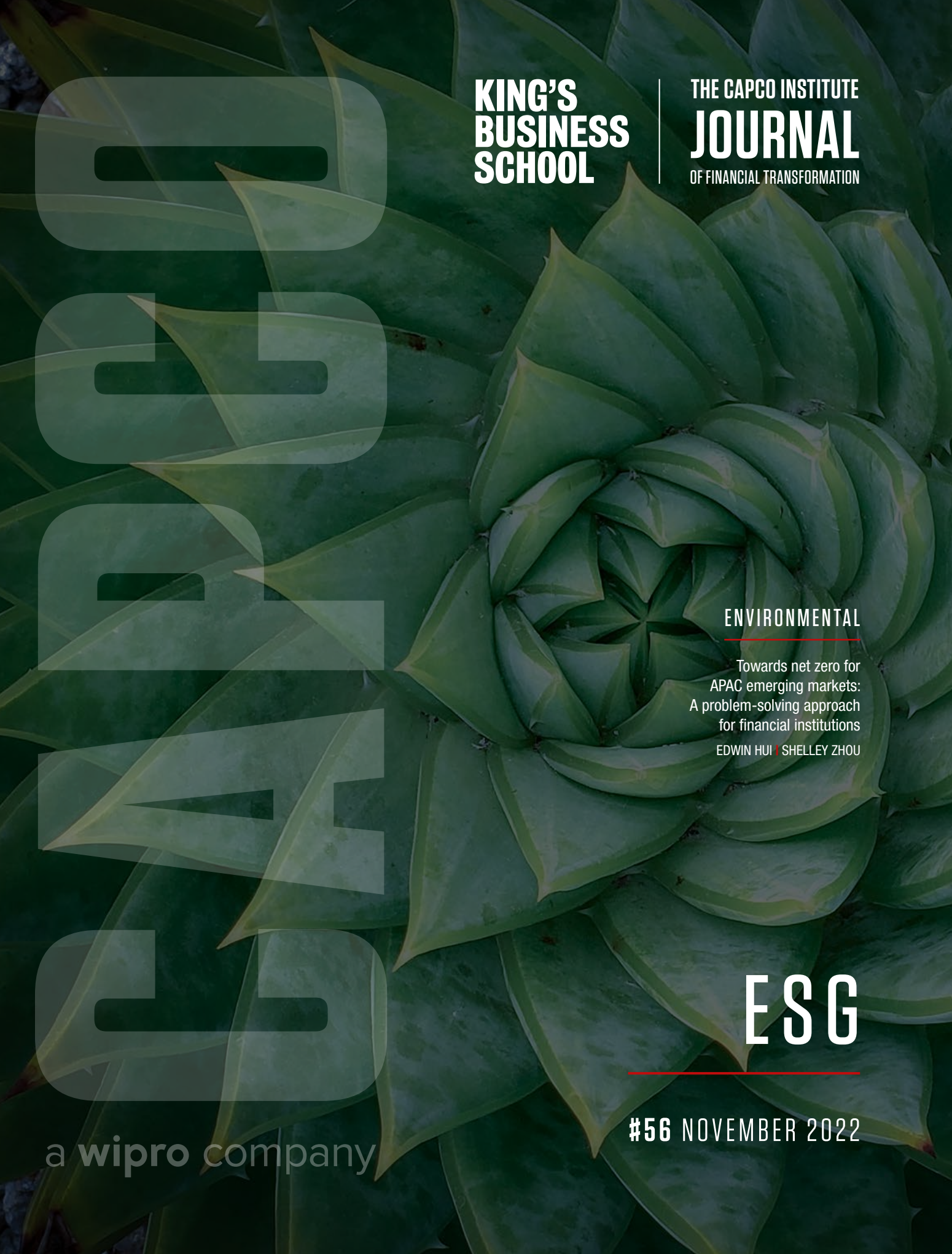

KING'S BUSINESS SCHOOL

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ENVIRONMENTAL

Towards net zero for APAC emerging markets: A problem-solving approach for financial institutions

EDWIN HUI | SHELLEY ZHOU

ESG

#56 NOVEMBER 2022

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DEAR READER,

Welcome to edition 56 of the Capco Institute Journal of Financial Transformation, produced in partnership with King's Business School and dedicated to the theme of ESG – environmental, social and governance.

We all recognize that transformation towards a green economic system via sustainable finance is needed, welcome and inevitable. Our clients have a crucial role to play here. Acknowledging the scope and complexity of the evolving ESG landscape, we are perfectly positioned to prepare them for the ESG era.

