BUILDING ON THE BASE:
TCFD DISCLOSURE IN ASIA

ASIA INVESTOR GROUP ON CLIMATE CHANGE

About the AIGCC

The Asia Investor Group on Climate Change (AIGCC) is an initiative to create awareness among Asia's asset owners and financial institutions about the risks and opportunities associated with climate change and low carbon investing. AIGCC provides capacity for investors to share best practice and to collaborate on investment activity, credit analysis, risk management, engagement and policy. AIGCC represents the Asian investor perspective in the evolving global discussions on climate change and the transition to a greener economy. See www.aigcc.net and @AIGCC_update

AIGCC worked in conjunction with EY and FTSE Russell in the development of this report. AIGCC would also like to thank the members of the Working Group who contributed to this guide for their valuable time and expertise.

"EY recognizes the value from appropriate climate risk disclosures to meet investor, and wider stakeholder, expectations. What we can see from this report is that there is a significant opportunity for the business community to engage in the conversation across Asian markets. Stakeholders across the region, from regulators to pension funds and the companies themselves, increasingly see the value in aligning their disclosures to a globally accepted reporting framework such as the TCFD. The momentum is clearly shifting towards integration of climate risk assessments into core business strategy and financial filings, putting in place the mechanisms required to demonstrate how sector leaders are responsibly mitigating climate risk, and optimising the opportunities from a zero carbon world."

Dr. Matthew Bell | Asia Pacific Managing Partner of Climate Change and Sustainability Services at EY

"This report provides a clear picture of the current state of TCFD disclosure across Asian equity markets. FTSE Russell has aligned its climate research model with TCFD recommended metrics and having collected data from companies globally it's clear that disclosure varies widely from one region to another. Asia, which accounts for 44% of the FTSE All-World Index by number of constituents, lags behind its regional peers in disclosure of TCFD indicators. However, there is clear momentum in the region which is visible from the engagement we see with investors and companies across many Asian markets. If we repeat this analysis in future years we expect to see a growing level of awareness of climate change and its related risks and opportunities. Investors in Asia, led by large public pension funds, are increasing their stewardship and engagement with companies on the disclosure of climate strategies and data. This trend is being further supported by regulators and by exchanges who in many instances are taking action to improve issuer climate disclosure. This is demonstrable through the 17 Asian exchanges that have chosen to become members of the UN backed Sustainable Stock Exchange initiative."

David Harris, Head of Sustainable Investment, FTSE Russell & Head of Sustainable Business, London Stock Exchange Group

October 2018

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CHAPTER 1

Background To This Report

Climate change is a systemic risk – one which investors cannot diversify away from. As equity investors and universal owners, investors have the ability and the responsibility to raise their concerns with investee companies to manage climate risk. Investors are seeking greater clarity on how companies are aligning with the transition to a 2˚C or less climate future in line with the Paris agreement, and disclosing climate change risks and opportunities to the market.

With the recent Intergovernmental Panel on Climate Change (IPCC) report [1] urgently calling on limiting global temperatures to 1.5°C, investors are seeking to gain a more comprehensive understanding of the impacts of climate risks and opportunities in their portfolios. To this end, investors are seeking greater information and transparency from their investee companies around their actions to transition to the net-zero carbon economies needed by 2050. In parallel, investors have also started to work on their own reporting[2] of climate risks and opportunities and appreciate the work and resources required to undertake this. Investors recognise that climate risk disclosure in Asia is in the early stages of development, and hope that this guide will assist companies in understanding what investors expect from them and how to improve climate reporting on the risks and opportunities in the immediate future.

This guide outlines the expectations that investors have of listed companies on their climate disclosure and is designed to provide a practical tool for investors as they work in partnership with their investee companies in Asia. To understand the current state of play, the Asia Investor Group on Climate Change (AIGCC) commissioned analysis by EY and FTSE Russell to look at climate reporting from different perspectives. EY undertook detailed analysis in four major Asian markets across high risk sectors to provide the first benchmark of corporate climate disclosure in Asia against the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). [3]

This was complemented by a country comparison run by FTSE Russell based on their first set of TCFD data analysis against their universe of over 3,000 companies (FTSE All-World index universe) which provides global and regional trend analysis in the Asia market. The guide identifies examples of leading disclosures that have been found across different sectors and markets within the four pillars of TCFD disclosure (Governance, Strategy, Risk Management and Metrics and Targets) so that it can assist companies with practical examples as more TCFD reporting is emerging.

Investor Expectations

To meet the energy demand of Asia the International Energy Agency (IEA) estimates that US$4.6 trillion in investment is needed by 2035, and US$7.7 trillion is needed to achieve the 2˚C warming target by 2050. This is offset by up to US$26 trillion in potential economic benefits through to 2030, compared with business-as-usual.[4] Many companies in Asia are at the cutting edge of the technology change and the solutions needed for this global energy transition.

Greater transparency from comprehensive corporate climate disclosure will help give investors a better sense of how investee companies are positioned to deal with the low-carbon transition and identify the business models that will potentially provide sustainable, long term returns. If companies do not provide sufficient disclosure on their activities, then only estimates from external sources on their energy and emissions data can be used by investors. If companies are not prepared to discuss these details through engagement, investors in markets such as the US, Europe and Australia have shown they are now more prepared to follow up using a variety of tools such as AGM statements supporting appropriate shareholder resolutions on climate change risk, voting for the removal of directors who have failed in their accountability of climate change risk or voting against accounts, legal recourses and divestment. While some of these actions are more difficult to exercise in Asia due to minimal legal recourses and lack of class action systems, investors are looking at how they can influence their investee companies in the region with respect to more transparency of climate change risk.

In order to ensure robust, responsive and resilient business strategies and encourage a smooth transition to a lower carbon economy, we have set out the expectations and guiding questions that investors can raise in their discussions with board and management of companies in various at risk sectors. These are intended as parameters under which to assess, and where necessary 'stress test,' business strategy to evaluate preparedness for the next decade and beyond.

This guide is also intended to support collaborative engagement initiatives such as the Climate Action 100+ which now has over 310 investors representing over US$32.5trn assets under management (AUM). Investors are coordinating on a scale never seen before and the benefit of this for companies is that it presents a strong, clear and consistent message about the type of reporting that is now expected.

