



TRANSITIONAL RISKS TO COMMERCIAL BANKS

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I. INTRODUCTION

The financial crisis of 2007–08 taught financial institutions to make macroeconomic stress tests central to their risk management strategy.¹ In the transition to a low-carbon economy, banks must appropriately manage the transition risk assets they have financed to ensure financial stability. Globally, the banking industry is integrating environmental, social, and governance (ESG) risk, physical risk, and transition risk into banks' credit risk management system by simulating stress testing. A case in point: in 2020, the Central Bank of the Philippines announced a Sustainable Finance Framework policy that requires financial institutions to integrate ESG, physical, and transition risks into their credit systems, with a three-year grace period in which to implement this change.

Banks that do not gear their lending strategies toward a transition to low-carbon assets will encounter high pressure from various stakeholders, including investors, civil organizations, and credit raters, to effectively manage high-transition-risk assets due to the potential negative environmental impacts of the financial value chain and potential loss of corporate earnings due to stranded assets in carbon-intensive industries. Commercial banks should integrate transition risk assessment into their business and risk management strategies to comply with regulatory agencies, prevent stranded assets, and protect financial stability.

Stranded assets were one consequence of the policy and regulation changes the Philippines made in order to come into alignment with the UNFCCC's Sustainable Development Goals and achieve the Nationally Determined Contribution targets under the Paris agreement in 2015. The transition to a low-carbon economy will result in more stranded assets; if banks do not quickly incorporate climate and transition risk into their risk management systems, they may find themselves in a crisis similar to that of 2008.

Transition risk will affect some industries and sectors in a bank's loan portfolio more than others. Among the most severely affected are fossil-based energy plants, production and manufacturing of steel and metal, mining, oil and gas, logistics, shipping, chemicals, and the automotive industry. It is urgently important for commercial banks to establish guidelines, baseline, and metrics for transition risk management to quantify loan exposure and tailor its risk management to identified transition risk assets.

Transition risk also offers opportunities. Banks can provide transitional financing for corporations in carbon-intensive industries to enhance their energy efficiency, or for the development of new technologies, products, and services. Carbon-intensive assets and products will eventually be phased out and replaced with more energy-efficient technology. In the Philippines, the government released a law institutionalizing energy efficiency and conservation across business entities in 2019.² A prime opportunity for banks is funding the replacement power for displaced fossil fuel technology.

Banks and investors could also explore emerging investments like the decentralized generation of energy across the Southeast Asian archipelago and renewable energy development across Southeast Asia's islands.

II. INCREASING GREENHOUSE GAS EMISSION IN THE SOUTHEAST ASIA REGION

The Southeast Asia (SEA) region's greenhouse gas emissions have been increasing for 40 years because its economic growth over this period has been supported by fossil-fuel-based power generation and production. The absolute amount of CO₂ emission per country and per capita in the developing countries is still lower than in developed countries such as the US, Japan, and Germany. The increase in CO₂ emissions could also mean an increase in stranded assets as the region upgrades its policies and technologies.

In a 2019 report, the International Energy Agency (IEA) put the SEA region's total energy supply at 84% fossilfuel-based and 16% renewables. In 2018, the Philippines' coal to renewable energy (RE) ratio was 69.2% to 29.8%, Indonesia's was 74.1% to 25.9%, Thailand's was 78.6% to 21.4%, and Vietnam's was 80.6% to 19.3%. Each country's government has since made an effort to increase RE uptake, but coal-based energy dependence remains high.

Figure 1 Total energy supply by source, Asia Pacific 1990-2019

Source : [Asia Pacific – Countries & Regions - IEA](#)

