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Beyond the Blaze: Why Casualty Risk in Clean Energy Is Entering a New Phase

As the renewable energy market matures, so too does its risk profile. Casualty exposures, once an afterthought to property or construction cover, are emerging as a defining concern for developers, underwriters and investors alike – particularly in the U.S.

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Casualty exposure is escalating

Historically, third-party casualty claims in renewables were driven by fires, turbine blade failures and non-owned auto incidents. Now, the risk landscape is shifting dramatically.

With the increasing deployment of renewable energy into population centers – **commercial and industrial (C&I) solar installations increased by over 35% year-on-year in 2024** – high-voltage infrastructure is now placed above shopping centers, schools and distribution hubs. With storage units, smart inverters and power optimizers all concentrated on a single site, there are more ignition sources and more points of failure. And while solar power fire claims remain relatively rare when compared to overall installed capacity, those that do occur are increasing in severity due to the proximity of neighboring property and infrastructure.

A rooftop fire caused by a fault in solar equipment, or because of negligent maintenance, which spreads to the buildings below and adjacent, will see multiple casualty claims relating not only to physical property destruction, but also business interruption and any damage to inventory either directly from the blaze, or from chemical and water damage during firefighting. Should an owner's casualty cover not extend to "neighboring property impacts under passive conditions," it is inevitable that protracted legal dispute will follow.

The design of casualty policies, therefore, must adapt to these changes. We're seeing a rise in claims related to minor product failures – connectors, panel fixings and charge controllers – that lead to major downstream consequences. Such incidents often result in claims that straddle property and liability lines, complicating subrogation and slowing down the claims process.

In January of 2025, a significant fire took hold of the Moss Landing battery energy storage facility in California. **The incident led to the release of toxic gases,** prompting lawsuits filed against the project owner Vistra Corporation, battery manufacturer LG Energy Solutions and local energy grid, PG&E, alleging the use of defective batteries, flawed storage designs and inadequate safety measures. These claims focused on property damage, health impacts and potential negligence in system design and safety protocols. The legal cases continue at the time of writing.

The problem with converged infrastructure

Alongside the increasing deployment of renewable technologies closer to urban centers, the development of converged infrastructure – where data, energy, and logistics co-locate – presents another more recent contractual minefield. Ownership and liability are blurred across developers, tech firms, EPCs and municipal authorities. Who owns the liability if a transformer arc flash leads to downtime at a co-located AI training hub, for example?

For underwriters, this ambiguity is critical. As AI escalates demand for fast, secure electricity – and pushes developers closer to the edge of infrastructure capacity – the scope for unanticipated liability increases. Policies must evolve to address both physical and cyber-physical triggers. At present, as a **recent report from Swiss Re** has highlighted, there's a coverage gap between traditional public liability and emerging operational technology failures linked to AI integration, smart grid volatility, or automated dispatch systems.

Nuclear verdicts and social inflation

Compounding these operational trends is a broader litigation culture in the U.S. Social inflation, the rise of litigation financing, and a growing mistrust of corporates have led to so-called "nuclear verdicts" – jury awards of more than $10 million. Renewable energy, often portrayed as a beneficiary of tax credits and federal funding, is not immune. Indeed, while it's difficult to evidence directly, firms with stronger ESG profiles – such as renewable energy developers and operators – can be targeted for allegedly "not living up to their own values". This should be a consideration for firms assessing casualty risk protection and setting limits that account for the potential for nuclear verdicts.

In December 2024, a federal judge ruled that Enel Green Power's Osage Wind project in Oklahoma trespassed on the Osage Nation's mineral estate by extracting minerals without proper authorization during construction. The court ordered Enel to remove all wind turbines by December 2025 and pay $300,000 in damages, along with millions in legal fees.

Similarly, in April 2023, a federal jury in Georgia awarded $135.5 million to property owners Shaun and Amie Harris. The couple sued Silicon Ranch Corporation and its contractor, Infrastructure and Energy Alternatives (IEA), over environmental damage caused by runoff from the Lumpkin Solar Project, a 100 MW solar farm in Stewart County, Georgia. The runoff led to sediment pollution on the Harris property, turning a 21-acre fishing lake into a "mud hole."

More widely, claims linked to wildfire liabilities, for instance, have already crippled segments of the utility market in California – **notably PG&E, which paid out $13.5bn to settle individual claims relating to several Northern California wildfires.** The energy transition may be socially popular, but when property is lost or lives are affected, public goodwill evaporates fast. Casualty insurers now operate in a market where optics, not just outcomes, influence legal exposure.

Political realignment, manufacturing risk

A final complicating factor is the political pressure to “reshore” clean energy manufacturing. While the goal is to reduce dependence on overseas supply chains, the consequence may be a deterioration in quality control as new facilities scale up at speed.

We are already **seeing recalls and warranty disputes** from components produced in fledgling US factories with limited testing or insufficiently vetted suppliers. Component failures – while often minor – are increasingly **resulting in third-party claims** due to poor installation protocols and lack of integrated commissioning checks.

If the drive to cut the Levelized Cost of Energy (LCOE) remains the overriding goal, corners may be cut. Poorly made mounting systems, substandard connectors or inadequate testing protocols are already triggering claims. It is too early to determine the full impact, but insurers are watching closely.

Moreover, underwriters are raising questions about how contractual responsibility is assigned across the EPC chain. If a local assembler sources a flawed part from a rushed supplier, and that part causes injury on-site, where does the liability fall? These are the types of grey areas where coverage wording will be tested in court.

Takeaway

For underwriters, brokers and risk managers alike, the takeaway is clear: casualty risks in renewables are no longer emerging, they are here. The question is not whether you're covered, but whether your cover offers the protection your balance sheet requires.

Casualty insurance for renewables is no longer a niche concern; it is a strategic necessity. Whether it's a blade throw near a public right of way, a rooftop system igniting on a public building or a cyber event cascading through converged systems, today's casualty risk environment requires expert navigation.

At NARDAC, we bring deep technical knowledge of casualty exposures throughout the project lifecycle – combined with access to markets that can write nuanced, non-standard risks. Our experience with owner's interest cover and international placement allows us to respond to risks that legacy casualty policies often fail to anticipate.

As clean energy scales and integrates with digital infrastructure, the line between property and liability will continue to blur. In our view, traditional underwriting models based on static, isolated assets must evolve into frameworks capable of accommodating interconnected, dynamic systems.

Insights provided by:

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