About the Climate Action 100+

Climate Action 100+
Keeping Business Below 2-degrees

Launched in December 2017, Climate Action100+ is a five-year initiative led by investors to engage systemically important greenhouse gas emitters and other companies across the global economy that have significant opportunities to drive the clean energy transition and help achieve the goals of the Paris Agreement. Investors are calling on companies to improve governance on climate change, curb emissions and strengthen climate-related financial disclosures.

Signatories to the initiative are asking boards and senior management of companies in the focus list to:

1. **Implement a strong governance framework** which clearly articulates the board's accountability and oversight of climate change.
2. **Take action to reduce greenhouse gas emissions,** consistent with the Paris Agreement's goal of limiting global average temperature increase to well below 2 degrees above pre-industrial levels.
3. **Provide enhanced corporate disclosure** in line with the final recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and sector specific GIC Investor Expectations on Climate Change guidance (when applicable) to enable investors to test the robustness of companies' business plans against a range of climate scenarios, including well below 2 degrees and improve investment decision-making.

Source: www.climateaction100.org

Understanding Investor Expectations

This is the first comprehensive guide looking across Asia on how companies are reporting against the TCFD. It draws upon a number of existing GIC* Investor Expectations sector guides for oil and gas, mining, utilities, auto manufacturers and steel which provide additional sector specific disclosure recommendations, particularly regarding the oversight of public policy positions and activity. The series will expand to cover other sectors in the future.

Five 'asks' about how a company is planning a smooth transition to a low carbon economy.	
1. Governance	Clearly define board and management governance processes to ensure adequate oversight of climate-related risk and the strategic implications of planning for a transition consistent with 2°C and efforts to pursue 1.5°C.
2. Strategy	Integrate the management of climate-related risks and opportunities into business strategy and ensure business models are robust, responsive and resilient in the face of a range of energy transition scenarios through appropriate scenario analysis.
3. Implementation	Embed climate scenario analysis and 'stress testing' within key business planning processes, investment decisions and metrics on a regular basis.
4. Transparency & disclosure	Disclose in the annual report and/or on the corporate website, the company's view of, and response to, its material climate-related risks and opportunities as outlined in the rest of this document and operational emissions. Further, to engage with investors in an open and transparent way.
5. Public policy	Engage with public policy makers and other stakeholders in support of cost-effective policy measures to mitigate climate-related risks and support low carbon investments, such as those advocated for in the 2018 Global Investor Statement on Climate Change. [5] Ensure there is broad oversight and transparency regarding the company's lobbying activity and political spending on climate-related regulatory issues (including carbon/ methane emissions, energy and transport), as well as consistency between a company's public positioning on climate change and its lobbying activities.

Table 1: *These have been developed through the Global Investor Coalition on Climate Change(GIC) which includes AIGCC, Ceres, IGCC and IIGCC). See **www.globalinvestorcoalition.org** for more information.

Detailed expectations and questions for companies.

Following is a detailed look through of each of the five expectations and examples of questions investors can ask companies to better understand their current position on climate change and the type of information investors are seeking in the public disclosure of these companies. These are all aligned with the framework set out in the TCFD.

These questions are not intended to be prescriptive or definitive but rather act as a guide. Specific questions for listed companies will necessarily be guided by disclosure gaps identified in the investor research and due diligence phase of company engagement.

Governance

Expectation

For highly exposed companies, the responsibility is with the board to clearly define board and management governance processes to ensure adequate oversight of climate-related risk and the strategic implications of planning for a transition consistent with 2°C and efforts to pursue 1.5°C.

Questions for the Board

Board expertise and/or process for understanding climate-related risks:

- How does the board access expertise and knowledge to understand and make informed decisions on climate risks and opportunities? E.g. seek independent external advice on climate change risk, holding education sessions for the board and/or have an expert on the board.
- Has there been a clear assignment of responsibility to a board committee or member for assessing and managing material climate-related financial risks and opportunities, as well as the company's activity on climate-related policy issues?
- What experience does the board have in delivering business transformations that require significant investment in new and innovative technology like those required to transition the industry?

Strategy oversight:

- How does the board oversee the way in which climate-related risks are factored into strategic planning, risk management frameworks, final investment decisions, capital efficiency, setting and managing KPIs?
- What processes does the Board have in place to ensure that climate-related risks are carefully and diligently assessed?

Incentivising strategy:

- How is the Remuneration Committee ensuring that incentives are aligned with a long-term strategy that includes climate change considerations consistent with the goals of the Paris Agreement?

Public policy:

- Does the board support national, regional and international efforts to limit global warming to well below 2 degrees?
- How does the board and management ensure that the activities of trade associations to which the company belongs, do not block or lobby against climate policy?

Transition plan - Strategy and Implementation

Expectation

Take action to reduce greenhouse gas emissions across the value chain, consistent with the Paris Agreement's goal of limiting global average temperature increase to well below 2°C above pre-industrial levels.

Questions for the Board

Targets and transition plan:

- Does the company have a long term (2030 or beyond) emission reduction target set in line with the level of de-carbonization required to keep the average global temperature increase well below 2°C?
- Has the company developed specific investment plans to ensure that its Scope 1, 2 and most material 3 emissions, are reduced consistently with the ambition of the Paris Agreement goal of limiting global average temperature increase to well below 2°C above pre-industrial levels? Are they not disclosed in detail?

Research & development and new business opportunities:

- What is the company's R&D strategy and capital expenditure (as percentage of overall capital expenditure) with respect to carbon reduction technologies?
- Is R&D expenditure sufficient to bring about the development of technologies that will enable the business to align with the Paris Agreement?
- How does the company report the anticipated impact (in financial and carbon terms) that it expects from such investments?
- Is the company actively engaged with universities and research institutions to develop innovative technologies? Is the company actively seeking public funding available for funding part of the innovative projects the company has embarked or is planning to start in the next 2-5 years?
- What is the proportion of public funding for research the company has been awarded so far, compared to internal company's funding, and how is the proportion expected to develop based on available public funding the company has applied for is planning to apply for?

Disclosure

Expectation

Provide enhanced corporate disclosure in line with the final recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) to enable investors to test the robustness of companies' business plans against a range of climate scenarios, including well below 2°C, and improve investment decision-making.

Questions for the Board

Disclosure commitment:

- Will the board be formally supporting the recommendations from the FSB Task Force on Climate-related Financial Disclosure?

