



# TRANSITION RISK MANAGEMENT FOR COMMERCIAL BANKS

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**FFC  
GREENING THE  
FINANCIAL  
SYSTEM**

Accelerating green finance  
in emerging markets

FEBRUARY **2022**

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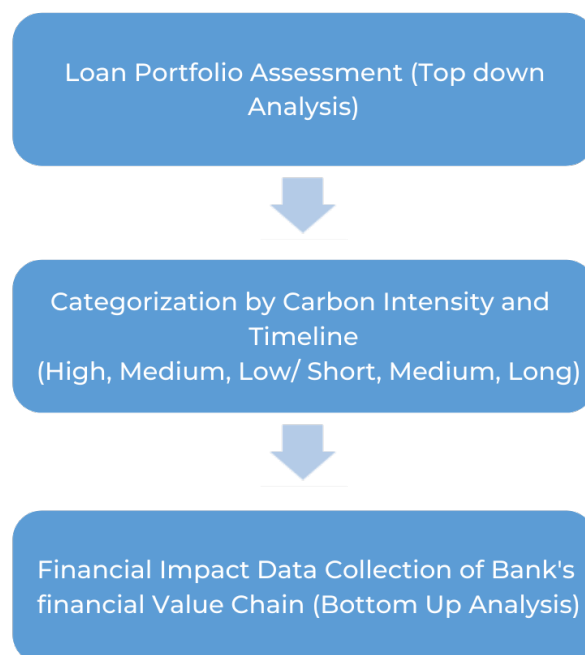
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# MANAGEMENT OF TRANSITION RISK IN BANKS

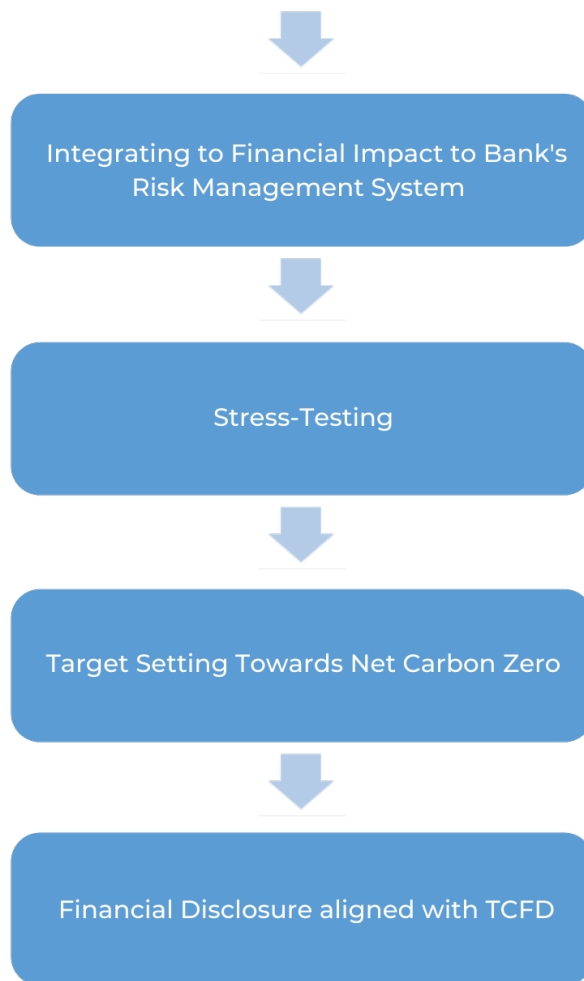
Risk management and financial disclosure of transition risk has become a mandatory fiduciary duty for financial institutions worldwide as investors require them to disclose climate-related financial risks. As such, it is imperative for banks to assess transition risks in their loan portfolios and find mitigating solutions to those risks. Banks should identify the best-fit valuation models or metrics to assess financial risk from their carbon-intensive assets.