With climate change accelerating and generating physical events on an unprecedented scale, governments and societies are considering measures to mitigate carbon emissions via net zero initiatives. The focus is firmly on greater sustainability and more equitable policies in response to shifting public attitudes. ESG considerations are reshaping investment risks on the one hand, and opening the way for green financing and sustainable technologies and innovations on the other.

This edition of the Journal examines all three pillars – environmental, social, and governance, highlighting efforts by regulators and practitioners to create a unified approach.

Moving forward, compliance with emerging ESG standards will be a critical differentiator for long-term business success. Data will also play a critical role in delivering the transparency and insights required to validate the ESG credentials of businesses, and investment strategies. Advances in areas such as machine learning, artificial intelligence and cloud technologies will be key to establishing a future model of sustainable finance.

This edition draws upon the knowledge and experience of world-class experts from both industry and academia, covering a host of ESG topics and innovations including the value of tracking Return on Sustainability Investment (ROSI) and the importance of moving away from purely external risks to addressing issues that can have positive commercial and societal impacts.

I hope that that the research and analysis within this edition will prove valuable for you as you shape your own ESG strategies, policies, and innovation.

Thank you to all our contributors and thank you for reading.

Lance Levy, **Capco CEO**

TOWARDS NET ZERO FOR APAC EMERGING MARKETS: A PROBLEM-SOLVING APPROACH FOR FINANCIAL INSTITUTIONS

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ABSTRACT

Global greenhouse gas (GHG) emissions and worries about climate risk are continuing to drive environmental, social and governance concerns to the top of the global business agenda, with emerging markets (EM) and developing economies increasingly under the spotlight. These economies represent two-thirds of global CO_2 emissions, with China alone accounting for one-third, and will generate the bulk of the growth in future emissions.[1] Their actions on climate change will determine if the global 2050 net zero target can be met. In turn, APAC financial institutions, as pipelines of capital in the region, have become a critical factor in the success of climate change action and related ESG initiatives. This paper explores some key questions faced by financial institutions (FI) with an APAC EM focus: how ready is APAC EM for the transition, in the light of the most recent climate commitments brought about by COP26; how can financial institutions establish a net zero strategy for decarbonizing portfolios that is science-led, robust and verifiable by investors and regulators; and what are the implications for establishing robust ESG data strategies and the technologies that support them?

1. RECENT CLIMATE COMMITMENTS: WHAT DO THEY MEAN FOR THE FINANCIAL SECTOR

Last autumn's COP26 left the world with a long "to-do" list that has many implications for the APAC region and for how investors and lenders make their financing decisions. Here is a snapshot of the key events and how they impact APAC EM:

- **500 FIs announced a new U.S.$130 trillion climate finance commitment** through the Glasgow Financial Alliance for Net Zero (GFANZ) to make up for the missed COP15 target.[2] While the capital amount is very large and might seem to be sufficient, what the commitments will mean in practice and whether there are enough suitable projects coming to market at the requisite speed remains questionable.
- **Extended commitments to cut methane – not just CO_2** – were made by 110 countries representing 50 percent of global methane emissions. The Global Methane Pledge aims to reduce methane emissions by at least 30 percent from 2020 levels by 2030.[3] Agriculture, energy, and waste are the largest anthropogenic source of methane.[4] Yet China, India, and Russia, who collectively account for one-third of global methane emissions, were absent from the agreement.

[1] https://bit.ly/3BwkKHF; https://bit.ly/3qJLmzM
[2] Transferring U.S.$100 billion climate finance a year by 2020 from developed to developing countries.
[3] https://bit.ly/3RWt9KS
[4] https://bit.ly/3eNEiiZ