Disclosure location:

- Does the company have plans to disclose information related to its exposure to and management of climate-related financial risks and opportunities in its financial filings?
- Will the company explain within its financial filings how climate-related risks and opportunities may impact on its financial statements?

Metrics:

- Does the company disclose scope 1, 2, and 3 emissions?
- Will the company deploy and disclose financial metrics related to the management of climate risk and opportunity? For example, revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services); expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services); and investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets); and value at risk from a carbon pricing system.
- What percentage of the company's assets are exposed to a carbon price?

Risk Management disclosure & business implications:

- What climate-related risks and opportunities has the organization identified over the short, medium, and long term?
- What are the key risk factors for various assets, business lines, and strategies?
- How does the Board ensure there is sufficient flexibility within the business to respond to changing policy dynamics? (E.g. sudden onset of carbon price)

Regulatory exposure:

- Does the company report on the number of installations covered by emissions trading systems (or equivalent regulatory systems)?
- Does the company report on the volume of emissions (in tonnes) that are covered by such systems?
- Does the company report on the coverage of exemptions to such systems? Does the company report on the volume of credits it holds of such systems and how the volume of credits will reduce over time?

Scenario Analysis:

- Has the company undertaken and disclosed scenario analysis?
- What are the key outlook input assumptions and ranges tested with respect to: speed and alignment of regional and national policy measures to deliver on the Paris Agreement; technology break-through and penetration (in particular, CCS, electrolysis, and biomass); and prices?
- Will the company produce sensitivities to higher carbon pricing? Are there specific recommendations or actions that can be developed from the results of scenario analysis and stress testing?
- Has the scenario work resulted in changes to the business model? Regarding carbon pricing, what is the company's break even carbon price (e.g. at what carbon price can the company's installations continue to be profitable?)

Table 2: Adapted from GIC Investor Expectations Guides. www.globalinvestorcoalition.org

About the Task Force on Climate-related Financial Disclosures (TCFD)

In June 2017 the industry-led Task Force on Climate-related Financial Disclosures (TCFD), established by the Financial Stability Board (FSB), published its final recommendations on financial climate risk disclosures. The recommendations aim to improve organisational understanding of the impact of climate risks, reduce the risk of a systemic financial shock on the economy due to climate change, and address the challenges for investors, creditors and underwriters when considering the potential climate-related financial impacts facing companies. The TCFD separated climate impacts into distinct categories, and recommended that both be addressed:

- **Transition impacts:** reflect the risks and opportunities associated with changes in the economy, including growth impacts, sector re-weighting, and other macro-economic factors.
- **Physical impacts:** reflect the changes in the physical climate (e.g. altered rainfall amounts, intensities and timing) that may impact future business activities.

The TCFD also provides specific guidance for certain higher risk sectors in both the financial sector (e.g. banks, insurance companies, asset owners and asset managers) and other sectors (e.g. energy, transportation, material and buildings, agriculture, and food and forest products).

Across Asia, the adoption of the TCFD recommendations is currently voluntary for all entities, however pressure from different stakeholder groups, including investors and regulators, is driving many listed companies operating in high risk sectors to pay closer attention to their disclosures on climate change and climate risks and familiarise themselves with the TCFD recommendations.

Drivers For Increased Disclosure

Take-up of the TCFD recommendations by companies is being driven by both external and internal stakeholders. The rationale for companies adopting the recommendations varies between the stakeholder groups. In Asia, some of these drivers and examples are from an environmental standpoint, rather than climate specific, however it shows where action is being taken in a related or emerging area.

Stakeholder group		Drivers	Actions	Examples
EXTERNAL	**Investors**	Concern about long-term value of investments Reputational concerns	Shareholder Resolutions	A number of companies globally have had shareholder resolutions requesting them to report on the impacts of a 2 degrees economy on their business, including BP, ExxonMobil, QBE, Rio Tinto, Shell and Statoil.[6]
			Coal phase out	A number of Japanese firms including insurers Nippon Life[7] and Dai-Ichi[8] and Sumitomo Mitsui Banking Trust have announced restrictions on new coal lending. They join HSBC[9] who have also tightened their policy. Other large Japanese banks MUFG, Mizuho Financial Group, SMBC and Singapore bank DBS have improved their acknowledgement of climate risks in recent policy updates.
			Direct engagement with management	• Climate Action 100+ has over 310 investors with $US32 trn AUM engaging with 161 systemically important carbon emitters globally, including 32 companies in Asia. • Blackrock, currently the world's largest asset manager, has listed climate risk disclosure as one of its key engagement priorities in 2017/18 in a statement said: *"In our view, the TCFD Recommendations, which include sector-specific supplemental guidance, provide a relevant roadmap for companies. Over the course of the coming year, we will engage companies most exposed to climate risk to understand their views on the TCFD Recommendations and to encourage them to consider using this reporting framework as it is finalized and subsequently evolves over time." (www.blackrock.com)*
	Other	Reduce exposure of civil society to negative financial impacts relating to climate risk	Initiatives encouraging adoption	• China Green Finance Committee, The City of London Green Finance Initiative and the Principles for Responsible Investment (PRI) have established a new private group of UK and Chinese financial institutions to pilot TCFD reporting in 2018, which will inform the direction of China's environmental disclosure guidelines, enabling China-UK exchange on effective implementation of TCFD. • The Hong Kong Securities and Futures Commission launched a Strategy Framework for Green Finance that aims to enhance listed companies' reporting of environmental information emphasising climate-related disclosure, taking into account the Mainland's policy direction to target mandatory environmental disclosure by 2020, and aiming to align with the TCFD recommendations.[10]
			Legislation	• Climate policy legislation is emerging in China, Japan, Korea and India.[11] • The China Securities Regulatory Commission (CSRC), in collaboration with China's Ministry of Environmental Protection, has introduced new requirements that, by 2020, will mandate all listed companies and bond issuers to disclose environmental, social and governance (ESG) risks associated with their operations.[12] • A review of the TCFD and the local Japanese regulatory environment was undertaken to look at how the voluntary recommendations integrate into existing regulation and soft law, and how investors and companies in those markets can apply them.[13]
			Legal Action[9]	• The Commission on Human Rights of the Philippines' inquiry is probing whether 47 major fossil fuel companies can be held culpable for accelerating climate change and how climate change impacts have affected basic human rights of Filipinos.[14] • In Australia a major bank and a superannuation (pension) fund have had lawsuits brought against them for failing to adequately plan for or disclose their climate-related risks.[15]
INTERNAL	**Company Directors**	Personal liability if climate risk not addressed	Legal opinions on Director Duties	• An opinion by Marsh discussing climate change as an emerging risk for corporate directors and officers in Asia, concluded that as the legal landscapes across Asia evolves, further litigation will likely emerge in Asia from the issues and laws associated with climate change.[16] • An influential legal opinion prepared by Noel Hutley QC on Climate Change and Director Duties commissioned by the Centre of Policy Development, concluded that Australian company directors "who fail to consider 'climate change risks' now could be found liable for breaching their duty of care and diligence in the future". This has made company directors more aware of the potential personal liabilities of not addressing climate risk.
	Strategy team	Maintaining long-term business growth	Developing long-term business plans that include climate risk	• A number of companies have released Climate Change Position Statements or equivalent. These generally outline the company's view on climate change (generally whether they are aligning their business strategy to a 2°C outcome or not) and then discuss the implications and action plan to integrate this position into their long-term business plans. Examples can be found in Chapter 5 of this report.