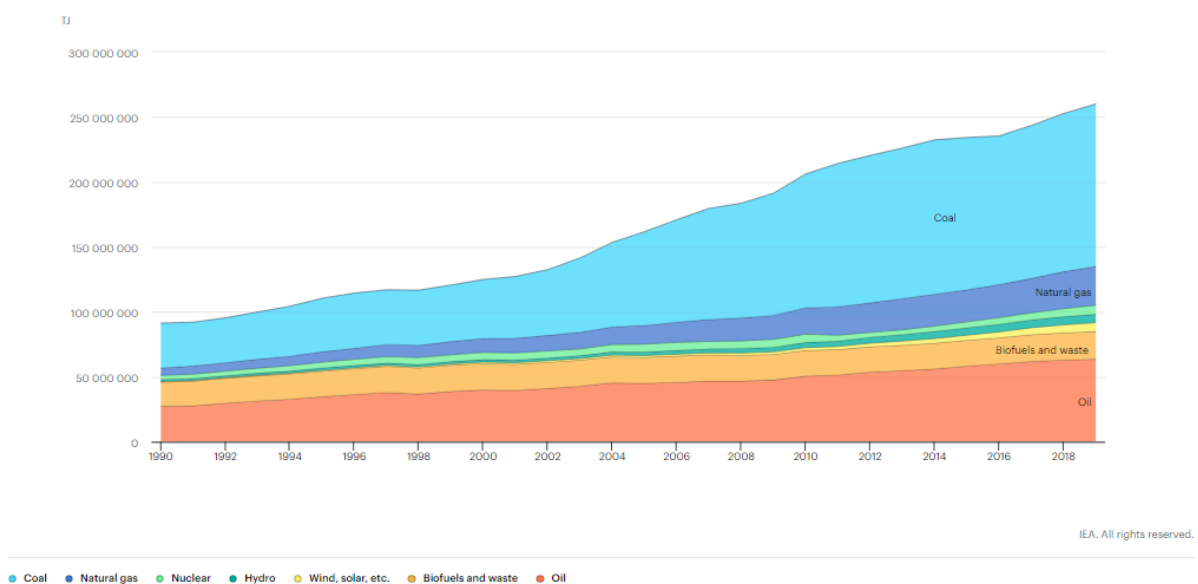
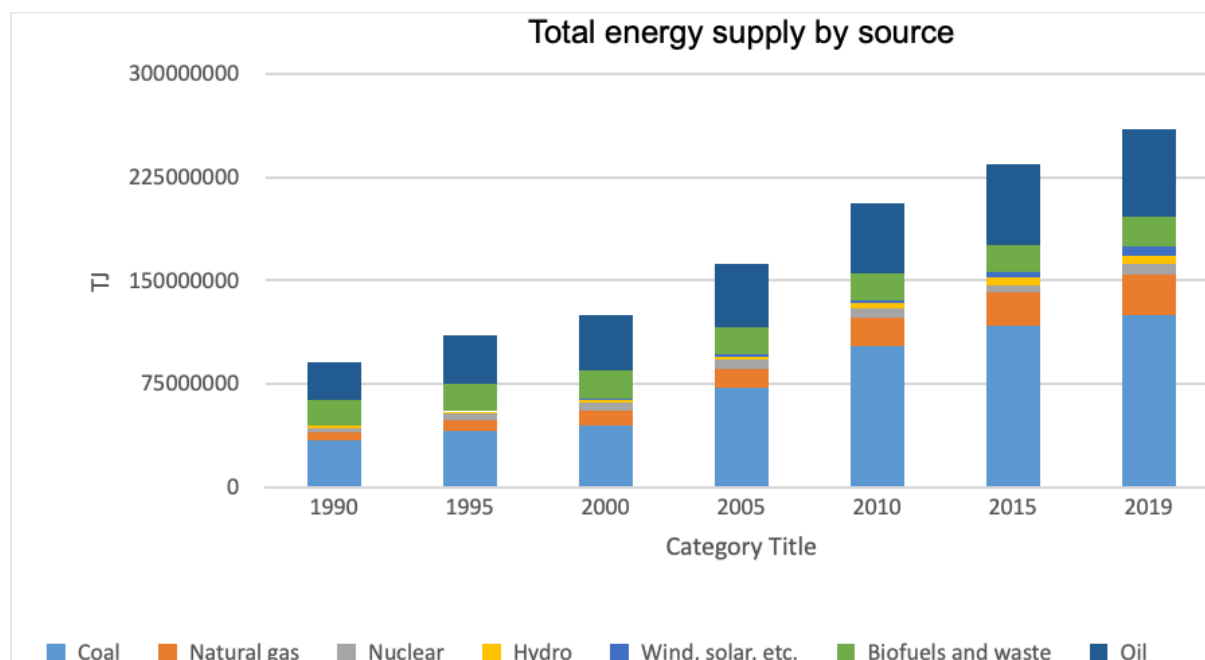


Figure 1 Total energy supply by source, Asia Pacific 1990-2019

Source : [Asia Pacific – Countries & Regions - IEA](#)



There has been sustained high pressure on banks to phase out fossil-fuel-based projects locally and globally, resulting in potential stranded assets with an expected accompanying deterioration in financial stability. In the SEA region, Thailand has the highest CO₂ emission per capita as of 2017, and Indonesia emits the most CO₂ annually—more than 600 million tonnes in 2019 (see Figures 2 and 3)

