklers is essential for safeguarding lives, protecting property, reducing insurance costs, and ensuring the system's reliability in the event of a fire.

RISK MANAGEMENT

Sprinklers prevent losses

By Kristian Orispää, If

Ensuring that your automatic sprinklers are correctly installed, well-maintained, and in working order is crucial for several reasons. Protect your employees and minimise property damage with well-fitted and regularly maintained sprinkler systems.

Maintaining your sprinkler system

To ensure that your sprinklers are in working order, here are some key steps to follow:

1. Inspect the sprinkler heads
2. Check the sprinkler valves
3. Inspect the sprinkler piping
4. Test the sprinkler system
5. Reprogram the sprinkler control panel
6. Regular maintenance

Begin by inspecting the sprinkler heads to ensure there's no damage or obstruction. Make sure each head is intact and free from dirt, debris, or weeds, and check for clogs in the nozzles that could block the flow of water.

Next, turn off the main water supply to examine the sprinkler valves. Confirm that all valves are in good condition, and there are no leaks or blockages. If any damaged valves are identified, replace them as needed.

Take time to inspect the sprinkler piping as well. Look for any signs of wear, tear, or blockages, paying special attention to bends and joints where damage can be more likely. Replace any broken pipes immediately to maintain optimal function.

After these checks, test the sprinkler system by turning on each zone individually. Watch for water leaks or other issues and verify that every area is receiving enough water. If coverage is uneven, adjust the sprinkler settings to improve water distribution.

If control panel settings were changed during the inspection and tests, reprogram the control panel to save any adjustments made. This will make future troubleshooting or modifications easier.

Finally, it's important to conduct regular maintenance checks. Inspect the system periodically for leaks, clean the nozzles, and adjust the sprinkler heads as needed to ensure your system continues to operate correctly.

By following these steps, you can ensure that your sprinklers are in proper working order and provide adequate coverage for your property.

Fighting fires

In the public domain, multiple examples of prevented losses can be found. These are cases where automatic sprinklers have successfully prevented fires from spreading. Below are just a few examples where automatic sprinkler systems have successfully contained a fire, buying valuable time for people to get to safety, as well as for firefighters to arrive on the scene.

Recent examples of fires that were successfully controlled or prevented by automatic sprinkler systems in the Nordics include:

1. **Stockholm, Sweden:** In March 2025, a fire broke out in a commercial building in Stockholm. The building's sprinkler system activated and successfully contained the fire to the room of origin, preventing significant damage and ensuring the safety of the occupants.
2. **Helsinki, Finland:** In April 2025, a fire in a residential building in Helsinki was quickly controlled by the building's sprinkler system. The system activated promptly, limiting the fire's spread and minimising damage to the property.
3. **Copenhagen, Denmark:** In May 2025, a fire in a hotel in Copenhagen was effectively managed by the hotel's sprinkler system. The system activated and contained the fire to a single room, preventing it from spreading to other parts of the building.

These examples highlight the effectiveness of automatic sprinkler systems in preventing fires from causing significant damage and ensuring the safety of people in various types of buildings. ●

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Short news



IF NORDIC HEALTH REPORT

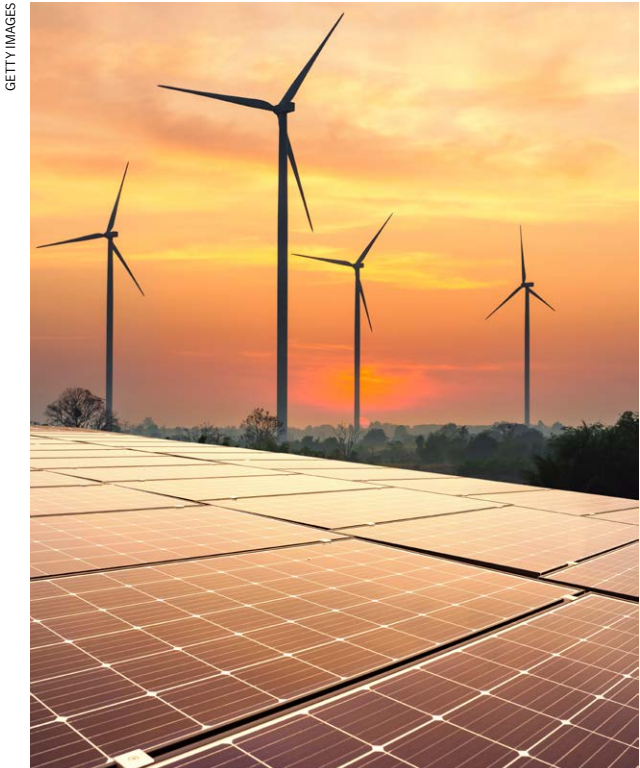
This is the third year If has published the Nordic Health Report. In 2025, the report is based on a survey of 4,232 people aged 18+ across the Nordics.

The report is released in three parts:

1. Perceived Stress
2. Workplace Health and Sustainable Working Lives
3. The Social Contract – navigating change, supporting security.

The survey gives insights on the public healthcare system, preventive health efforts, and personal insurances. The results show that:

- 43 percent of the Nordic population trust the public healthcare system to provide quick help when they need non-acute care, 45 percent do not.
- 4 out of 10 are willing to pay extra for health services that could prevent illness.
- Almost 6 out of 10 think that personal insurance will become more important in the future.



SOFIA HIDÉN IS OUR NEW HEAD OF GREEN ENERGY AND CONSTRUCTION UNDERWRITING

Sofia Hidén began her insurance career as a risk engineer and gradually moved into strategic and leadership positions, both within insurance companies and as a client to If Insurance in the pulp and paper industry.

As the green transition accelerates across industries, Sofia will play a key role in shaping how If supports innovation, resilience, and responsible growth.

"My mission is to empower our clients to thrive in the evolving energy landscape—while making a significant contribution to a more sustainable future", says Sofia.



SPACE RISKS IN FOCUS

Modern society is fundamentally dependent on electricity, supporting sectors ranging from communications and industry to healthcare. Considering this dependency, how well does humankind understand the risks and potential impacts of severe space weather events or human-induced space risks?

From blackouts caused by solar flares to satellite interference that compromises telecommunications, both natural and human-induced space risks are expected to escalate, posing emerging risks that are not yet fully understood.



Download the latest report from CRO Forum's ERI working group to learn more about Space risks.



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