Table 3. Internal and external drivers for disclosure in Asia (Source: EY/AIGCC)

CHAPTER 2

Assessing Performance Of Corporate Climate Disclosure On TCFD – A Sectoral View

This chapter draws upon and analyses current corporate disclosures from 161 companies across nine high risk sectors (as identified by the TCFD as most exposed to climate risk) in Japan, Singapore, South Korea and Hong Kong to provide a snapshot of the coverage and quality of reporting on the TCFD Recommendations. The purpose of this chapter is intended to provide companies with an understanding of the current state of reporting and identify areas of improvement across the different sectors.

Sector-based analysis method

The sector-based analysis was carried out by EY's Climate Change and Sustainability Services team in Oceania. It followed the same method as was used in EY's Climate Risk Disclosure Barometer, which reviewed selected ASX200 companies and Australian superannuation funds on their TCFD disclosures in 2017 and 2018.[17]

Identifying companies for inclusion

This section looks at TCFD disclosures of public companies with the highest market capitalisation from the following key stock exchanges in four Asian countries:

- Nikkei Index (225), Japan (74 companies)
- KOSPI, South Korea (36 companies)
- FTSE STI, Singapore (33 companies)
- Hang Seng, Hong Kong (18 companies)

In addition, a number of asset owners and managers were identified for inclusion based on various regulators across the four countries in scope, and on assets under management (AUM). These included the Investment Trust Association of Japan (JITA), the Monetary Authority of Singapore (MAS), the Korea Financial Investment Association (KOFIA) and the Securities & Futures Commission (SFC) in Hong Kong.

All local currencies were converted into USD and filtered against sectors identified by the TCFD as most exposed to climate-related risks. 193 of all public companies were excluded as they did not fall within these sectors, resulting in 161 companies being included in this analysis. Given the relative size of the market and capitalisation of companies in Japan, a larger number of Japanese companies compared to other markets fit within the methodology criteria. A summary of companies assessed by sector is shown in the table below.

	Sectors identified by TCFD most exposed to risk	Asia Climate Disclosure Barometer sectors	Number of companies reviewed
Financial Services Sector	Banks	Banks	19
	Insurance companies	Insurance companies	15
	Asset owners*	Asset owners and managers	6
	Asset managers*		
Other Sectors	Agriculture, food, and forest products	Agriculture, food, and forest products	19
	Energy	Energy	20
	Materials and buildings*	Materials, chemicals and construction	29
		Buildings	23
		Mining and metals	12
	Transportation	Transport	18
Total			**161**

Table 4. ** For the purposes of this chapter, these sectors were re-grouped where distinctions between categories could not be determined or where further sub-sector analysis was useful. (Source: EY)*

Establishing a TCFD-relevant scoring scheme

The TCFD recommendations are structured around four core elements that reflect how companies operate .

Core elements of recommended climate-related financial disclosures

➤ **Governance**

The organization's governance and climate-related risks and opportunities

➤ **Strategy**

The actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning

➤ **Risk Management**

The processes used by the organization to identify, assess and manage climate-related risks

➤ **Metrics and Targets**

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

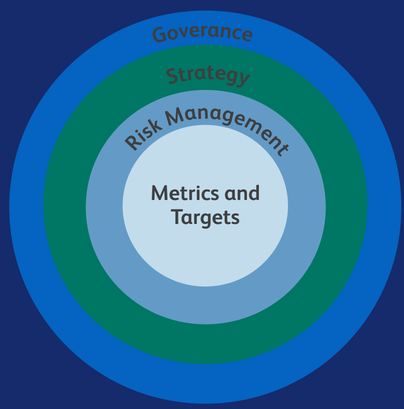


Figure 1. *TCFD*

Companies were scored through a multi-tiered system which incorporated both the coverage and quality of the disclosures. Firstly, companies were assessed on how many of the 11 recommended disclosures they addressed. Secondly, the quality of these disclosures was also assessed using the scoring system presented below.

Company scores are based on disclosures in publicly available information including Annual Reports, Sustainability Reports, or elsewhere such as a company's website. Where publicly available, a company's disclosure in relation to the CDP (formerly the Carbon Disclosure Project) was also considered.

Metrics used in this chapter

Coverage	Percentage of the 11 TCFD recommendations addressed by the company. A score of 100% indicated that the company has addressed all 11 of the recommendations.
Quality	Average rating out of 5 across TCFD recommendations based on the quality of the disclosure, expressed as a percentage and weighted by coverage. A score of 100% indicated that the company had adopted all (11) of the recommendations and the quality of the disclosure met all the requirements of the TCFD (i.e. gaining a maximum score of 5 for each of the 11 recommendations). The quality of the disclosures was scored using the following scoring system: 0 – Not publicly disclosed 1 – Limited discussion of the aspect (or only partially discussed) 3 – Aspect is discussed in detail 5 – Identified in the report as a key material issue/aspect

Key findings

Overall sector performance

Across the sectors considered, insurance, transport and energy showed the highest scores for the quality and coverage of their TCFD reporting, relative to other sectors. Asset owners and managers were a noticably poor performer, with average scores lower than all other sectors for both quality and coverage (and the two metrics combined).