The transition risk integration process involves a series of steps: assessment, quantification of financial impact, integration, and reporting. This is a lengthy process, and requires a bank to first build up its internal capacity, employ custom-fit technical tools, and establish a task force to implement the steps. Although a bank employs a third party to perform the whole process, an internal capacity to oversee the procedure is highly recommended for accurate results. The whole process ultimately includes seven steps from assessment to reporting.

## The Seven Steps of the Transition Risk Management Process





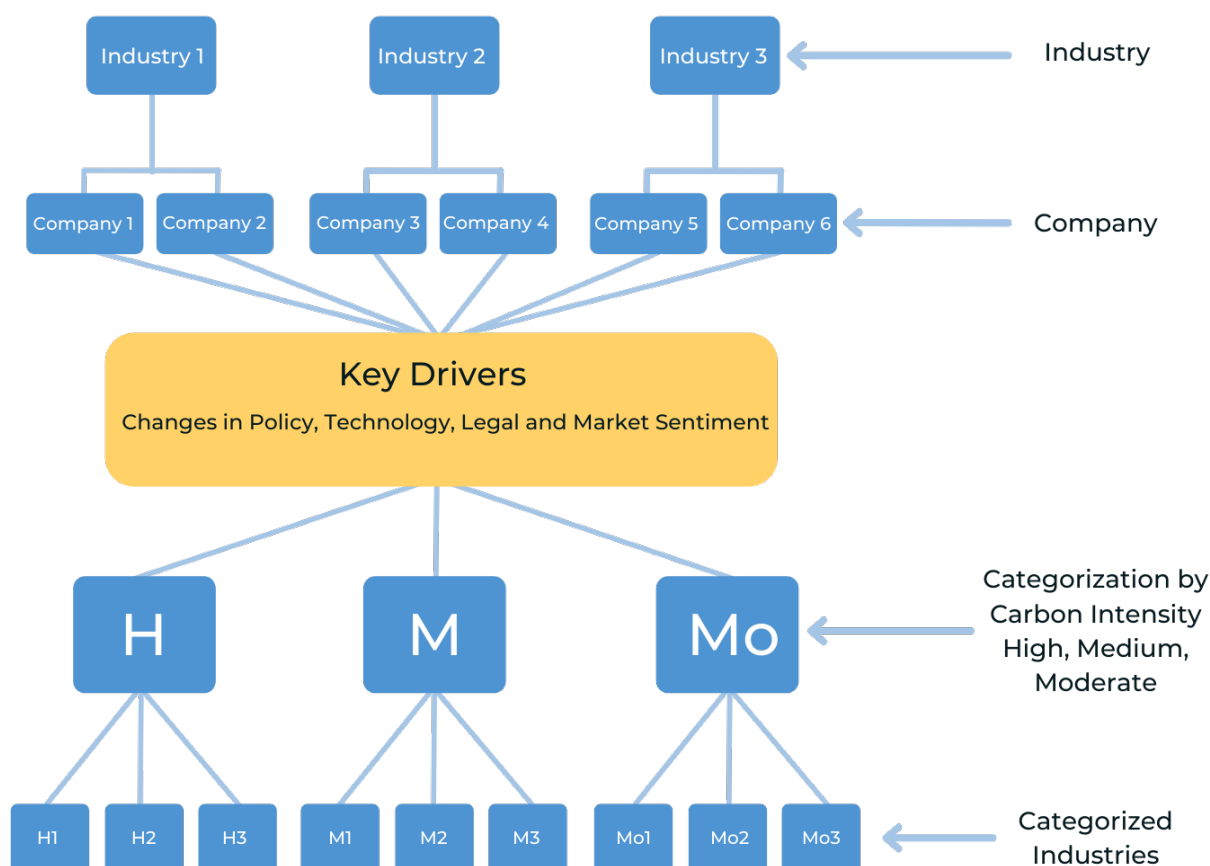




# I. TRANSITION RISK ASSESSMENT

A three-dimensional metric is used to assess transition risk: industries, forthcoming potential changes, and timeline. In general, a bank's loan portfolio is categorized by industry. Banks need to predict and review potential changes in climate policy, technology, and consumer and market sentiment based on current policies and global movements; this is the first parameter. The second parameter is establishing a timeline for these changes. This can vary by locale according to national-level policy, market behavior due to possible delays in policy implementation, technology, and market behavior at the international and national level. Once a bank has formulated its customfit metric for transition risk, it can make a top-down assessment of its loan portfolio.