Figure 2: Per Capita CO₂ Emission in SEA³

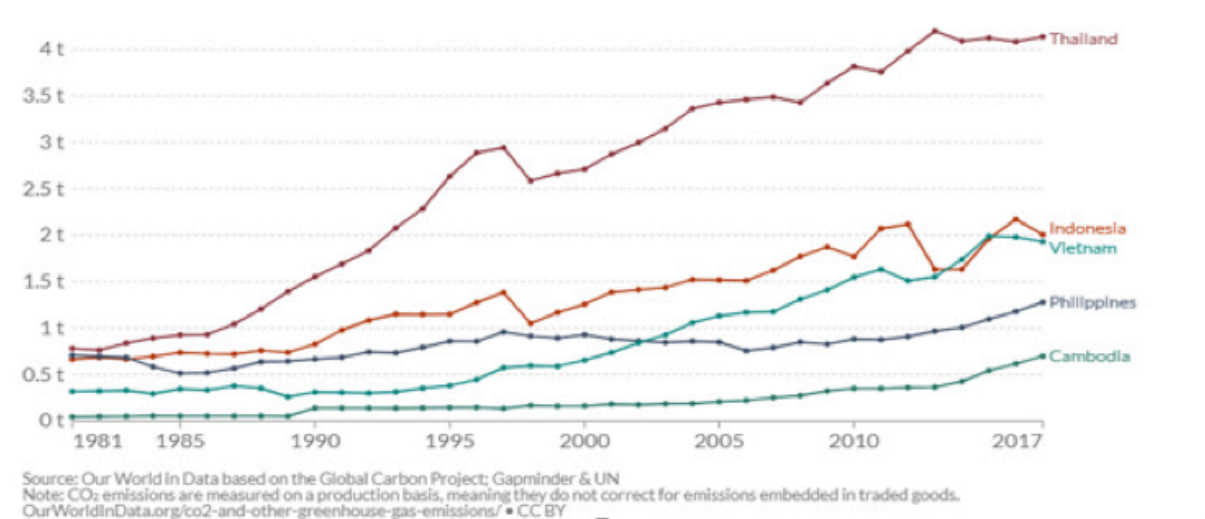
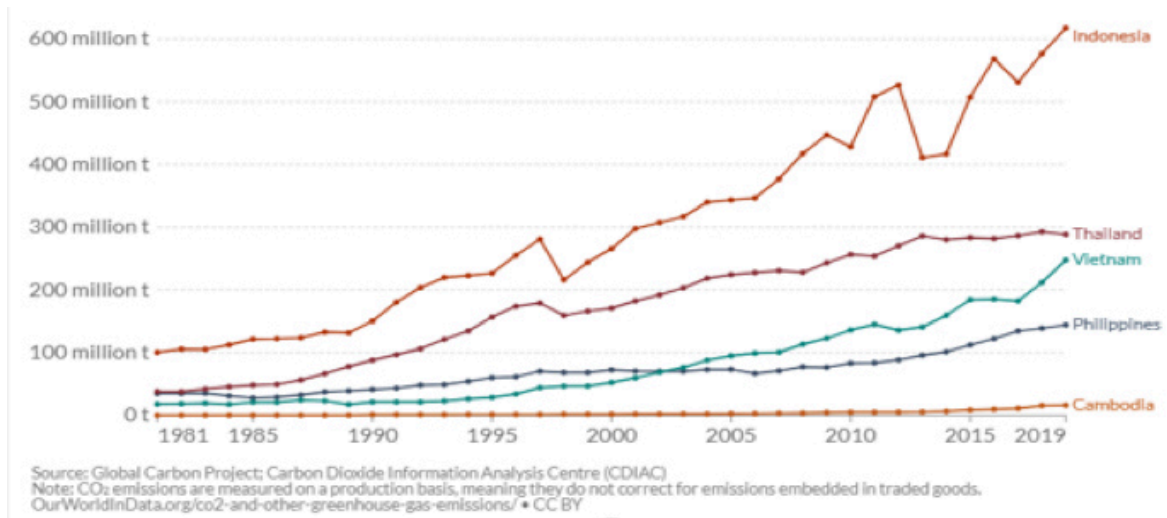


Figure 3: Annual CO2 Emissions in SEA



The IEA anticipates that, under the Stated Policies Scenario, primary energy demand in the SEA region, and other Asian nations, will continuously increase between 2019 and 2030. Accordingly increasing CO2 emission seems unavoidable. Figure 4 shows that primary energy demand⁴ in the Asia region is almost 1,000 Mtoe⁵ per year, and around 250 Mtoe for the SEA region—this high demand is due to dynamic economic growth, with a 4.4% GDP CAAGR growth rate.