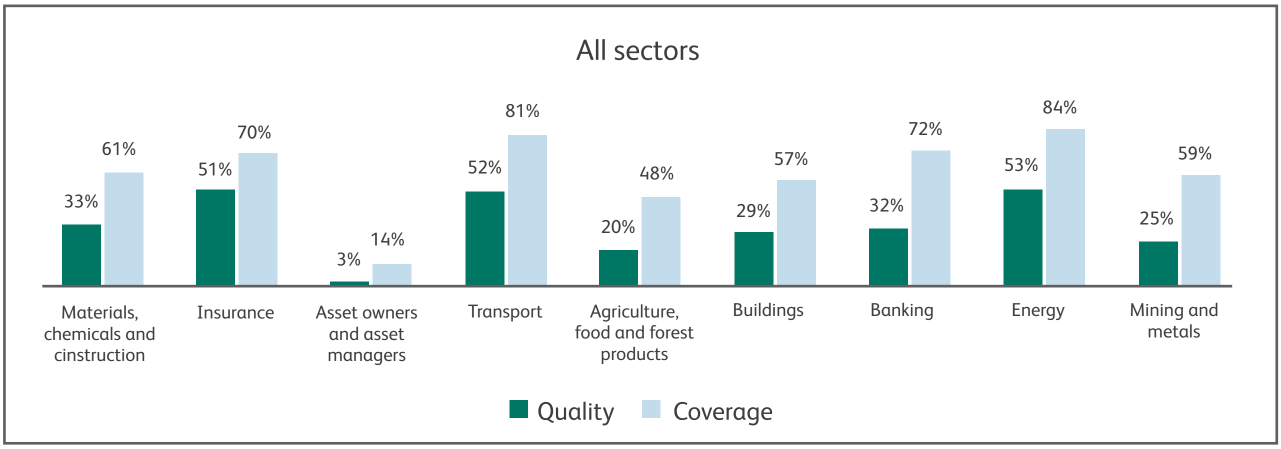


Figure 2. All sectors TCFD performance (Source: EY)

Overall TCFD category performance

Quality and coverage scores were relatively consistent across the four TCFD assessment categories, with governance issues being best addressed and strategy issues lagging. Also consistent across the categories was the rate of coverage (better addressed) and quality (less well addressed), with quality in particular scoring less than 50% across all four categories

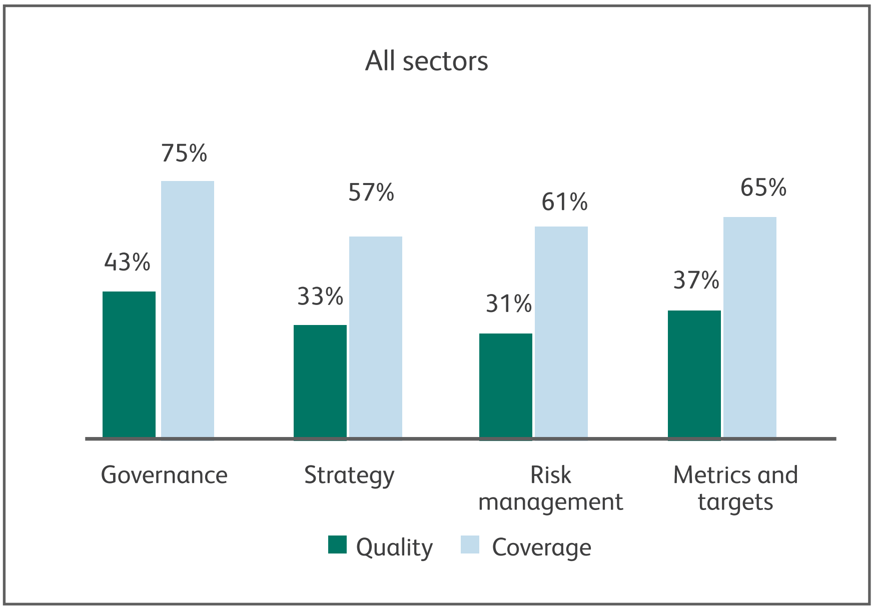
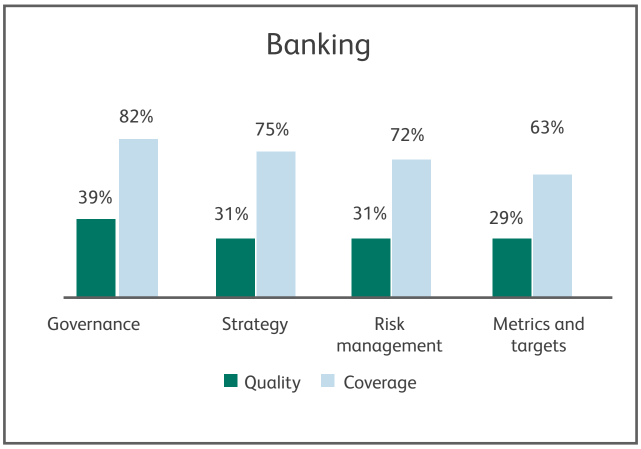


Figure 3. All sectors TCFD performance by focus area (Source: EY)

Key Industry Sectors: Banking



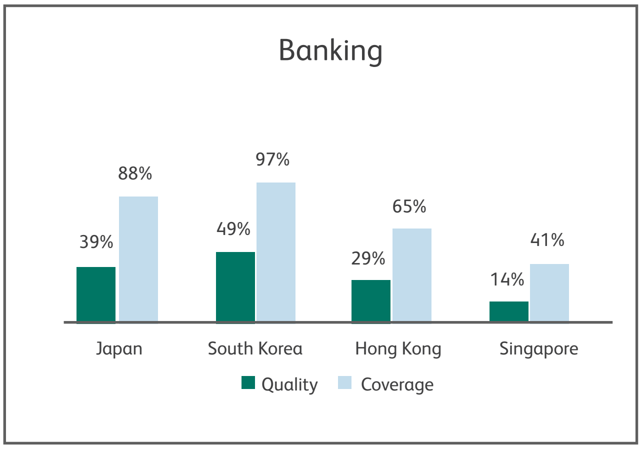


Figure 4. By TCFD focus area By key market *(Source: EY)*

Sector Overview

This sector analysis included 19 banks from across the four key regional stock exchanges, with a ranking by market capitalisation resulting in the inclusion of six banks from each of Japan and Hong Kong, four from Singapore and three from South Korea. Total market capitalization for all companies reviewed within this sector was US$1.2trn, and average company size was US$60bn.