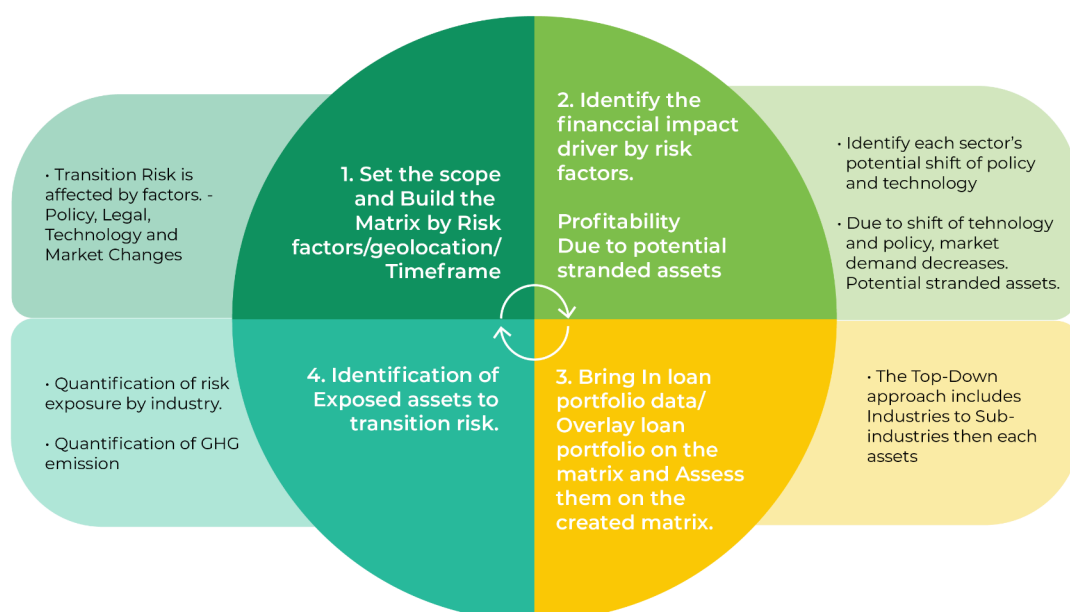
## Top-Down Approach



The following steps are recommended for banks assessing transition risk assets:

- 1** Set the scope and build transition risk assessment metrics by risk factors (policy, legal, technology, and market demand), geo-location, carbon intensity (moderate, medium, and high) and transition risk term (short, medium, or long term).
- 2** Identify each sector's potential shifts in policy, technology, market demand, and legal implications. These are the primary drivers of change that can decrease market demand, resulting in potential stranded assets.
- 3** Overlay the loan portfolio on the matrix. The topdown approach includes industries to sub-industries then each asset.
- 4** Identify assets exposed to transition risk and quantify risk exposure by industry and corresponding GHG emission to determine baselines and eventual targets.

## Identification of Assets and Quantification of Portfolio Risk Exposure



## II. CATEGORIZATION

Banks use transition risk asset assessment to categorize assets as high risk, medium risk, and moderate risk in terms of carbon intensity. Despite a lack of clear transition risk categories, the general consensus on transition risk for different industries is shown in the table below. The risk category for a given industry can vary by country; for example, the automotive industry in Japan could be categorized as high risk because the country's manufacturing facilities rely on fossil fuels, but in developing countries it could be deemed medium or moderate risk because these countries' automotive industry is limited to trade, with no manufacture.

