CLIMATE-RELATED STRANDED ASSETS REPRESENT SIGNIFICANT CREDIT RISK TO BANKS

BOTH TRANSITIONAL AND PHYSICAL CLIMATE CHANGE WILL DEPLETE COLLATERAL VALUE ON THE BALANCE SHEET. BANKS MUST FACTOR THIS INTO CREDIT RISK MANAGEMENT.

Climate Risk Perspectives

EMERALD PATHWAYS

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In the context of climate change, stranded assets are defined as the ones that will be rendered economically inert, by either environmental changes or policies designed to curtail such changes. A widely used example of a stranded asset is oil that is notionally owned by a firm but ultimately loses its value, once the decision to leave it permanently in the ground has been made. The concept becomes especially important when asset valuations are made for the purpose of market value analysis or as collateral valuation for credit evaluation.

Compliance costs are related to, but different to stranded asset losses...

Policies put in place by governments in order that their economies can be restructured will create significant costs to businesses. Compliance with new regulations, from green building codes to sustainable agricultural practices will require initial investment and cause increased running costs. Certain assets, though, will become useless, which means that their valuation becomes zero for collateral valuation and resultant credit pricing.

Lowering collateral values and simultaneously increasing running costs, and the need for credit facilities creates a double bind for firms relying on banks for day-to-day liquidity. Greater borrowing with less collateral essentially equals a higher credit risk to the lending bank, which then needs more capital held against that risk. Stranded assets should be viewed as extreme examples of transitional risk.

Assets are also stranded by physical climate change. From rising sea levels to extreme weather such as heat and wind events, climate change will cause significant disruption to business activity in impacted areas. This element of asset stranding sets it apart from compliance, making it more difficult for policymakers to reduce or manage through orderly planning

Losses from stranded assets are already expected to be substantial...

The Carbon Disclosure Project (CDP) is a 'not for profit' charity that runs the global disclosure system for investors, companies, cities, states, and regions to manage their environmental impacts.

A 2019 report published by CDP detailed what 215 of the largest global companies were expecting over five years.

- Total losses due to climate change could reach $1 trillion.
- Losses due to stranded assets could reach ¼ of the total, or $250 billion.
- Opportunities in a greener economic future outweighed the predicted losses.

The above illustrates the potential dilemma faced by firms and their bankers. Taking advantage of green opportunities requires investment and credit. This is increasingly made more expensive as more liquidity is needed for day-to-day compliance, while the asset valuation underwriting the credit falls.

Assumptions around government compensation may be misplaced and risky...

The concept of stranded assets is not new, but there is evidence that investors and credit providers assume that compensation will be offered where economic policy itself reduces asset values. This assumption may be leading to this risk being ignored.

The German climate policy involves a climate levy to reduce coal-generated electricity. Suphi Sen and Marie-Theres von Schickfus (University of Munich) studied the attitude of investors to the risk of stranded assets within German utility companies.

Share prices were tracked against three policy stages.

- Levy on carbon emissions
- Compensation mechanism
- Regulatory compliance checks

The most significant negative reaction in the share prices was in the third stage.

The conclusion was that compensation is assumed to the extent that the risk of non-compensated stranding was not considered material. This is a big assumption that is not based on the reality of the policies being explored across industries. The full study can be read here.

Banks are advised to include asset stranding in any analysis of their current or planned balance sheet.

Stranded assets risks exist in every sector...

Energy and transportation garner maximum attention when transition risk is discussed, but there is substantial risk across all commodities. Agriculture, for example, is facing multiple challenges globally.

- Policies aimed at reducing Greenhouse Gases (GHGs), including Nitrogen, Methane, and Carbon Dioxide could cause Beef, Soy, and Palm producers to abandon large areas of operation due to the cost of adaptation.
- Reforestation is widely seen as an urgent requirement to create effective carbon sinks (natural removal of CO2 from the atmosphere). The economics of reforestation result in significant opportunity loss for current owners of targeted land.
- Prevention of deforestation is a corollary of reforestation, but directly prevents planned economic use of land, resulting in significant loss of value to the owner.