Figure 4: Changes in Primary Energy Demand by Fuel and Region in the Stated Policies Scenario, 2019-2030

Source : IEA World Energy Outlook 2020



III. TRANSITION RISK

Transition risk as defined by the International Monetary Fund (IMF) results from changes in climate policy, technology, and consumer and market sentiment during the adjustment to a lower-carbon economy.⁶ Exposure can vary significantly from one country to another, but developing economies are more vulnerable to this type of risk. Transition risk assets are a bank's financed assets affected by changes in policy and technology over the course of transition to a low-carbon economy.

Developing countries in the SEA region mostly rely on carbon-intensive energy utilities financed by commercial banks and so are highly exposed to transition risk. Decarbonization adaptations and changes in policy, markets, law, and technology in the name of climate change mitigation all create potential adjustment costs.⁷

Despite an increasing awareness of the potential impacts of transition risk on financial institutions, the lack of clarity around which activities present a high, medium, or low transition risk is a challenge for commercial banks finding benchmarks to adopt.

Commercial banks in developing countries may refer to the publicly accessible Task Force on Climate-Related Disclosures (TCFD) reports of banks in developed countries and assess their practicality in their own setting. For example, the Mizuho Bank of Japan published its first TCFD report in 2020 and identified the following sectors as having high exposure to transition risk: electric utilities, oil and gas, and coal (see Table 1).

Table 1: Results of Evaluation of Transition Risks and Physical Risks by Sector

Sector	Transition Risk	Physical Risk
Electric Utilities	<i>H</i>	<i>M</i>
Oil & Gas	<i>H</i>	<i>M</i>
Coal	<i>H</i>	<i>M</i>
Logistics	<i>M</i>	<i>M</i>
Automobiles	<i>M</i>	<i>M</i>
Metals & Mining	<i>M</i>	<i>M</i>
Chemical	<i>M</i>	<i>M</i>
Agriculture, Food & Forestry	<i>M</i>	<i>H</i>
Steelmaking	<i>M</i>	<i>M</i>
Real Estate	<i>L</i>	<i>H</i>

Source: Mizuho TCFD Report. Our Climate Risk Disclosure (2020) Retrieved from <https://www.mizuhogroup.com/sustainability/mizuhocr/report>

It is worthwhile to refer as well to the TCFD report of a global bank such as Citibank. The Citibank 2020 TCFD Report⁸ described the following sectors as highly exposed to transition risk: oil and gas, electric utilities, gas utilities, independent power producers and service operators, automobile manufacturers, auto parts and equipment, shipping and maritime logistics, building products and related industries, energy minerals, iron, steel and aluminum, and chemicals (see Table 2).

Both banks' reports discussed common high-transition-risk sectors such as oil and gas, and electric utilities. Citibank's report went into more granular detail, listing sub-sectors under each industry, though it did not include specific carbon metrics in its identification of high-risk sectors.

Table 2: Climate Risk Heat Map and Credit Exposure

CLIMATE RISK HEAT MAP AND CREDIT EXPOSURE

	2018	2019	2020				Climate Risk	
			as of September 30, 2020					
\$ in Millions	Total \$ Amount	Total \$ Amount	Total \$ Amount	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
Energy & Commodities¹	49,698	53,317	51,035	6.6%	16,244	4.7%		
Integrated Oil & Gas	13,513	12,883	13,886	1.8%	3,797	1.1%	High	Moderate
Oil & Gas Exploration & Production	12,803	15,682	14,228	1.8%	4,950	1.4%	High	Moderate
Oil & Gas Storage & Transportation	7,005	6,967	7,273	0.9%	1,856	0.5%	High	Moderate
Oil & Gas Refining & Marketing	9,255	9,611	7,409	1.0%	2,988	0.9%	High	Moderate
Oil & Gas Equipment, Services, and Drilling	4,361	5,562	5,285	0.7%	1,156	0.3%	High	Low
Other	2,762	2,611	2,954	0.4%	1,498	0.4%	High	Moderate
Power	27,200	34,349	28,408	3.7%	6,665	1.9%		
Alternative Energy	1,595	2,052	2,621	0.3%	1,065	0.3%	Low	Moderate
Electric Utilities	7,655	13,056	6,744	0.9%	2,521	0.7%	High	Moderate
Gas Utilities	1,745	1,667	1,554	0.2%	704	0.2%	High	Moderate
Independent Power Producers & Service Operators	2,872	2,679	3,446	0.4%	609	0.2%	High	Moderate
Multi-Utilities	11,265	12,942	11,767	1.5%	1,352	0.4%	High	Moderate
Other	2,068	1,952	2,275	0.3%	414	0.1%	Low	Moderate
Transportation	74,583	78,588	79,863	10.3%	39,911	11.6%		
Autos	48,175	48,604	51,039	6.6%	24,191	7.0%	High	Low
Automobile Manufacturers	16,421	15,355	16,429	2.1%	7,689	2.2%	High	Low
Auto Parts & Equipment	2,107	2,544	10,405	1.3%	4,493	1.3%	High	Low
Auto-Related Financing, Leasing, and Rentals	18,528	17,899	19,947	2.6%	9,900	2.9%	Low	Low
Other	11,119	12,806	4,258	0.6%	2,110	0.6%	Low	Low
Aviation	9,726	11,558	10,934	1.4%	6,104	1.8%	High	Moderate
Shipping & Maritime Logistics	10,384	10,583	10,848	1.4%	7,379	2.1%	High	Moderate
Logistics	6,297	7,842	7,043	0.9%	2,237	0.7%	Moderate / High	Moderate
Industrials	58,974	68,055	67,072	8.7%	22,968	6.7%		
Building Products & Related	8,072	8,885	8,380	1.1%	2,756	0.8%	High	Moderate / Low
Capital Goods	39,432	44,321	43,988	5.7%	13,613	4.0%	Moderate / Low	Moderate / Low
Paper Forest Products & Packaging	6,858	7,288	6,848	0.9%	3,587	1.0%	Moderate	High
Professional Services	4,612	7,561	7,856	1.0%	3,013	0.9%	Low	Low