Table 1: Risk Categorization on Transition Risk by Industries

| Risk Category | Industries  |
|---------------|---|
| High          | Fossil-fuel-based power generation, mining oil and gas, chemical, steel, manufacturing, shipping, logistics, aviation |
| Medium        | Financial institutions, real estate, insurance, agriculture   |
| Moderate      | Renewable energy, trading, IT, media, telecom   |

Transition risk assessment should also include timelines, taking into account the potential effects on industries of changes in government policy, technology, and market and consumer sentiment in the medium, long, or shorter term. Timeline metrics should take into account the location of a given industry; for example, for automotive fuel, European emission standards have already reached Euro 7 in the EU, while in developing countries like the Philippines, Euro 4 standard is still accepted as a clean fuel due to delays in policy revision.



### III. FINANCIAL IMPACT QUANTIFICATION

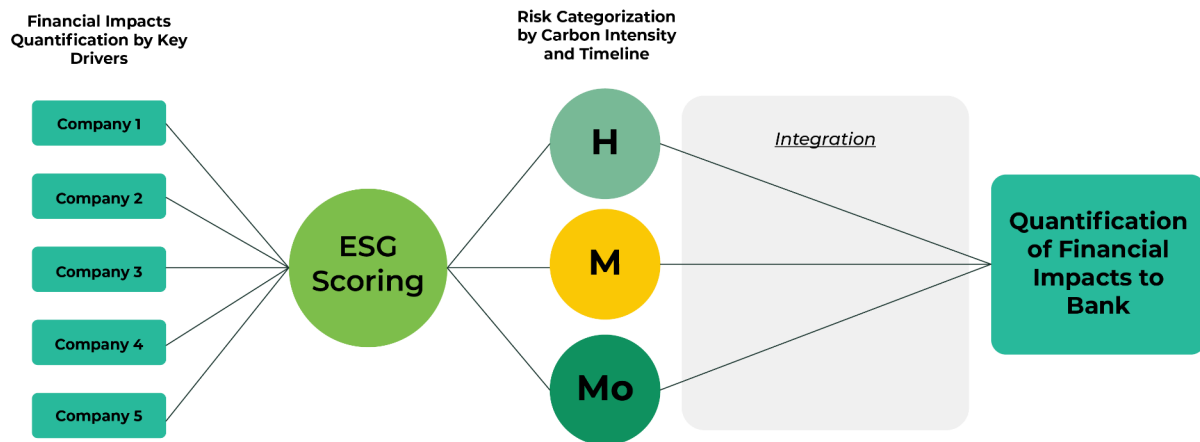
A bank's assets comprise loans, interest income, and fees, while liability comprises deposits and long-term borrowings, which is different from a typical corporation's financial statement. Transition risk has a potential negative effect on short-term liability due to the withdrawal of investors or depositors that do not support a bank's lending to carbon intensive assets. The transition to a low-carbon economy could also affect the asset side of commercial banks' balance sheet because of possible increases in non-performing loans if carbon-intensive assets in energy and high-risk industries become stranded.<sup>1</sup>

Financial risk can be quantified in two ways: expected risk, found through carbon-intensive asset assessment, and unexpected risk, found through stress testing. Asset prices can be used to estimate the financial impact of expected transition risk. Stress testing simulations can simulate the financial effects of potential unexpected risks.