- **Energy transition is speeding up, although there has been debate over coal "phase-out" versus "phase-down":** more than 40 countries have committed to phase out coal by 2040, including major coal-using APAC countries such as South Korea, Indonesia and Vietnam, though not China and India.[5] Beyond Oil and Gas Alliance (BOGA) was launched at COP26, backed by 11 countries, with the aim of ending national oil and gas exploration and extraction. Yet, no APAC countries have so far joined.[6]
- **There is a new commitment to end deforestation:** as 141 world leaders representing over 90 percent of the world's forests, including China, Indonesia, Malaysia and Vietnam, joined the Glasgow Leaders' Declaration on Forests and Land Use to end and reverse forest loss and land degradation by 2030.[7] Twelve donor countries are committing U.S.$12 billion of public funds alongside U.S.$7.2 billion of private investment. Over 30 financial companies are ending investments in activities linked to deforestation.
- **The Common-Ground Taxonomy (CGT)**,[8] published at COP26 analyses the commonality between the E.U. Taxonomy and China's developing taxonomy[9] in the classification of "environmentally sustainable" economic activities. Although it is not a designed to be a legal document, it will be referenced by regulators in APAC markets for local taxonomy development, and by investors who are approaching climate-themed investment in China. In Hong Kong, regulators have announced their intention to adopt CGT.[10]
- **Key discussions and advances in global emission pricing were made:**
  - A side event was hosted during COP26 to examine the global context of the E.U.'s proposed Carbon Border Adjustment Mechanism (CBAM), which will impose a levy on embedded carbon in E.U. imports in order to prevent "carbon leakage".[11] CBAM will initially cover the cement, iron and steel, fertilizer, aluminum, and electricity sectors, and is expected to increase the trading costs of some of the largest APAC EM exporters including China, India, and South Korea.
  - 200 governments have reached a conclusion on the rules governing global emission reduction trading, including a framework that tries to fix the thorny issue of "double counting" as well as a newly formed supervisory body to oversee the carbon crediting mechanism. The Glasgow rulebook makes it clear that countries where a CO_2 offset credit is generated must remove this reduction from their overall emission budget if another country uses it to reach their nationally determined contribution (NDC).[12]
- **Regulators are announcing mandatory climate disclosure regulations**,[13] to promote more transparent and consistent information about a company's impact on climate change. This is supported by increasing efforts to integrate climate change financial reporting standards. For example, the IFRS Foundation announced the establishment of a new board to help develop climate-related disclosure standards.[14]

2. APAC EMERGING MARKETS IN NET ZERO TRANSITION: ESG INVESTOR PAIN POINTS

2.1 APAC EM decarbonization commitments and readiness

The financial sector is now in agreement that examining climate change related financial risk is no longer a question of "why" or "when", but "how". Before and during COP26, a substantial number of financial industry-led pledges and initiatives[15] were formed, covering all types of financial institutions (hereafter 'FIs' or 'firms') and market players including banks, asset managers, asset owners, insurers and service providers. These share one goal: to channel more sustainable finance towards supporting the net zero transition.

[5] https://nyti.ms/3d9JxZH
[6] https://bit.ly/3U6cMgD
[7] https://bit.ly/3QJPUAx
[8] Published by International Platform on Sustainable Finance, an international forum co-chaired by the E.U. and China with 18 members including Hong Kong, launched in 2019 with the aim of increasing private capital flows to environmentally sustainable investments (https://bit.ly/3BAE1sn).
[9] IPSF refers to the Green Bond Endorsed Project Catalogue (2021 Edition) as providing the most up-to-date, unified, and clear green definitions at the activity and project level in China. China has yet to develop a taxonomy for purposes other than green bonds (https://bit.ly/3qxfJJx).
[10] Refers to Securities and Future Commission and Hong Kong Monetary Authority. https://bit.ly/3Dmx93h
[11] According to the European Commission, risk of carbon leakage arises when companies based in the E.U. could move carbon-intensive production abroad to take advantage of lax standards, or E.U. products could be replaced by more carbon-intensive imports (https://bit.ly/3DtuZyG).
[12] https://bit.ly/3QGPoTU
[13] https://bit.ly/3DmHo7I
[14] To date, 144 jurisdictions around the world require the use of IFRS Standards for all or most publicly listed companies (https://bit.ly/3U4IL0C).
[15] Including Race to Zero Campaign, Net Zero Asset Manager Initiative, Net Zero Asset Owner Alliance, Net Zero Banking Alliance, Glasgow Financial Alliance for Net Zero (launched in COP26), Net Zero Insurance Alliance, Net Zero Financial Service Providers Alliance and Net Zero Investment Consultants Initiative.