	2018	2019	2020				Climate Risk	
			as of September 30, 2020					
\$ in Millions	Total \$ Amount	Total \$ Amount	Total \$ Amount	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
Metals & Mining	16,540	15,891	13,476	1.7%	6,158	1.8%		
Energy Minerals²	967	822	765	0.1%	199	0.1%	High	Moderate
Iron, Steel & Aluminum	9,415	8,935	6,715	0.9%	3,708	1.1%	High	Moderate
Other	6,158	6,134	5,996	0.8%	2,250	0.7%	Low	Moderate
Chemicals	20,295	23,721	22,883	3.0%	8,124	2.4%	High	Moderate
Cons Retail & Health	95,607	116,346	112,915	14.6%	43,015	12.5%		
Food Beverage & Tobacco	31,998	36,060	33,403	4.3%	15,487	4.5%	Moderate	High
Other	63,609	80,286	79,511	10.3%	27,529	8.0%	Low	Low
Real Estate	50,883	55,518	62,489	8.1%	42,197	12.3%	Moderate	High
Financial Institutions³	78,376	94,789	86,172	11.1%	35,750	10.4%	Moderate	Moderate / Low
Insurance	26,020	24,305	25,990	3.4%	2,208	0.6%		
Property & Casualty Insurance	5,607	5,429	6,430	0.8%	1,050	0.3%	Moderate	High
Reinsurance	6,369	6,093	5,874	0.8%	64	0.0%	Moderate	High
Other	14,045	12,784	13,686	1.8%	1,093	0.3%	Moderate	Low
Private Bank	85,392	102,463	107,351	13.9%	70,030	20.4%	Low	Moderate / Low
Public Sector⁴	30,327	27,194	26,267	3.4%	13,723	4.0%	Moderate	Moderate
Tech, Media & Telecom	81,817	83,199	79,659	10.3%	31,136	9.1%	Low	Low
Other Industries	17,777	16,842	10,477	1.4%	5,561	1.6%	Low	Low
Total	713,490	794,576	774,057	100.0%	343,690	100.0%		

Source: 2020 TCFD Report: Retrieved from <https://blog.citigroup.com/2020/12/2020-tcf-report-our-climate-risk-disclosure/>

Commercial banks can also refer to a given country's national GHG inventory to see what it identifies as high-transition-risk sectors according to its own parameters. The Philippines, for example, has identified the energy and agriculture sectors as carbon-intensive non-land use change and forestry (LUCF) sectors; these account for 65% of the total GHG emission inventory (see Figure 5).⁹ Similarly, Thailand's GHG inventory revealed that the energy sector accounts for 74.35% of GHG emissions, and agriculture for 15.98% (see Figure 6).¹⁰ A weakness of this tool is a lack of up-to-date data; there can be more than 10 years between inventories. Despite this, the data still shows which industries are most carbon intensive.

