

Beyond Internal ESG Metrics: Mitigating Financial Risk in the Value Chain through IoT-Verified Strategic Contributions

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Abstract

Current corporate ESG strategies are predominantly focused on internal operational efficiencies, often neglecting the more complex external risks residing within the broader value chain. However, under the principle of Double Materiality, these external environmental and social factors represent significant financial risks that can directly impact a company's valuation and creditworthiness.

This contribution argues that there is a critical shortage of actionable frameworks for mitigating Scope 3 and value chain risks. It proposes a model where companies transition from passive reporting to active risk management by making strategically targeted donations and investments within their value chain region. Central to this approach is the integration of IoT-verified data streams, which provide real-time, audit-ready evidence of the impact of these external investments.

By shifting the focus from internal compliance to verifiable external risk mitigation, companies can more effectively address financial materiality, improve their ESG scores under EFRAG standards, and secure better financing terms from institutions such as banks. The presentation will demonstrate how this methodology bridges the gap between high-level sustainability goals and concrete financial risk reduction.

This contribution argues that the future of ESG compliance will depend on four pillars: the credibility of savings measurement methodologies, digital traceability of certificates for audit purposes, measurable evidence of emission reductions achieved through strategic interventions within the value chain, and alignment with the updated GHG Protocol guidelines for Scope 3.

Keywords: Double materiality, risk mitigation, Value chain, decarbonisation, IoT, ESG metrics

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