Table 1: Data coverage for companies in the world's two largest emitters remains low

	PRESENCE OF ESG DISCLOSURE GUIDANCE17	GHG EMISSION METRIC COVERED BY THE GUIDANCE	PRESENCE OF ANNUAL ESG DISCLOSURE MANDATES FOR ALL LISTED COMPANIES	PERCENTAGE OF LISTED COMPANIES PUBLISHED/ REQUIRED TO PUBLISH ESG REPORT (OUT OF ALL LISTED COMPANIES)
MAINLAND CHINA	Yes	Carbon emission covered in MEE's latest disclosure rules, but not yet in stock exchanges' guidelines	Now: No Future: Stock exchanges guidelines update in progress	24% (2021 data)
INDIA	Yes	Yes	Now: No Future: No	14% (2021 estimate)
INDONESIA	Yes	Yes	Now: Yes Future: Yes	100%
MALAYSIA	Yes	Yes	Now: Yes Future: Yes	100%

Source: Sustainable Stock Exchange Initiative ESG Disclosure Guidance Database.
https://bit.ly/3BBvrtq; https://bit.ly/3Dk4NGQ; https://bit.ly/3Bzs0Ui; https://bit.ly/3RUM74u; https://bit.ly/3d4VzDT; https://bit.ly/3BeBiUj; https://bit.ly/3RQ3q6S; https://bit.ly/3qzo1AF; https://bit.ly/3QEOrf0; https://bit.ly/3LccRLz

Table 2: Current national decarbonization actions fall short of Paris Agreement 1.5°C commitment

	EMISSION REDUCTION TARGET		HISTORICAL PERFORMANCE		PROJECTED PERFORMANCE BASED ON CURRENT POLICY AND ACTIONS		
	BY 2030 FROM 2005 LEVEL	-	2020 LEVEL VERSUS 2005 LEVEL		2030 LEVEL VERSUS 2005 LEVEL		
	2021 updated NDCs (emission intensity in CO_2e per unit of GDP, unless specified)	Pledged to go net zero by	Change in absolute emission (CO_2e)	Change in GDP (million US$)	Projected change in absolute emission (CO_2e)	Required change to align with 1.5°C ambition	Are current policies and actions sufficient to meet the 1.5°C ambition?
CHINA	-65% emission intensity in CO_2 per unit of GDP	2060	+78% (+81% for CO_2 emission)	+544%	+78%	-17%	No
INDIA	Not updated, although a new 45% target was announced	2070	+62%	+224%	+118%	-8%	No
INDONESIA	29% unconditional and 41% conditional absolute CO_2e reduction relative to 2030 projected BAU level	2060	+42%	+270%	+93%	-28%	No
MALAYSIA	45% unconditional emission intensity CO_2e per unit of GDP	2050	+140%	+235%	+187%	-44%	No

Source: UNFCCC NDC Registry, GDP data from the World Bank, historical and scenario data (policies and action, modeled domestic pathways) from Climate Action Tracker by Climate Analytics and NewClimate Institute and 1.5°C national pathway explorer by Climate Analytics.
https://bit.ly/2E3fYom; https://bit.ly/2srGZKW; https://bit.ly/3decfZl; https://bit.ly/3REcY5i; https://bit.ly/3U452f3; https://bit.ly/3Ua90Tl

Table 3: China and India have no concrete plan to phase out coal, the largest source of carbon and methane emissions

	GLOBAL COAL CONSUMPTION (PERCENTAGE OF WORLD TOTAL, 2020 DATA)	COAL POWER CAPACITY (PERCENTAGE OF WORLD TOTAL, 2020 DATA)			COMMITMENT TO PHASE OUT COAL
		OPERATING	UNDER-CONSTRUCTION	PLANNED	
CHINA	52%	55%	50%	36%	Peak consumption in 2025 and gradually phase down
INDIA	13%	13%	18%	10%	No phase out, but phase down, 50% on RE by 2030
REST OF ASIA	12%	11%	24%	29%	Indonesia – phase out by 2040s Vietnam – phase out by 2040s Singapore – phase out by 2050 Korea – phase out by 2050

Source: International Energy Agency, Carbon Brief based on data from Global Energy Monitor.
https://bit.ly/3QU5mKR; https://bit.ly/2xlRkbD; https://bbc.in/3RXQvj7

For investors with exposure to APAC EM, the question is: how ready is the APAC EM for the net zero transition; and what are the key challenges or constraints that investors face if they try to finance net zero? A quick scan of the key APAC EM markets leads us to the following two observations, based on findings summarized in Tables 1 to 3:

- **Data for fundamental ESG analysis:** availability and coverage are improving but remain questionable.
- **Commitment versus performance:** national climate action plans regarding emission mitigation are ambiguous or not ambitious enough.

2.2 Business problems that FIs need to address

The current ESG landscape gives rise to several challenges for FIs with exposure to APAC EM, regardless of the maturity of their climate and carbon strategy:

- **Problem 1:** how to monitor climate risks in relation to investment and credit?
- **Problem 2:** decarbonizing portfolios – what are the priorities and key approaches?
- **Problem 3:** how to overcome the challenge of ESG data quality and sourcing? We explore these challenges in the next section.