Figure 5: 2010 Philippine's National GHG Emissions and Removals¹¹

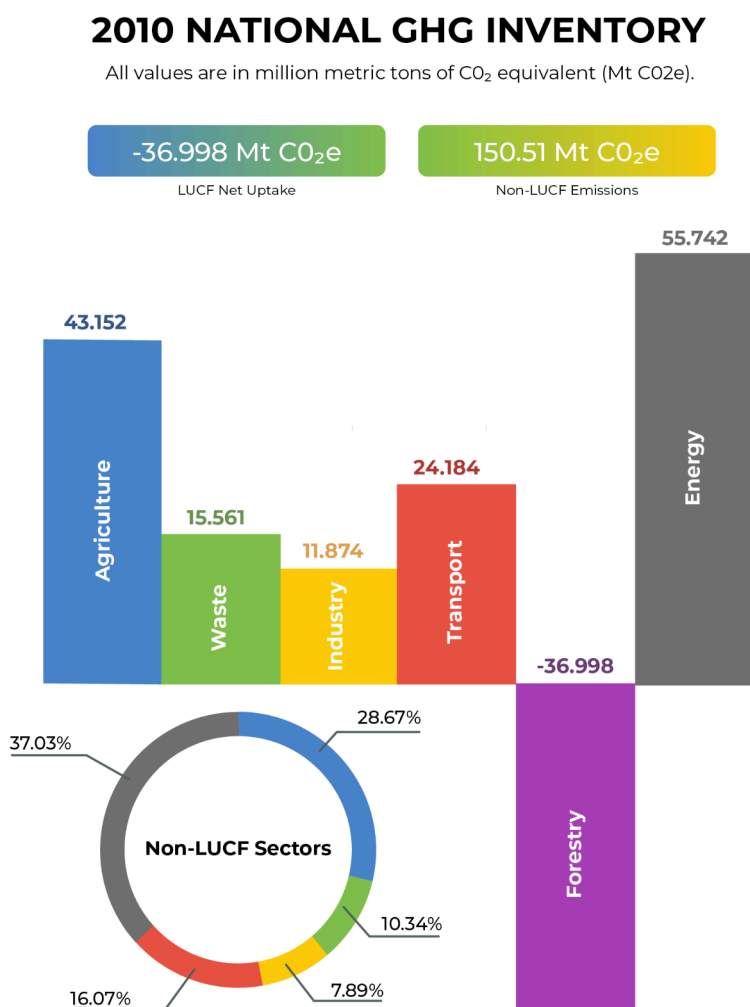
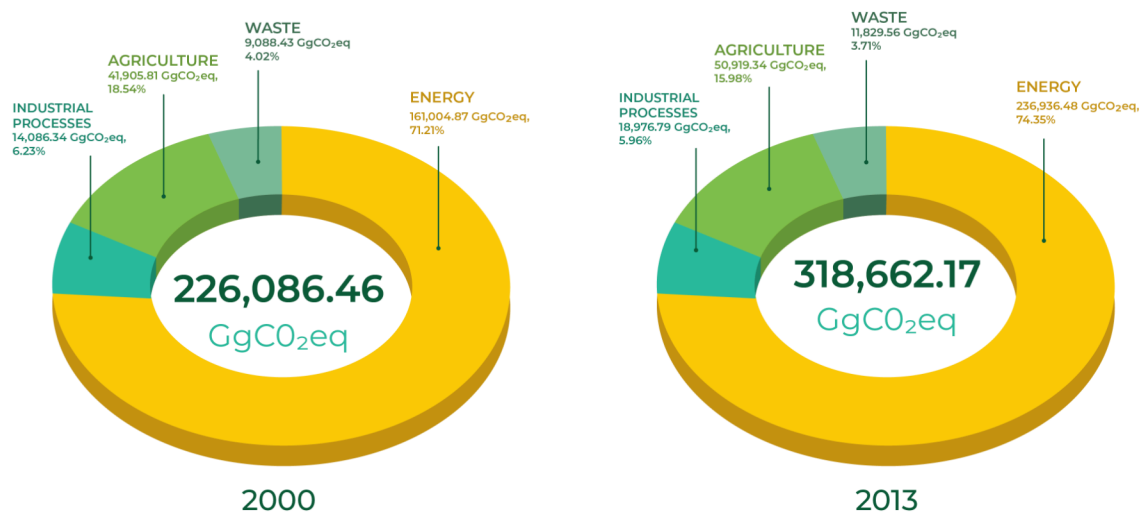


Figure 6: Thailand's 2000 and 2013 Total GHG Emissions by Sector¹²



Currently there are no standardized transition risk parameters for banks. Commercial banks should develop management strategies, consult with regulatory agencies such as central banks, and use international and local peer industry benchmarking to establish their own parameters in alignment with TFCD standards.

IV. POTENTIAL IMPACT OF TRANSITION RISK FACTORS

Transition risk management frameworks should be tailored to each bank. Banks should identify their own transition risk assets, quantify loan exposure and its impacts, and eventually stress-test. To properly map out transition risk assets in a bank's loan portfolio, it is imperative to understand the driving forces behind transition risk, such as policy changes, legal implications, the shift to low-carbon technology, and market demand for decarbonization. Mitigating solutions and strategies should be based on current key drivers of transition risk.