As a whole, the sector addressed 72% of the TCFD recommendations in their public disclosure and reporting (i.e. the 'coverage' score) with Japan and South Korea leading the pack with an average 10 out of 11 recommendations being addressed to some extent. Companies in this sector from Hong Kong addressed seven out of 11 on average, while Singapore-based banks addressed four of the 11 recommendations.

The average quality score for the banking sector was 32%, a relatively low score and slightly below the average for all financial sectors reviewed in this chapter (which was 35%). South Korea was the stand-out performer in this sector with an average score of 49%: Singapore-based banks performed relatively poorly at 14%.

The TCFD coverage scores for the Asian banking sector is similar to that found in EY's recent TCFD disclosure analysis for Australia[18], which reported coverage of 68%. However, on a quality basis, the Australian banks significantly outperformed their Asian counterparts, with scores of 49% and 32% respectively. In short, banks across Asia do address the TCFD recommendations to some extent, but the quality of their disclosures is limited.

The banks reviewed made their disclosures predominantly through publications such as their annual and sustainability reports, with 11 out of 19 companies participating in the CDP over 2017. However, there were three companies that scored zero for their disclosures in this sector, one from Hong Kong and two from Singapore.

Governance

The majority of banks included in this analysis are actively disclosing climate risk across a broad range of the Governance recommendations made by the TCFD. Most banks identified that ultimate responsibility for climate risk governance sat with the board or with a dedicated sub-committee reporting to the board. A small minority were silent on the ultimate responsibility for climate risk, or disclosed generalised information which could be interpreted as 'check box' statements.

The majority of the banks' governance activities focused on the structural considerations and responsibilities for risk management but little emphasis was placed on more advanced considerations including the emissions embedded within their lending portfolios. The consideration of climate risk in their operational performance was demonstrated more consistently among the entities included in this review and responsible lending practices and policies were often held out as an example.

Strategy

While not necessarily disclosed in line with the traditional banking risk categories, the majority of banks reviewed had identified the material risks to their operations in a climate-constrained world. Common risks identified included the physical risks of extreme weather, and upward pressure on costs due to increased regulation of the industry and of their customer bases. Relevant time horizons were haphazardly disclosed and an inconsistency in the disclosure of the materiality processes employed to identify climate risk were insufficient or absent in a number of instances.

A number of banks outlined the strategic activities undertaken to ensure an orderly transition to a low-carbon society, the risks inherent in the electricity generation industry and targets to support the proliferation of low carbon and renewable energy projects. A minority of banks committed to developing their practice of scenario analysis for forecasting purposes and are exploring the promotion of the issuance of green bonds given their proliferation across Asia over the past two years.

Risk Management

Risk management practices across the Asian banking sector were generally disclosed at a high level, and described both the process of risk identification and prioritisation and the members of management responsible for their management. While a significant number of institutions mention the need for society to transition to a low-carbon system, a small minority differentiate between physical and transition risks and a smaller number outline the benefits of such a shift.

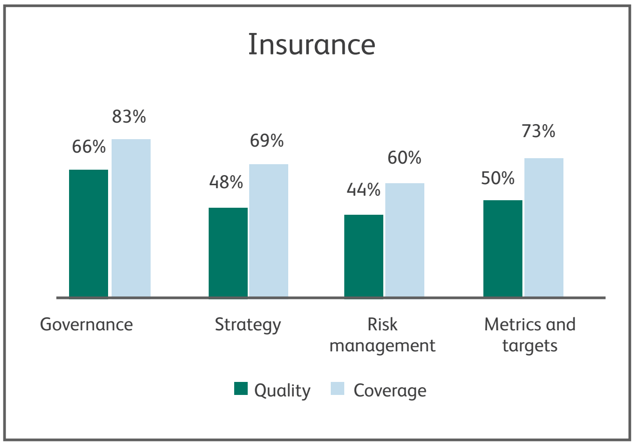
The initiatives outlined in managing the risks introduced by a changing climate include an expansion of renewable energy investment and environmentally sound businesses and internal measures to reduce their ecological footprints. Further climate related changes in infrastructure investment trends, both energy and non-energy, may further alter the risk perspective of banks and other large investors.

Targets and Metrics

While the larger banks disclosed scope 1, scope 2, select scope 3 emissions and other environmental metrics for their operations, almost half of the entities reviewed either disclosed partial emission profiles or did not report emissions. No banks surveyed disclosed the amount of emissions embodied in their loan book, nor the amount of lending in emission-exposed industries.

Emission reduction targets were identified for slightly less than half of the banks included in this chapter and a mix of absolute and intensity targets were reported. Targets were not considered ambitious and will likely be scrutinised by stakeholders in the near future. A small minority reported a renewable energy target for their own operations, but none presented a similar target in their lending. Further to this, the targets outlined by the banks were not explicitly linked to the risks and opportunities identified in their public filings, and remain a significant opportunity for improvement in future years.

Insurers



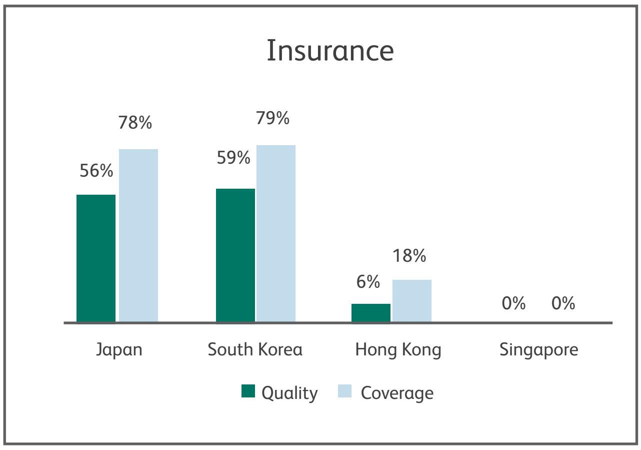


Figure 5. By TCFD focus area — By key market *(Source: EY)*

Sector Overview

This chapter assessed the TCFD-relevant reporting of 15 insurance companies across three Asian countries: seven from Japan, six from South Korea and two from Hong Kong. Total market capitalization for the companies assessed was US$340bn, with a 30-fold difference in market capitalisation between the largest and smallest insurer included in the analysis.