3. CLIMATE STRATEGY FROM INITIATION TO IMPLEMENTATION: DEFINING AND QUANTIFYING MATERIAL CLIMATE CHANGE IMPACTS

3.1 Problem 1: How to monitor climate risks in relation to investments and credit?

Defining material climate risks is fundamental, since climate change is a basket of environmental issues that imply both risks and opportunities. Materiality should consider both impact materiality and financial materiality.[16] For instance, when determining whether "energy management and transition" is a material issue to a steelmaker, an investment manager would need to address:

- How significant are the positive and negative impacts on people and the environment, as a result of the steelmakers' energy use in its operation and value chain activities?
- How likely is it that government energy transition policies will affect sector outlook or company performance, beyond what is already recognized in financial reporting?

[16] The concept of "double materiality", GRI Standards and European Financial Reporting Advisory Group (https://bit.ly/3RVAmec; https://bit.ly/3U4FsXm).

Determining the right metrics for each climate risk is the cornerstone of a well-structured materiality assessment. The most widely adopted metric is "financed emissions (intensity)", also referred to as portfolio emission or Scope 3 emission from investments. This metric is quickly becoming a prerequisite for any FI that intends to set and claim a science-based carbon reduction target[17] or net zero target.[18]

The metric is conceptually simple. It is calculated by first allocating a portfolio company's emission (hereafter "company emission") to an FI's financed emission by applying an attribution factor or weight. The sum of all allocated company emissions is the "financed emission" of the FI in tons of CO_2e, while this figure normalized by the amount of the investment or loan gives the "financed emission intensity". Various organizations have established calculation formulae for different asset classes or needs.[19]

Quantifying financed emissions by asset class, by sector, and by portfolio company can generate many insights for the investment manager or credit manager, such as:

- Which sectors are the most carbon-intensive?
- Does my firm have a concentrated portfolio in these sectors?
- Which portfolio companies are best-in-class and which are the largest emitters?
- How does my firm's portfolio emission and sector emission (intensity) compare with internal, peer, or sector benchmarks?

The answers can help FIs understand the baseline "greenness" of their portfolio, highlighting the priority sectors, companies, or stranded assets exposed to transition risks that should be the focus of attention.

Financed emission is not the only way to measure climate impact. Biodiversity loss, water stress, and vulnerability to physical climate risk, for example, offer other ways to assess the impact of investments.

Firms can, therefore, now begin to map their climate risks based on an inventory of climate change issues with their respective definitions and risk/opportunity metrics (ideally industry-specific).

Rating agencies, third-party data providers, and standard setters also have their own ESG materiality models and mapping tools,[20] which can provide good reference points. However, these may not capture the FI's ESG focus, such as the U.N. Sustainable Development Goals (U.N. SDGs) that it is prioritizing, financing themes, geographical focus, company-specific nuances, or the investment/credit managers' knowledge of the sector's business model.

Integrating these internal insights will help the FI to establish a firm-wide understanding of its material risks, which can then offer a foundation for different business lines to further develop their climate or ESG analytics for various purposes.

3.2 Problem 2: Decarbonizing portfolios – what are the priorities and best approaches?

Setting a clear strategic direction is core to the implementation of any sustainability program, including the management of material climate impact. It requires a systematic, pragmatic change management approach that evaluates the firm's entire value chain:

- Why is climate risk identification and management necessary?
- What are the businesses, processes, products, customers, stakeholders, and data involved?
- What are the changes needed to integrate climate risk in different businesses within the FI?
- What are the firm's ultimate climate objectives, and what are the targets and key performance indicators (KPIs) that are required to measure success?

There are four golden rules to remember when building out the sustainability program:

First, align the whole business with the purpose and the materiality framework and risk metrics, and how they are used, in order to fully integrate climate risk into the firm's businesses and products. This is especially important for banks that offer a wide range of financial services.

