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RESEARCH ARTICLE

DE-RISKING RUPEE CARBON: WHY THE MARKET NEEDS UNDERWRITERS, NOT JUST A REGISTRY

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Abstract

India's carbon market has built the infrastructure to issue and trade credits, but not to insure them so banks won't accept carbon credits as loan collateral, treating them as a curiosity rather than a bankable asset. This gap isn't regulatory caution; it's the absence of underwriting for reversal and invalidation risk, the two ways a credit can fail. Global insurers (Oka, Kita, Howden) already price this risk for lenders elsewhere, but none are licensed to operate in India yet. Meanwhile, India's own regulatory groundwork IRDAI's 2025 sandbox and "use and file" route is ready-made for this kind of product but has only been aimed at blue carbon projects, not the market. The article argues that policymakers should build reversal-and-invalidation insurance across all credit types, not just coastal ones, since insurance not more registries are what would let banks finally treat carbon credit as real security.

Introduction: -

Take a Carbon Credit Certificate (CCC) or a Verra-registered offset to an Indian bank and ask to pledge it against a working-capital loan. The credit desk will almost certainly decline. The same officers who can underwrite a warehouse of steel coil or a fleet of delivery trucks in an afternoon have no comparable playbook for a tonne of avoided emissions. It is tempting to read this as regulatory caution, banks supposedly waiting for the government or the Reserve Bank of India (RBI) to bless carbon credits as acceptable security formally. The more likely explanation is that carbon-backed lending remains a novelty everywhere, India included: banks do not yet understand the asset well enough to price what could go wrong with it, and no one has built the instrument that would let them stop worrying about it. That instrument is insurance, and its absence, not a missing government mandate, is perhaps the most overlooked constraint.

The Regulatory Architecture: What CCTS Delivers:

On paper, India's carbon market already looks institutionally serious. The Carbon Credit Trading Scheme (CCTS), notified under the Energy Conservation (Amendment) Act, 2022, runs on two tracks. A compliance mechanism has handed legally binding emissions-intensity targets to close to 490 entities across seven energy-intensive sectors aluminium, cement, chlor-alkali and pulp and paper, followed more recently by petrochemicals, petroleum refining and textilesadministered by the Bureau of Energy Efficiency, with the Central Electricity Regulatory Commission overseeing trade once it opens, expected around the middle of 2026. Running alongside it, a voluntary offset

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mechanism has already cleared eight crediting methodologies covering everything from green hydrogen and pumped-hydro storage to industrial efficiency gains and mangrove afforestation, feeding into the same Grid-India registry. What this architecture delivers are issuance, verification and a venue to trade.What it has nothing to say about is what happens after a credit exists and something goes wrong with it.

The Missing Layer: Reversal and Invalidation Risk:

That silence matters because a carbon credit can fail in ways a bond or a bag of cement cannot. It can be reversed when the carbon it represents is released back into the atmosphere through fire, disease or a change in land use, or it can be invalidated when the accounting behind it turns out to have been flawed or overstated from the outset. Neither risk is hypothetical. A 2023 investigation by the Guardian, Die Zeit and Source Material concluded that fewer than one in ten of Verra's rainforest offset credits corresponded to a genuine cut in emissions. This finding landed alongside a broader collapse in confidence that pulled the global voluntary market's value down from $1.9 billion in 2022 to $723 million in 2023. When Zimbabwe's Kariba REDD+ project, once among the largest offset schemes anywhere, came under formal review for overstating its output, Verra itself estimated that covering the shortfall could draw down between 38 and 51 percent of its entire 75-million-credit buffer reserve, a pool meant to backstop every project on its registry, nearly emptied by one project's failure.

Global Precedent: How Insurers Already Price This Risk:

A shared reserve of that kind spreads risks thinly across everyone; it is not the same thing as underwriting.

This is exactly the gap that specialty insurers have begun to fill outside India. Lloyd's of London now hosts several carbon-focused underwriters: Oka, which prices reversal, invalidation and loan non-payment risk under a product it calls Carbon Protect; Kita, a Lloyd's cover holder that lifted its underwriting capacity by 450 percent to £22.5 million for 2025, backed by names including Chaucer, Munich Re Specialty and Tokio Marine Kiln; and Howden, which built an invalidation-cover product with carbon financier Respira International as far back as 2022. Some of these products are aimed squarely at lenders rather than credit buyers. Willis Towers Watson sells a version structured for Basel capital treatment, using Lloyd's paper so a bank holding carbon-linked exposure can claim regulatory capital relief rather than simply absorbing the risk. Kita makes an almost identical case for its own lender-facing product, arguing that shifting the counterparty risk onto an insurer's balance sheet lowers loss-given-default and can cut the cost of capital for project developers.