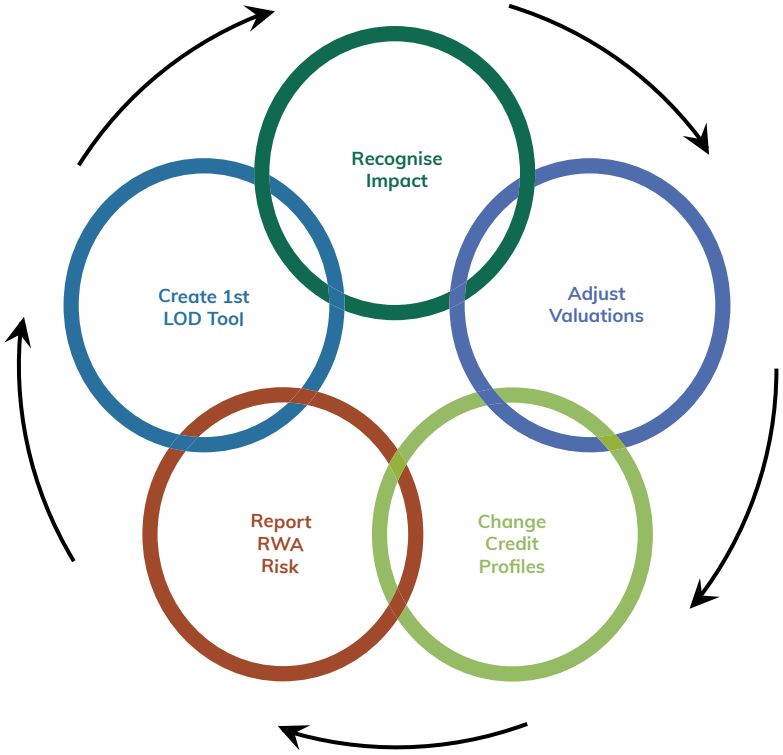
Agriculture is just one example where policies that are discussed at Conference of Parties (COP) level, and adopted by governments, will witness downward changes in currently 'priced-in' collateral values. Similar points can be made across all industrial sectors. While cost of compliance is a 'probability of default' or liquidity issue, stranded assets are a 'loss given default' or a collateral value problem.

Banks need to include collateral value falls in their stress tests...

As banks create risk frameworks that are designed to include climate change as a factor, they must include the potential credit impacts from stranded assets.

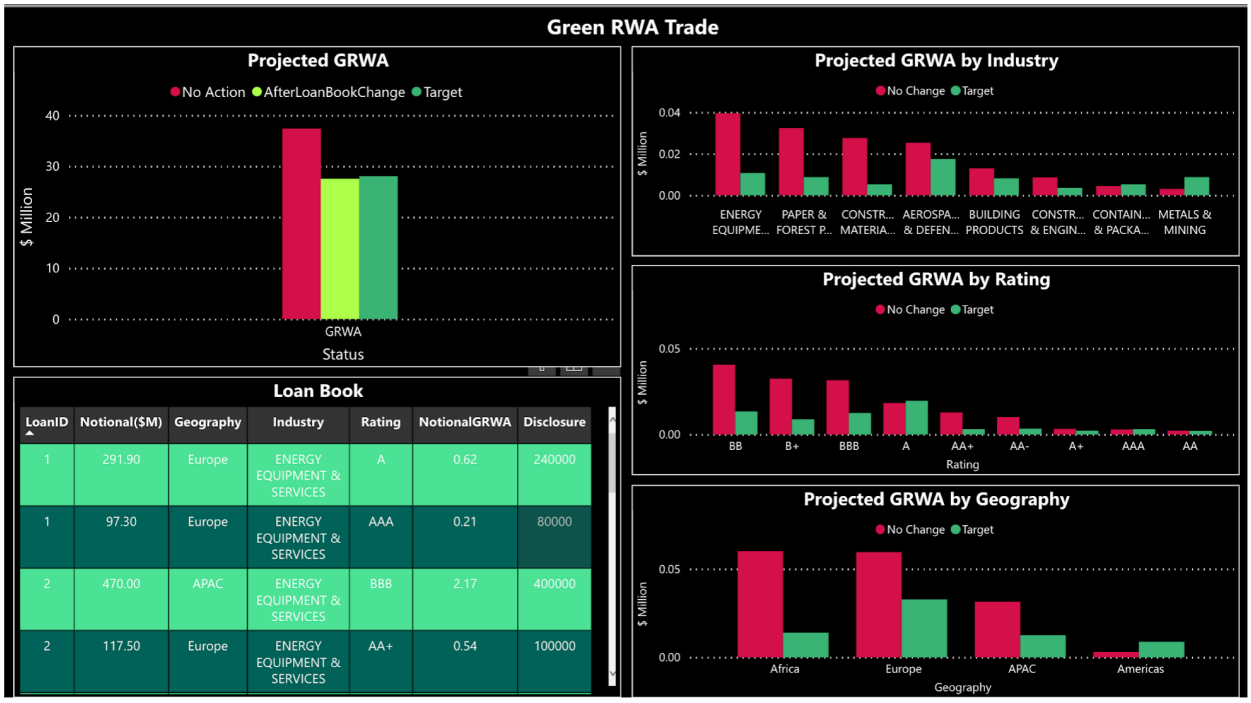
Building asset stranding into risk management involves:

- Recognizing the impact of climate change and climate policy on obligors' assets.
- Adjusting the recoverable value of loans and credit facilities to reflect that impact.
- Ensuring that expected credit profiles change accordingly, through climate stress tests.
- Making resultant Risk Weighted Asset (RWA) provisions reportable metrics from the stress tests.
- Creating 'first line of defense' tools that allow the risk to be priced correctly into new and rolling credit facilities.



GreenCap can help...

GreenCap is a 'Risk As A Service' (RAAS) solution that allows banks to assess the climate change risk to their loan books and balance sheets. Explicitly, this system incorporates the ability to repay and the recoverable value of collateral from the borrower, as key drivers of the financial risk faced by banks as lenders.