Consider the example of financed emission. It requires a firm-wide engagement process to communicate how climate-related transition risk is related to the other risk

[17] Refers to a target aligned with Criteria and Recommendations for Financial Institutions by Science-based Target Initiative (SBTI) (https://bit.ly/3DjQjqs).
[18] SBTI is planning to launch a final Financial Net Zero Standard in 2023, after a public consultation on the draft standard (https://bit.ly/3dabJf3).
[19] Taskforce on Climate-Related Financial Disclosure (TCFD), Partnership for Carbon Accounting Financials (PCAF), and Net Zero Asset Owner Alliance (NZAO) (https://bit.ly/3U3PxUp; https://bit.ly/3LbGEnR; https://bit.ly/3RG1a2p).
[20] Such as MSCI, S&P Global, SASB and Bloomberg.

Table 4: The concept of transitioning to net zero emissions

MITIGATION TACTICS	
Within the value chain of the company	**Outside the value chain of the company**
Abatement Measures that a company takes to prevent, reduce, or eliminate sources of GHG emissions within its value chain	**Beyond Value Chain Mitigation (BVCM)** Measures that a company takes to prevent, reduce, avoid or remove sources of GHG emissions outside its value chain
Neutralization Measures that a company takes, both within and outside of its value chain, to remove carbon dioxide from the atmosphere and permanently store it in order to counterbalance the impact of GHG emissions within the value chain of the company that remains unabated	

TRANSITION TO NET ZERO

Source: HKEX Advancing Corporate Climate Action Practical Net Zero Guide for Business, based on SBTI Corporate Net Zero Standard Version 1.0.

types (e.g., regulatory risk, credit risk) that various business lines already manage as risk owners; how financed emission informs climate-related transition risk; and why it should be monitored on an ongoing basis in the firm's formalized risk management process.

Such an engagement process will help users both understand and give feedback on the framework, improving its usability and the underlying calculations to ensure these reflect the FI's latest business needs and goals.

Second, set an emissions reduction target that follows a science-based decarbonization pathway to ensure that risk management actions consider forward-looking climate scenarios and are ambitious enough.

What is the firm's fair share of global decarbonization responsibilities, given its carbon budget? Where are the biggest opportunities to decarbonize? Regardless of whether a firm decides to announce the target publicly or keep it as an internal KPI, the target-setting process, if performed using a science-based approach, is itself a discovery process (e.g., through the application of data-driven scoping, baselining, and benchmarking).

Before looking into the firm-wide financed emission reduction target, it makes sense to consider setting subtargets for selected asset classes or portfolios that are likely to have high impact materiality, financial materiality, and data readiness. These pilot exercises in collecting the data required to quantify financed emission will help the firm to map its current data model, ownership, requirements, readiness, and gaps.

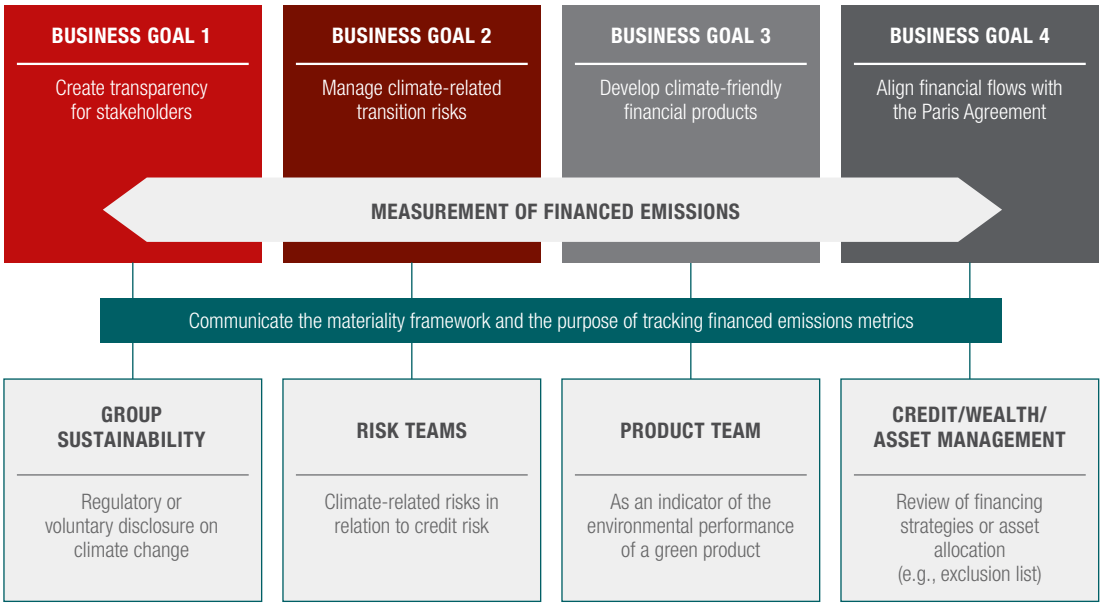
Third, evaluate the various ways of incorporating climate change action into existing investment and lending strategies. Prevailing ESG financing approaches currently adopted by FIs include, in descending order of popularity:[21]