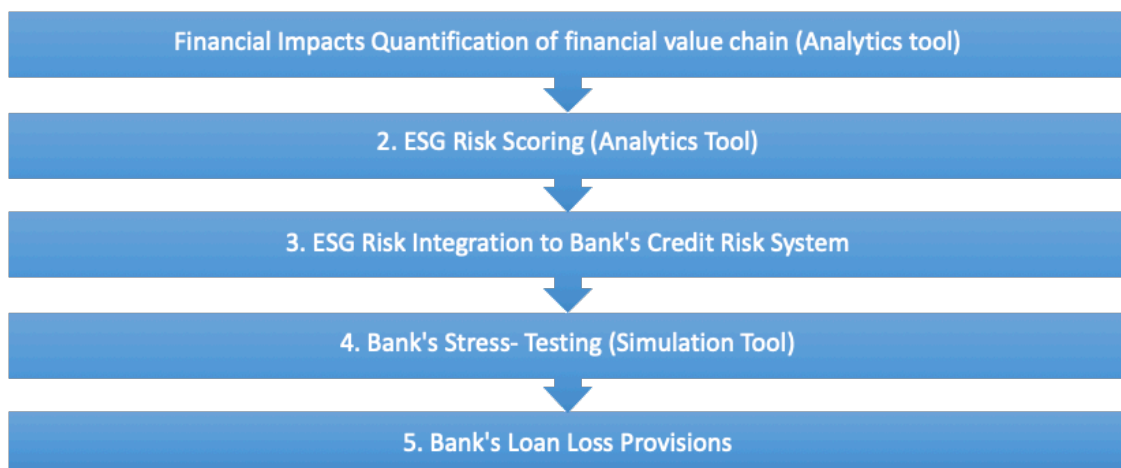
To quantify the potential financial impact of transition risk, it is necessary to conduct a bottom-up analysis of a bank's financial value chain, collating financial impact data from each client. Banks should evaluate each client's financing position by way of an environmental and social credit score based on a client's vulnerability to key transition risk drivers.

Macro and micro key drivers for transition risk drive fluctuations in profitability. Macro key drivers includes the nation's economic and industry growth, and micro key drivers includes changes in a company's product cost and selling price due to supply chain changes. If a company's product or business models are not compatible with the shift to a low-carbon economy, negative reactions from consumers and the market can diminish that company's profitability.