Banks can set and track risk-based targets against specific climate pathways with GreenCap. The calculation includes:

- Expected global and local losses by climate pathway.
- Sector-based benchmark correlation to expected losses.
- Loan level adjustments from mitigation investments and adaptations.
- Liquidity and asset valuation inputs.

Visit greencap.live for more information on the solution, and to discover a wealth of resources curated to provide banks with data and methodologies they will need to fight climate change over the coming decades.

ABOUT **GREENCAP**

- GREENCAP is a turnkey 'Risk as a Service' (RaaS) solution, designed for banks to include climate change as a category in their risk management frameworks.
- The solution allows banks to replicate climate pathways within their scenarios for economic impact and risk analysis.
- Using GreenCap, banks can modify pathways and scenarios to include the timing effects of delayed sustainability transition measures.
- Loans and credit facilities are measured and monitored against risks arising from both ‘physical’ and ‘transition’ impacts.
- GreenCap provides support for risk reporting and governance in the areas of ‘Responsible Banking’ and climate change.
- With GreenCap, banks can ensure that their climate strategies are financially grounded, and loan pricing is optimized throughout the transition to a green global economy.

ABOUT **GREENPOINT FINANCIAL**

- GreenPoint Financial is a division of GreenPoint Global, which provides software-enabled services, content, process and technology services, to financial institutions and related industry segments.
- GreenPoint is partnering with Finastra across multiple technology and services platforms.
- Founded in 2006, GreenPoint has grown to over 400 employees with a global footprint. Our production and management teams are in the U.S, India and Israel with access to subject matter experts.
- GreenPoint has a stable client base that ranges from small and medium-sized organizations to Fortune 1000 companies worldwide. We serve our clients through our deep resource pool of subject matter experts and process specialists across several domains.
- As an ISO certified by TÜV SÜD South Asia, GreenPoint rigorously complies with ISO 9001:2015 and ISO 27001:2013 standards.
- GreenPoint is owned by its founders and principals and is debt free.

Marcus Cree

MANAGING DIRECTOR AND
CO-HEAD OF FINANCIAL TECHNOLOGY AND SERVICES

Marcus has spent 25 years in financial risk management, working on both the buy and sell side of the industry. He has also worked on risk management projects in over 50 countries, gaining a unique perspective on the nuances and differences across regulatory regimes around the world.

As Managing Director, Marcus co-heads GreenPoint Financial Technology and Services and has been central in the initial design of GreenPoint products in the loan book risk area, including CECL and sustainability risk. This follows his extensive experience in the Finastra Risk Practice and as US Head of Risk Solutions for FIS. Marcus has also been a prolific conference speaker and writer on risk management, principally market, credit and liquidity risk. More recently, he has written and published papers on sustainability and green finance.

Marcus graduated from Leicester University in the UK, after studing Pure Mathematics, Phycology and Astronomy. Since graduation, Marcus has continually gained risk specific qualifications including the FRM (GARP's Financial Risk Manager) and the SCR(GARP's Sustainability and Climate Risk). Marcus's latest academic initiative is creating and teaching a course on Green Finance and Risk Management at NYU Tandon School of Engineering.

Sanjay Sharma, PhD

FOUNDER AND CHAIRMAN

Sanjay is the Founder and Chairman of GreenPoint Global - a risk advisory, education, and technology services firm headquartered in New York. Founded in 2006, GreenPoint has grown to over 380 employees with a global footprint and production and management teams located here in the U.S, India and Israel.

During 2007-16 Sanjay was the Chief Risk Officer of Global Arbitrage and Trading Group and Managing Director in Fixed Income and Currencies Risk Management at RBC Capital Markets in New York. His career in the financial services industry spans over two decades during which he has held investment banking and risk management positions at Goldman Sachs, Merrill Lynch, Citigroup, Moody's and Natixis. Sanjay is the author of "Risk Transparency" (Risk Books, 2013), Data Privacy and GDPR Handbook (Wiley,2019) and co-author of "The Fundamental Review of Trading Book (or FRTB)- Impact and Implementation" (RiskBooks,2018).

Sanjay was the Founding Director of the RBC/Hass Fellowship Program at the University of California at Berkeley and is an Adjunct Professor at EDHEC, Nice in France. Sanjay is also Adjunct Professor at Fordham University where he teaches a similar master's capstone course and at Columbia University. He has served as an advisor and a member of the Board of Directors of UPS Capital (a Division of UPS) and is a frequent speaker at industry conferences and at universities. He served on the Global Board of Directors for Professional Risk International Association (PRMIA).

He holds a PhD in Finance and International Business from New York University and an MBA from the Wharton School of Business and has undergraduate degrees in Physics and Marine Engineering. Sanjay acquired his appreciation for risk firsthand as a merchant marine officer at sea where he served for seven years and received the Cheif Engineer's certificate of competency for ocean-going merchant ships. Sanjay lives in Rye, NY with his wife and two teenage sons.