Table 3: Potential Effects of Climate Risk Drivers

Risk	Potential effects of climate risk drivers (physical and transition risks)
Credit risk	Credit risk increases if climate risk drivers reduce borrowers' ability to repay and service debt (income effect) or banks' ability to fully recover the value of a loan in the event of default (wealth effect).
Market risk	Reduction in financial asset values, including the potential to trigger large, sudden and negative price adjustments where climate risk is not yet incorporated into prices. Climate risk could also lead to a breakdown in correlations between assets or a change in a market liquidity for particular assets, undermining risk management assumptions.
Liquidity risk	Banks' access to stable sources of funding could be reduced as market conditions change. Climate risk drivers may cause banks' counterparties to draw down deposits and credit lines.
Operational risk	Increasing legal and regulatory compliance risk associated with climate-sensitive investments and businesses.
Reputational risk	Increasing reputational risk to banks based on changing market or consumer sentiment.

Source: Climate related risk drivers and their transmission channels, Bank for International Settlements (2021)

1 EXAMPLE OF POLICY CHANGES

In 2020, the Central Bank of the Philippines released its Sustainable Finance Framework.¹³ Within this framework, financial institutions would examine their current portfolios and identify climate-risk associated assets to ensure financial stability. There would be mandated climate-risk stress testing; this would integrate environmental and social, physical, and transition risks to business operation arising from climate change to achieve a holistic risk management system.

► **IMPACT: HOW WILL BANKS CHANGE WITH THIS NEW POLICY?**

New regulatory policies, such as the Sustainable Finance Framework and the Department of Energy's coal moratorium, have positive ESG impacts but inevitably leave banks with potential stranded assets. Accordingly, banks should integrate ESG concerns into their financing, quantifying current risk exposure and risk appetite; this will improve resilience in the face of climate change. Since banks can influence the ESG risk management of their financial value chains, they can enhance a nation's economic sustainability by expediting its transition to a low-carbon economy. In this way, incorporating ESG risk management into banking could accelerate the Philippines' fulfillment of its NDC commitments under the Paris Agreement.

2 EXAMPLE OF LEGAL IMPLICATIONS

HSBC and Barclays were challenged by a legal group over a Japanese bond that pledged to contribute to the financing of coal-fired power in Vietnam. While both have policies against financing new coal plants, the complaint focused on their alleged role in financing others who finance such projects. Engaging in indirect financing against their climate commitments presents a potential legal challenge for banks.¹⁴

► **IMPACT: HOW CAN BANKS OVERCOME THESE CLAIMS?**

Even after announcing policies against financing new coal plants, it can be complex for banks to withdraw financing from existing coal assets, or to halt investment activities that provide indirect financing to coal power plants. A discrepancy between a bank's climate commitments and its actual withdrawal of financing can damage its reputation and therefore its profitability and stability. Banks should work to continuously increase sustainable financing and phase out coal financing in their loan portfolios.

3 **EXAMPLE OF DEMAND FOR DECARBONIZATION**

At least 50 civil society organizations (CSO) protested the building of new coal-fired power plants in the Philippines. They called on the president to take action against the climate impact of coal power plants, and called on financial institutions to stop financing these projects.¹⁵

► **IMPACT: WHAT HAPPENS TO BANKS AND MARKETS AFTER CSO PROTESTS?**

In 2020, in response to the efforts of CSOs and other stakeholders, the Department of Energy (DOE) announced a moratorium on new coal plants. Banks are consequently cautious about financing any new coal plants or have already made internal policies against financing them, and have strengthened their monitoring of carbon-intensive projects, and their ESG risk management, especially for fossil fuel projects. The Central Bank's Sustainable Finance Framework and the DOE's coal moratorium have thus accelerated the transition to sustainable finance.



V. MOVING FORWARD

Sustainable finance practice plays a vital role in financing less carbon-intensive technologies and shifting energy utilities toward renewable energy projects. Potential changes in carbon policy, taxes, legal considerations, market demand, and energy-saving measures will all drive commercial banks to find solutions to transition risks, with an accompanying integration of transition risk into credit risk management. The transition to a low-carbon economy can be accelerated if the following recommendations are followed.