## Financial Impacts Flow

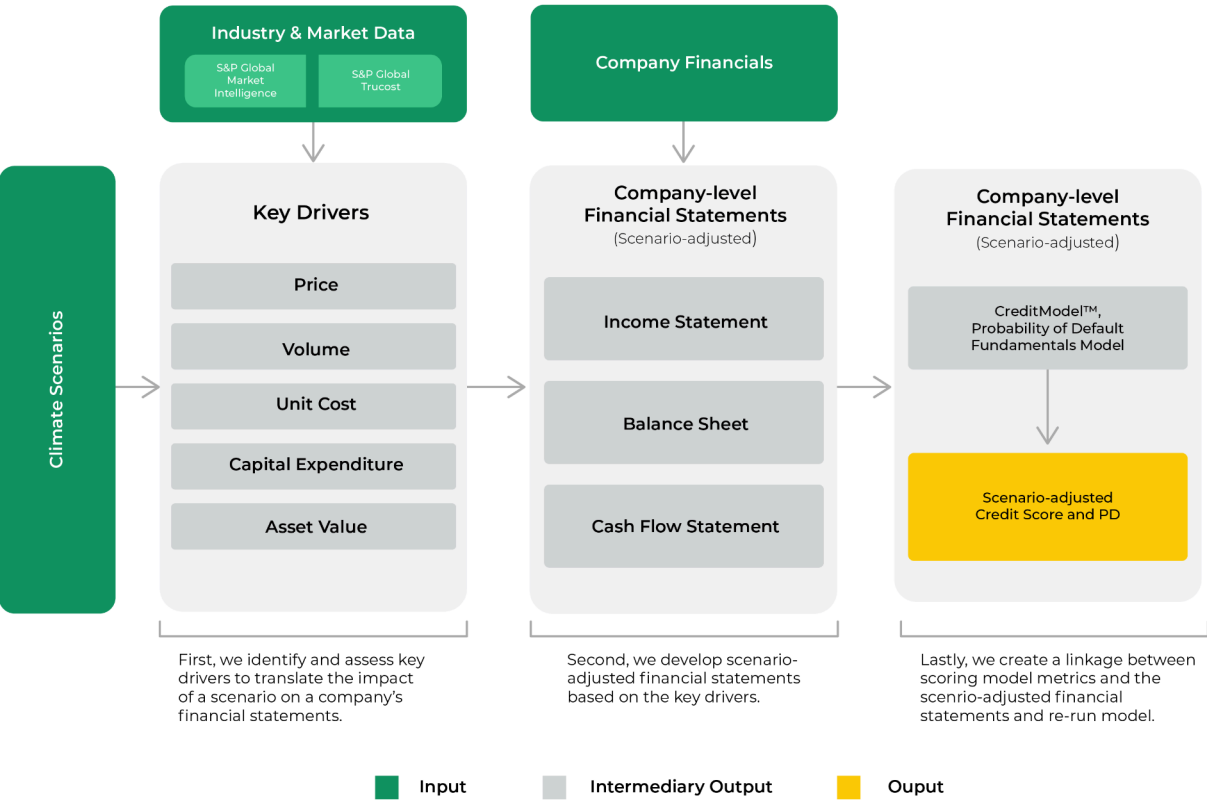


Banks should collate the financial impact data of clients with carbon-intensive assets and score these based on ESG scoring metrics. Whole financial impact data from clients should be used to create a base of financial impact scenario, and then the various scenarios simulated by technical tools for stress testing. The process of collating financial impact data from each client to integrate into a bank's credit risk management system is represented below.



In 2021, S&P Global created Climate Credit Analytics, which adopts a fundamentals-driven view, with company-specific credit score assessments for corporations with sufficient company financial and industry data to enable bottom-up modeling, and portfolio-level analysis of climate-related financial and credit risks for thousands of public and private companies across multiple sectors globally. Stress testing includes results based on a timeline up to 2050, multiple temperature targets and transition pathways, varied carbon pricing levels, and transition opportunities.

Figure 1: Climate Credit Analytics Methodology



Source: Methodology: Climate Credit Analysis, S&P Global Market Intelligence. For illustrative purposes only.



The analytics translates different climate scenarios and sector-specific supply and demand elasticity and market dynamics into drivers of financial performance custom fit to each industry, such as production volumes, fuel costs, and spending on capital expenditures (see Figure 1 above). These drivers are then used to forecast company financial statements under various climate scenarios.

The model allows the user to perform a detailed analysis of the sensitivity and contribution of a specific financial factor to the credit score, equivalent to an ESG score. This determines the impact of a given climate scenario on credit risk rating through the model driver and impacted financial ratio. The procedure also requires downloading batched financial data and running the resulting outputs through the bank's own credit rating models.

Banks can implement S&P Global's methodology for climate credit analysis and tailor it to their individual strategies and local setting. They can also explore various climate data solution providers to meet their stress testing needs.