India's Untapped Regulatory Groundwork:

This is precisely the missing layer for Indian banks: a contract that turns "the methodology should hold up" into an enforceable promise of compensation if it does not. Tellingly, Kita's own list of jurisdictions it is authorised to write cover in the UK, US, Canada, the EU, Switzerland, Singapore and Australiahave no place for India on it yet. The rupee carbon market has grown faster than the underwriters have followed it. ORF's own research shows how narrowly this idea has been framed at home. An August 2025 Issue Brief on blue carbon credits suggests exploring parametric cover modelled on the Mesoamerican Reef Insurance Programme but strictly to protect mangrove and seagrass projects from cyclones and sea-level rise, one recommendation among several aimed at a single project type. Reversal and invalidation risk, however, is not a coastal peculiarity. It sits just as squarely under a renewable-energy offset in Rajasthan or a CCC surrendered by a cement plant as it does under a mangrove credit in the Sundarbans.

Treating insurance as a fix reserved for blue carbon, rather than as infrastructure for the compliance-plus-voluntary system, undersells what the tool is for. To address this gap, policymakers should develop a comprehensive regulatory framework that enables insurance products for reversal and invalidation risks across all carbon credit types in both compliance and voluntary markets, rather than limiting such coverage to blue carbon projects. What makes the omission more striking is that India's regulatory groundwork for this kind of product is largely already in place, just pointed elsewhere. In January 2025, the Insurance Regulatory and Development Authority of India (IRDAI) opened a sandbox that folded 34 older regulations into six, designed explicitly to speed up climate-risk insurance and enable partnerships spanning banks, microfinance institutions and carbon-credit providers. Its "use and file" route already lets insurers bring parametric products to market without waiting for prior sign-off; New India Assurance used exactly that route to launch a climate-parametric product within months rather than years.

Connecting the Pieces: What This Means for Banks:

None of this has yet been aimed at post-issuance carbon risk specifically, and the RBI's own climate-risk framework is still finding its footing; it postponed mandatory climate-disclosure norms for banks in January 2026, citing data gaps and cost, which helps explain why something as specific as accepting a carbon credit as loan security has

stayed unaddressed. But rawmaterials a fast regulatory track, homegrown parametric expertise, and global reinsurers already pricing comparable risk elsewhereare closer at hand than the silence around the idea would suggest. Connect these pieces, and the payoff for banks is concrete. A CCC or a voluntary credit wrapped in reversal-and-invalidation cover, written by an IRDAI-licensed insurer with reinsurance support from the Lloyd's names already active in this space, stops being a leap of faith for a credit officer and starts looking like any other insured receivable, the same logic that already lets banks lend against invoices once a trade-credit insurer stands behind them.

Counterargument and Response:
That shift, more than any ministerial notification, is what would let banks treat carbon credits as security rather than as curiosity sitting on a sustainability team's books. However, one possible counterargument is that introducing insurance mechanisms prematurely, in the absence of sufficient data or strong products, might lead to market distortions or a false sense of security among lenders. These concerns are legitimate because pricing this kind of cover accurately requires robust claims history and reliable data from BEE's monitoring and verification framework, as well as from registries like Verra, which the market has only recently begun to accrue. A poorly constructed insurance product could simply relocate the credibility problem onto an insurer's balance sheet without providing a genuine resolution.

Conclusion:-

Nevertheless, such risks must be weighed against the persistent danger that, without any insurance infrastructure, the market will continue to invest in registries while leaving post-issuance risks completely uninsured. In such a scenario, productive engagement with banks remains unattainable. The next phase of India's carbon market should therefore focus less on issuing additional credits and more on building the financial architecture that allows those credits to circulate through the banking system. Registries establish ownership; insurance establishes trust. Without a second layer, India's carbon market risks remaining a trading platform rather than becoming a safe climate-finance ecosystem.

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