RECOMMENDATIONS FOR COMMERCIAL BANKS

- 1** Use transition risk asset management to create a business opportunity: providing transitional financing. Transitional financing is providing any form of financial instrument to support carbon-intensive industries through the transition to a low-carbon economy, such as a transitional loan or bond that covers the financing or refinancing of projects intended to reduce GHG emissions. It functions like a bridge for the company as it works towards sustainability targets such as net zero¹⁶ carbon emission. Board-level approved GHG emission reduction targets should be set through sustainable business practices including transitional financing. Regulating the balance of carbon emissions and avoidance through sustainable and transitional financing can help banks quickly meet sustainability targets. Setting these targets can enhance a bank's reputation, improve its competitiveness and capacity for innovation, increase its resilience to further regulatory policy changes, and provide increased investment confidence to stakeholders.
- 2** Conduct mapping of all carbon-intensive loans and encourage clients to pursue low-carbon technologies and make use of the bank's transitional financing.

- 3 Limit credit exposure to carbon-intensive sectors by setting up a ceiling on loan exposure as part of the bank's internal risk management policy, similar to the Philippines Real Estate Loan Limit.¹⁷
- 4 Limit loan exposure to individual corporations in carbonintensive sectors using the Sustainable Finance Framework or with an internal policy similar to the single borrower's limit.¹⁸
- 5 Develop digital platforms for sustainable finance, ESG, physical, and transition risk data collation. The dashboard can include details such as metrics and can generate reports for strategic management purposes, forming baselines for the bank's sustainability targets.
- 6 Develop ESG, physical, and transition risk training that can be deployed across the staff of commercial banks. This is a channel through which to communicate the bank's sustainable finance goals and show how each staff member can contribute to the achievement of targets.

RECOMMENDATIONS FOR POLICY MAKERS

- 1 If a bank has loan exposure to coal plant projects directly, the government could charge indirect carbon tax to that bank. This will discourage the bank from lending to coal plant projects as taxes will affect the bottom line.
- 2 If loan exposure to transition risk assets is higher than a designated percentage of total loan portfolio, the central bank could require an appropriate increase in capital provision. Conversely, if loan exposure to sustainable-finance-eligible assets is increased or goes beyond a prescribed limit, the central bank could reduce the capital reserve for the commercial bank as an incentive.

- 3 There should be specific time-based targets for adoption of a net carbon zero policy across commercial banks, including strict quantification of Scope 1, 2, and 3 GHG emission baselines.
- 4 A transitional risk taxonomy should be established for commercial banks. This should provide the GHG emission range for various sectors, such as energy, agriculture, oil and gas, mining, chemicals, shipping and aviation, and other sectors that can have a negative effect on the environment and community.



VI. ENDNOTES

¹<https://www.investopedia.com/articles/economics/09/financial-crisis-review.asp>

²<https://www.doe.gov.ph/laws-and-issuances/republic-act-no-11285?ckattempt=1>

³<https://ourworldindata.org/co2/country/philippines>

⁴Primary energy demand covers final energy consumption by end users, consumption of the energy sector itself, and losses during transformation.

⁵Million tonnes of oil equivalent (Mtoe) is a unit of energy used to describe the energy content of all fuels, typically on a very large scale.

⁶<https://www.imf.org/external/pubs/ft/fandd/2019/12/climate-change-central-banks-and-financial-risk-grippa.htm>

⁷<https://www2.deloitte.com/gr/en/blog/risk-advisory/2020/financial-risks-stemming-from-climate-change.html>

⁸<https://blog.citigroup.com/2020/12/2020-tcdf-report-our-climate-risk-disclosure/>

⁹<https://psa.gov.ph/sites/default/files/8.4.3%20Institutionalizing%20the%20Philippine%20Greenhouse%20Gas%20Inventory%20Management%20and%20Reporting%20System%20.pdf>

¹⁰<https://unfccc.int/sites/default/files/resource/Thailand%20TNC.pdf>

¹¹As of 2021, National GHG Inventory in 2010 is most updated quantification data in the Philippines

¹²As of 2021, National GHG Emission by Sector in 2013 is most updated quantification data in Thailand

¹³<https://www.philstar.com/business/2020/05/03/2011352/bsp-issues-guidelines-sustainable-finance-framework>

¹⁴<https://www.reuters.com/article/uk-climate-change-hsbc-barclays/hsbc-barclays-challenged-over-bond-linked-to-vietnamese-coal-project-idUKKBN2AO138>

¹⁵<https://www.eco-business.com/news/filipinos-march-for-a-ban-on-coal-expansion/>

¹⁶Net zero in financing refers to achieve the balance between emission produced by carbon intensive asset financing and emissions avoidance by sustainable finance.

¹⁷Real estate loan limit of universal and commercial banks at certain percentage of bank's available loanable funds. In the Philippines, it has increased from 20% to 25% of capital in 2020.

¹⁸The SBL limits lending of a bank to a single client at certain percentage of client's asset. In the Philippines, SBL was 25% and increased to 30% during the pandemic.

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