Overall, the insurance sector ranked well compared to other sectors in this chapter, with Japan and South Korea providing higher levels of disclosure. Reporting coverage was in the top three of the sectors considered, while the average quality of the data provided was equal-highest of all sectors. From a country perspective, there was little difference in scores for Japan and South Korea, with the insurance sector being scored relatively high in both countries. Hong Kong was a notable outlier, with a coverage score around one-quarter that of Japan and South Korea, and a quality score around one-tenth that of the other countries. Against EY's comparable analysis of Australian reporting against the TCFD[19], the results for Japan and South Korea (and for Asia overall) are markedly higher than those for Australia-based insurers.

Companies reviewed made their disclosures predominantly through publications such as their annual and sustainability reports, with seven out of 15 companies (47%) responding to CDP questionnaires during 2017.

Governance

Governance was the best-addressed aspect of the TCFD disclosure framework by insurers, outscoring other TCFD metrics on both the quality and coverage of the disclosures. The best performing insurers articulated the governance process via their CDP disclosures, and/or through annual reports and stand-alone sustainability reports.

Strategy

The best-performing companies put forward a public position on the climate-related risks and opportunities that they were facing, however, there were significant differences between companies. In all regions, examples of high performing and very low performing risk and opportunity assessments were evident. By comparison, the use of scenario analysis to inform strategy appears to be an opportunity for significant future work across the region, with very limited discussion of scenario analysis across all jurisdictions.

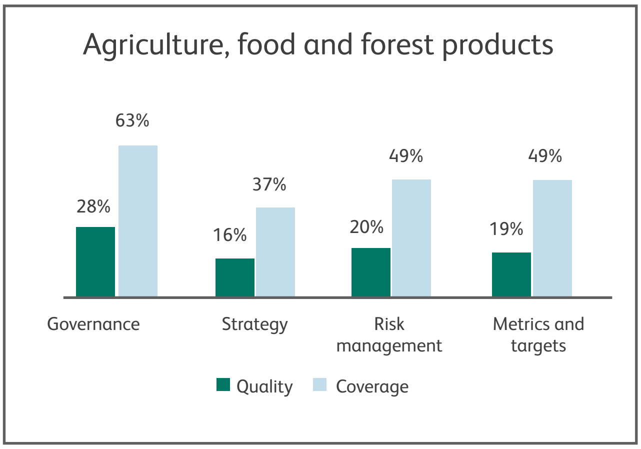
Risk Management

While average performance against this element of the TCFD framework was the lowest of the four TCFD elements, companies listed in Japan and South Korea were notable higher performers. Across the region, a number of companies scored well in terms of identifying climate risks; however, overall the sector is yet to systematically address the integration of climate risk into its existing risk frameworks.

Targets and Metrics

The three TCFD elements under Targets and Metrics were addressed to similar levels across the companies assessed, with evidence of the use metrics such as GHG emissions (scope 1 & 2), and target setting from a number of companies. In common with other TCFD criteria, insurance businesses in Japan and South Korea markedly out-performed businesses in Hong Kong.

Agriculture, food, and forest products



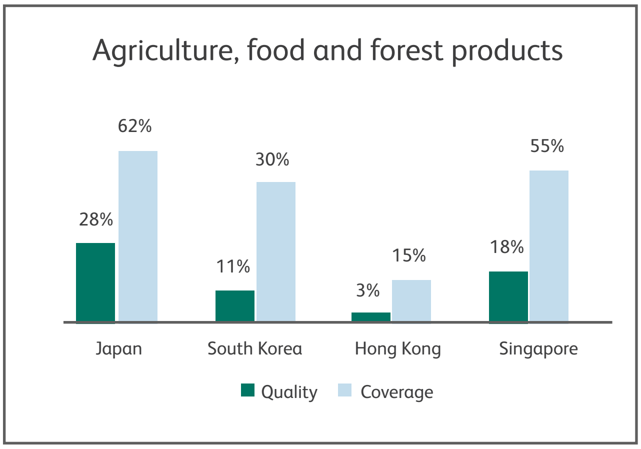


Figure 6. By TCFD focus area

By key market *(Source: EY)*

Sector Overview

Analysis for this sector included 19 companies across the four key regional stock exchanges, with the majority of businesses being 'agriculture and food' companies, and one company focussing on forestry products. The majority of the companies included were based in Japan (10 out of 19), with three each from Hong Kong, Singapore and South Korea. Total market capitalization for all companies in this sector was $US180bn, and average company size was $US10bn.

Overall, TCFD disclosure performance for this sector was relatively poor, with the overall sector results being the second-lowest of all sectors in this analysis. On average the sector addressed 48 percent of the TCFD recommendations in its public disclosure and reporting, with Japanese companies out-performing businesses in other countries with an average of seven out of 11 recommendations being addressed. Singaporean companies addressed six recommendations on average; South Korean companies addressed three; and Hong Kong companies addressed two.

The quality of the disclosures was also relatively poor, with the sector-average score of 20% being the second-lowest of all sectors assessed, and well below the 36% average for all non-financial sectors reviewed in this report. Japanese and Singaporean companies scored highest, at 28% and 18% respectively, with South Korean companies scoring 11%, and Hong Kong companies 3% on average.

The underperformance of this sector was similarly noted by the Australian Climate Risk Disclosure Barometer report[20], in which the coverage and quality (44% and 23% respectively) are in line with the coverage and quality (48% and 20% respectively) findings here. Four companies scored zero for their disclosures in this sector: two from South Korea, and one each from Singapore and Hong Kong.

Companies reviewed made their disclosures predominantly through publications such as their annual and sustainability reports, with only two companies participating in the CDP over 2017.

The two highest TCFD scores of 80% and 67% were achieved by Japanese agriculture companies. These results should be seen in the context of the sector's scale in Japan, with the combined agriculture and mining sectors accounting for just 1.3% of gross national product.