- **ESG integration:** the inclusion of ESG factors into financial analysis
- **Negative/exclusionary screening:** applying ESG criteria to exclude certain sectors or companies
- **Corporate engagement:** driving the ESG agenda through engaging with boards, proxy voting, and shareholder proposals
- **Norm-based screening:** screening of investments against minimum standards of business or issuer practice based on international norms
- **Sustainability themed screening:** investing in themes or assets that contribute to sustainable solutions
- **Positive/best-in-class screening:** investing in ESG outperformers to achieve an ESG rating above a threshold
- **Impact investment:** investing to create a positive impact on a community.

None of the above practices are particularly new to FIs, especially in the case of negative screening. Maintaining a sector/entity exclusion list is a familiar part of regulatory compliance and client due diligence. The novelty is that, until relatively recently, climate-related risk factors have tended not to be identified as the criteria.

[21] Research by Global Sustainable Investment Alliance (GSIA) (https://bit.ly/3DIEOyD).

Figure 1: Aligning the goals of measuring financed emission



Source: PCAF, Capco

However, using negative screening to simply "avoid" financed emissions will not necessarily reduce emissions, if there are plenty of alternative financing channels – the emissions from the excluded company can end up becoming some other FI's financed emissions. This is especially important in some APAC EM, which will continue for some time to be fossil fuel dependent and to lie at the center of the world's industrial processes.

Hence it is important for FIs to develop a firm-wide strategic direction that is likely to be a hybrid of the above approaches, powered by a single consistent objective across different business lines: to mobilize money from "brown" to "green" activities.

Fourth, climate action plans need to be prioritized using business-specific KPIs to measure success, and to have proper governance. Various industry-led initiatives offer guidance that can be used to identify priorities when integrated with FI's materiality framework. Banks tend to prioritize the coal mining, electricity generation, and other sectors that make up a significant majority of bank portfolio emissions.[22] For asset owners such as insurers and pensions,[23] oil and gas, utilities, steel, and transport sectors tend to be the initial focus. The KPIs to track include metrics such as sector carbon intensity, portfolio/sub-portfolio carbon emissions (absolute and intensity), climate-positive investment, and number of engaged companies. Proper governance oversight and capability building is essential to ensure a net zero pledge is not just a one-off statement but sustained by a long-term commitment and enough resources. Lots of firms already have ESG or sustainability committees led by top management, however, effective management information and risk reporting, and communication and training on climate change, are critical to success.

3.3 Problem 3: How to overcome the challenges of ESG data sourcing and quality?

For financial institutions, the challenge of accessing, assessing and managing ESG data lies at the heart of the sustainability project. Without good quality data – or at least, data of a known quality – firms will not be able to conduct the analyses described in this paper nor validate any ESG-related claims about companies or portfolios to investors or regulators. That could lead to accusations of greenwashing and to reputational and compliance risk.

[22] https://bit.ly/3BDd4Eo
[23] https://bit.ly/3xnN6Cr

In the near future, firms may need to plan for very high-volume data processing that draws upon machine learning and artificial intelligence. For the moment, the ESG data landscape, while improving, remains complex, patchy in quality, and in need of more systematic approaches – especially in the context of APAC EM.

In another study,[24] we shared our step-by-step recommendations for FIs to start establishing an ESG data hierarchy that encompasses both financial and non-financial activities to quantify ESG-related impacts and to guide data requirements gathering, sourcing, and methodologies:

- **Level 1:** the "internal taxonomy", "thematic grouping", or "inventory" of E, S, and G issues that are assessed and/or reported on internally or externally, for example climate change transitions.
- **Level 2:** metric or sub-metric to measure an ESG issue, which can be entity, portfolio, or product level information; for example, portfolio carbon emission intensity
- **Level 3:** Key Data Elements (KDEs), or granular data, which are the building blocks of a Level 2 metric.

Here we would like to deep-dive into two ESG data issues: data quality and data management efficiency in the APAC EM context, focusing on Level 3 KDE of the hierarchy.