## IV. INTEGRATING ENVIRONMENTAL, SOCIAL, AND GOVERNANCE RISK SCORES INTO CREDIT SYSTEMS

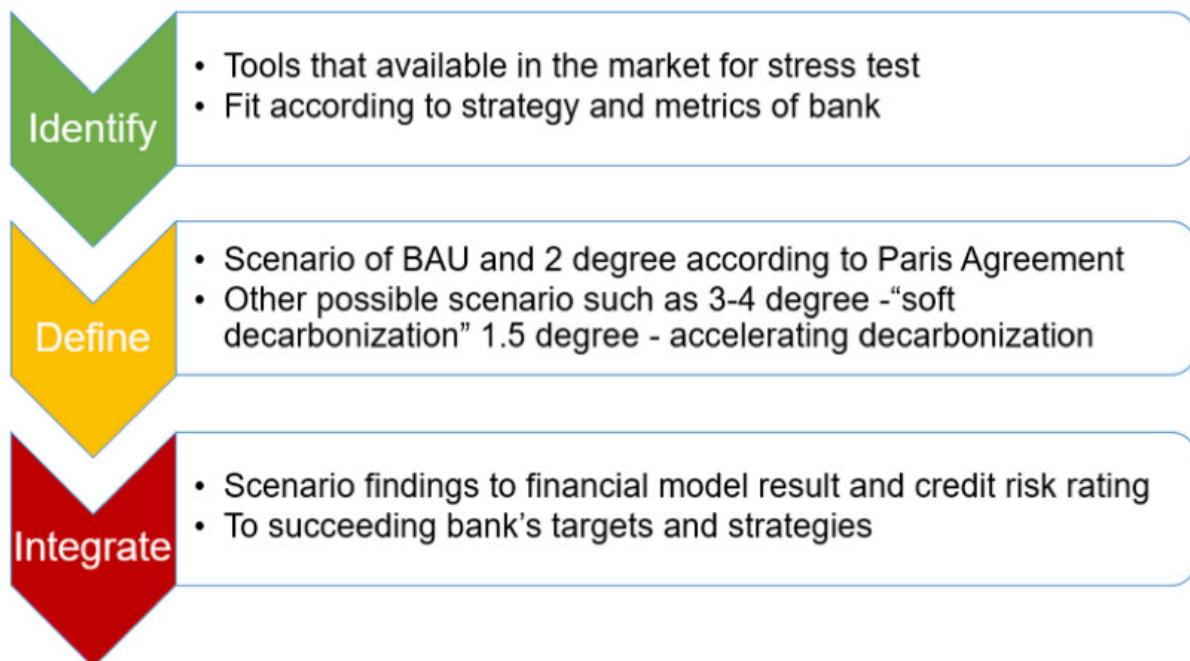
As climate risks become reality, banks should build clients' ESG risk scores into their credit systems. This score is calculated based on financial impacts from climate risks, including physical and transition risk. A client's credit score can fluctuate based on the sustainability of their business. Financial impacts driven by ESG key factors influence not only the credit quality of a bank's clients but also of the bank; ESG factors and risks should be incorporated into each step of the lending process, including financial product sales, client credit assessment, monitoring, and reporting.

To integrate ESG risk score into the credit systems, banks should employ technical tools to add up total ESG risk from the individual risk scores in key drivers of carbon intensity, and to establish timelines for each transition risk, including policy, technology, markets, and consumers. The average ESG risk score of each of a bank's clients can be calculated before transition risk is integrated into the credit system.



## V. STRESS TESTING

The objective of a stress test of climate risk is to assist banks in collating financial impact data to formulate a strategy for managing climate risk, and to prepare capital provision towards this. Some obstacles to this process remain, such as a lack of high-quality historical or statistical climate data; a bank's relationship to industries and the broader economy for financial modeling; longer time horizons for climate stress testing; a need for GHG emission data by energy type; diverse tax regimes across different countries and the effect of this on goods and elasticity of demand; and a need to perform sensitivity analysis based on adaptation, business-as-usual scenarios, and asset stranding. For example, historical data on physical risk is no longer sufficient as weather patterns become more unpredictable due to climate change, while the data on transition risks may be unprecedented.