Corporate ESG disclosures in APAC markets – an important source of the Level 3 KDE – still have much room for improvement. Not even all listed issuers report company emissions, not to mention thousands of small-and-medium-sized and private enterprises that are not bound by disclosure rules. The data that is disclosed varies in quality, even in the case of listed companies. Meanwhile, borrowers are often small- and medium-sized companies that do not have the budget or capacity to supply the data that financial institutions might like to obtain.

There are, however, lots of third-party data providers offering China and APAC EM emission datasets, which likely include some estimates or calculations using alternative data.

One trend to note is that regulators are beginning to ask for more granular data as proof of an investment manager's sustainability claims for a product or investment strategy. For example, in Hong Kong, under the Securities and Futures Commission's latest proposed amendments to the Fund Manager Code of Conduct, "large fund managers" would be required to measure the portfolio carbon footprints associated with their funds' underlying investments.[25]

Table 5: How data quality scoring works

DATA QUALITY AND REQUIRED COST/ EFFORTS OF SOURCING VERSUS EASE OF SOURCING AND CERTAINTY						
LEVEL 1 ESG ISSUE	Climate change					
LEVEL 2 METRIC	E.g., financed emission (for listed equity and corporate bonds)					
PURPOSE OF MEASURING	Regulatory requirement? / Voluntary disclosure? / Management Information reporting? / External or internal ESG index and rating? / Screening, study or research? / Company engagement on carbon reduction?					
LEVEL 3 KDE	Company reported emission		Company physical activity based calculation		Company economic activity based calculation	
	Verified	Unverified	Energy consumption data, emission factor	Production data, emission factor	Company revenue, emission factor	Sectorial emission factor (per unit of asset or revenue) and asset turnover
	Outstanding amount in the company, company enterprise value including cash (EVIC)				Outstanding amount in the company	
DATA QUALITY SCORE	1	2		3	4	5

Source: Capco, PCAF Global GHG Accounting and Reporting Standard for the Financial Industry.

[24] https://bit.ly/3qxC5KX
[25] https://bit.ly/3U6gOWj

Increasingly, FIs not only need to understand how data providers derive a figure, but also distinguish and track the data quality of each dataset by making records of, for example, data quality scores and evaluating the need to improve data quality over time (and the cost/benefit of this). When a data reporting requirement is upgraded from "voluntary" to "regulatory", this could trigger a more in-depth data sourcing and due diligence process, or even the need to engage with the counterparties directly for data collection or checking.

Finally, it's important to streamline the process of integrating external data into the FI's internal data ecosystem. But this has a number of challenges:

- **Infrastructure and tools:** even after selecting the appropriate data vendors, there will be times when data need to be taken from various sources with different formats. It is, therefore, important for the FI to look at its infrastructure and consider it from security and compliance perspective. For example, if integration is executed at API level, is there an external gateway available or an integration point between the external gateway and the internal data stream?
- **Data extraction:** while data taken from data vendors can, in most cases, be used immediately after data ingestion, there will be times when the data required is inside various documents (such as an annual report). The FI may eventually need a tool or platform that can extract information automatically from such sources, with minimal human intervention. This can be challenging because the technology behind such tools is usually deep machine learning and requires a very different infrastructure to that of a normal data ecosystem.
- **Data aggregation and de-duplication:** data obtained from different channels will likely offer very different levels of detail. The data model will need to be flexible enough to cope with this while achieving the desired level of calculation and reporting. On the other hand, taking data in from different sources can also result in duplications so the firm will need to make sure tools are in place to prevent or remedy this problem.

4. CONCLUSION

The accelerating climate threat raises the urgency of climate transition commitments, including the important role global financial markets play in achieving net zero. Lack of strong climate policy setting, enabling tools like taxonomy and disclosure, and high-quality data, has meant that APAC EM are falling behind on their net zero goals. FIs in APAC EM need to prepare themselves to assess and monitor the impact of climate change and to decarbonize their carbon-intensive portfolios. FIs could identify the data gaps through the measurement and assessment process, understanding external data better, and integrating them into the internal ESG data system to track the climate performance.

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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King's Business School, the ninth and newest faculty at King's College London, opened in 2017. It is accredited by AACSB and EQUIS and was rated one of the top 10 business schools for research in the U.K. based on the Research Excellence Framework 2021. It is rated fifth in the U.K. for Business Studies by the Times and Sunday Times Good University Guide. Based in the heart of London, the School is part of an internationally renowned research-intensive university with a track-record of pioneering thinking and the limitless energies of the city's businesses, policy-makers, entrepreneurs and change-makers to draw on. The School's commitment to drive positive change is at the heart of its research and education.

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