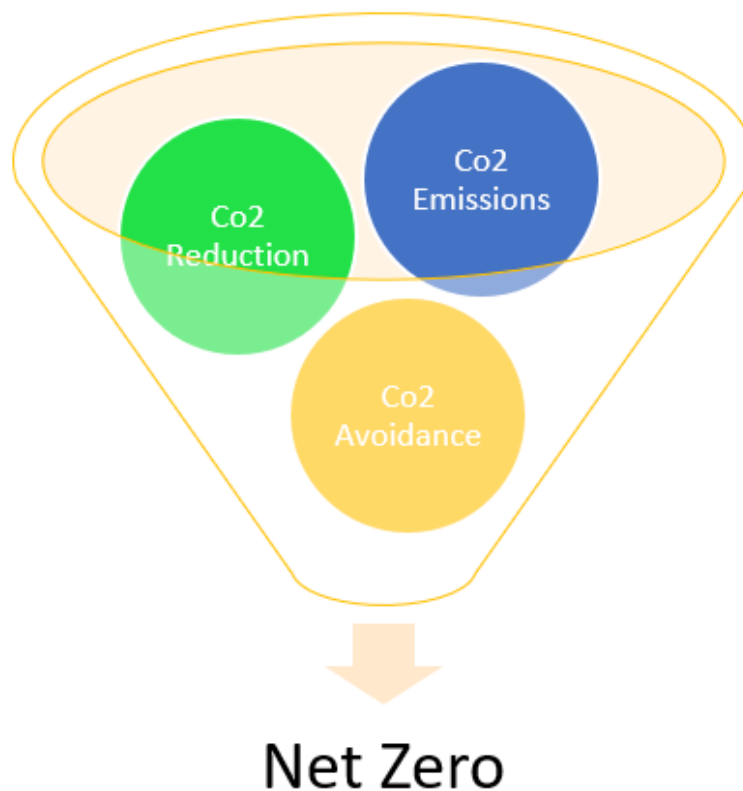


Banks need to identify the best-fit tools available based on their sustainability strategies and metrics. The base scenario for stress testing should be the Paris Agreement's two-degree goal, where mean temperature rise is kept below two degrees Celsius above pre-industrial levels. Banks should also simulate other scenarios, such as business-as-usual, soft decarbonization where warming is kept below three degrees, and accelerated decarbonization at 1.5 degrees. A 1.5-degree scenario is widely considered preferable to a two-degree scenario; banks can adopt a 1.5-degree base scenario if they are proactively involved in climate change mitigation. After simulating various scenarios, banks should integrate their findings into their financial models and credit risk rating, establish medium- and long-term targets and strategies on carbon emission reduction by transition risk assets, and implement action plans to meet these targets. They should also make provisions to protect their financial stability in the face of climate risk.

## VI. TARGET SETTING NET CARBON ZERO

Net zero and carbon neutral commitments are on the rise since 2021 as companies, financial institutions, and countries assert their alignment with global climate goals.<sup>2</sup>

During transition risk assessment, banks should quantify carbon emissions from their carbon intensive assets and make this the baseline when setting carbon reduction targets. Banks can offset their carbon emissions through sustainable finance; for example, carbon emissions from fossil-fuel coal plants can be offset by financing renewable energy and energy efficiency. To achieve net carbon zero, banks should compare loan volume for fossil fuel plants versus renewable energy and then make continuous efforts to reduce financing of carbon-intensive sectors or help these sectors integrate into a low-carbon economy, divest carbon-intensive assets, and increase financing to renewable energy.



## VII. FINANCIAL DISCLOSURE ALIGNED WITH THE TASK FORCE ON CLIMATE RELATED FINANCIAL DISCLOSURES

A bank's financial disclosures in relation to climate risks, including transition risks, provide vital information about its financial sustainability to stakeholders. These disclosures are part of a bank's fiduciary responsibility to its clients and investors. One well-accepted disclosure standard is the framework set out by the Task Force on Climate Related Financial Disclosures (TCFD), in which recommendations are structured around four pillars: governance, strategy, risk management, and metrics and targets. These four pillars are intended to interlink and inform each other. The whole climate and transition risk management process, from assessment and target setting to financial disclosure, is important in helping banks achieve sustainability goals. Currently, banks around the world publish a separate TCFD report in addition to an annual report.

### The Four Pillars of TCFD







## VIII. ENDNOTES

<sup>1</sup><https://www.spglobal.com/marketintelligence/en/news-insights/blog/financial-institutions-factor-transition-risk-into-climate-related-stress-testing>

<sup>2</sup><https://www.spglobal.com/esg/insights/informing-the-journey-to-net-zero?>

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