Governance

The majority of companies made some level of disclosure around their governance of climate-related risks and opportunities, though the quality of these disclosures varied: four of the 19 companies did not make any TCFD-related disclosures on governance. Companies with lower quality disclosures tended only to mention that the board was responsible for environmental or sustainability risks. Disclosures of higher quality identified committees and other structures in place to assess and manage risks, and in some cases identified individuals holding relevant responsibilities.

Strategy

The TCFD recommendations relating to strategy were the least responded to by the sector. Eight of the 19 companies did not disclose any information on their climate risks and opportunities, or how these are addressed within corporate strategies. Where climate risks were disclosed by companies, these tended to relate to supply chain interruptions due to severe weather events.

A clear area for improvement, only three companies scored medium or high scores for their disclosures on how climate-related issues have affected their businesses, strategy, and financial planning. Only two companies made any comment on the resilience of their climate-related strategies, and the quality of these disclosures was low.

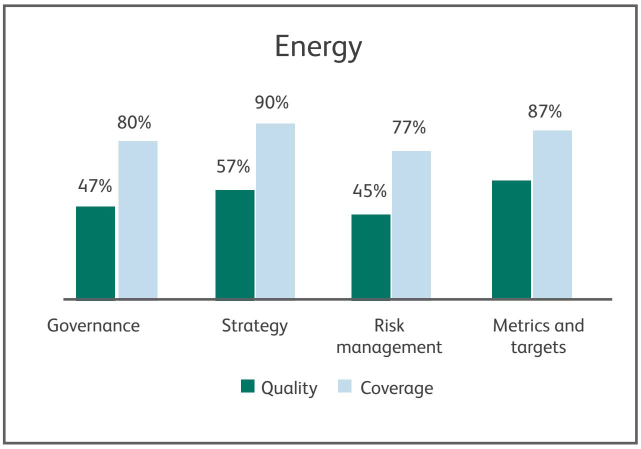
Risk Management

A majority of companies disclosed some level of information around how they identify and manage climate-related risks; however, seven companies made no disclosure in relation to this. Companies scoring well on their disclosures in this area tended to have integrated climate-related risks into their overall risk identification and management systems. However, the explanation of how this integration works could in all cases be made stronger, with no company scoring perfectly across all three risk management elements.

Targets and Metrics

Most companies disclosed information on climate-related metrics and targets they have in place, with seven companies not reporting on this. Of those companies making disclosures (12 of 19), metrics and targets tended to relate to climate-related environmental issues such as energy use, waste and water. Only eight of 19 companies reported their greenhouse gas emissions. Apart from a couple of exceptions, disclosures tended to lack detail on the boundaries, measurement methodologies and timeframes. As with other recommendation areas, Japanese companies on average had higher quality disclosures than their counterparts in other countries.

Energy



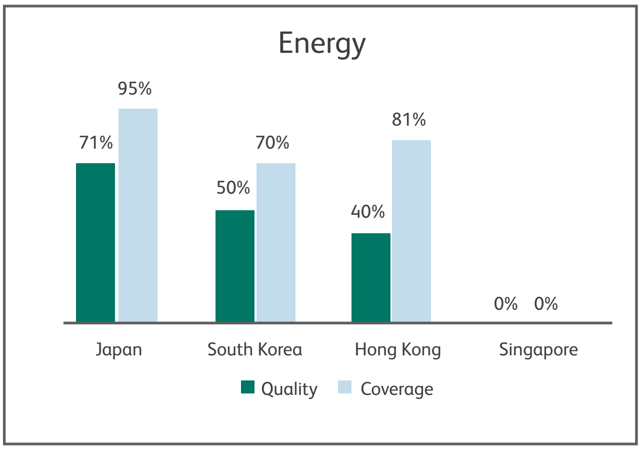


Figure 7. By TCFD focus area

By key market *(Source: EY)*

Sector Overview

Twenty energy sector companies across the four regional stock exchanges were assessed for this chapter, nine companies from Hong Kong, seven from Japan and four from South Korea. Total market capitalization for all companies reviewed within this sector was US$400bn and average company size was around US$20bn.

As a whole, the sector addressed 84% of the TCFD recommendations in their public disclosure and reporting from a 'coverage' point of view, with Japanese companies in this sector addressing 10 out of 11 on average, followed by Hong Kong with nine and South Korea addressing eight recommendations.

The average quality score of the sector as a whole sits at 53%, which is high compared to the average for all non-financial sectors reviewed in this chapter (which is 36%). Companies based in Japan performed best with average scores of 70%, followed by South Korea (50%) and Hong Kong based companies (40%).

The sector shows a clear out performance, which is expected due to a broad TCFD consciousness in general across energy companies. Accounting for this, the high performance in TCFD climate risk disclosure seems to be particularly predominant in the Asian region compared to other regions.[21] In Australia, the coverage (67%) and quality (35%) scores are significantly lower than this analysis of 84% and 53%, respectively. Only one company scored zero for its disclosures in this sector (which was based in South Korea).

Companies reviewed made their disclosures predominantly through publications such as their annual and sustainability reports, with only 12 out of 29 companies participating in the CDP over 2017.

Of the eight energy companies with the highest TCFD scores, five are based in Japan. Following the Fukushima Daiichi nuclear incident, and the subsequent large-scale shutdown on the nuclear power industry, Japan's ten regional electricity operators have been facing significant financial challenges. Despite this, TCFD-consistent reporting has been at a relatively good standard amongst this group.

In June 2017, South Korean President Moon Jae-in took a major step in saying his country would not try to extend the life of its nuclear plants, would close existing coal-fired plants, and would increase the role of renewable electricity generation. This would be a significant change in direction for the South Korean electricity sector, and will have long-term impacts on investment trends in the sector.

Governance

Quality and coverage of governance criteria under the TCFD were addressed well by the energy sector relative to other sectors, with both scored at or close to the top of all disclosures. Best in class performers set out the oversight structures used in relation to climate risk, as well as roles and responsibilities in managing climate risk.

Strategy

Energy sector strategy, in relation to the quality and coverage of its TCFD disclosures, had the highest scores of all sectors included in this analysis. Coverage of TCFD elements was consistent across the countries represented in this sector; however, Japan was a stand-out performer in terms of the quality of strategy-related disclosures in the energy sector. Best-in-class performers included separate consideration of climate risks and climate opportunities; however there was limited evidence of climate scenario analysis having been undertaken. Outlier companies at the lower end of the scale had not considered climate risk as part of their business strategy.

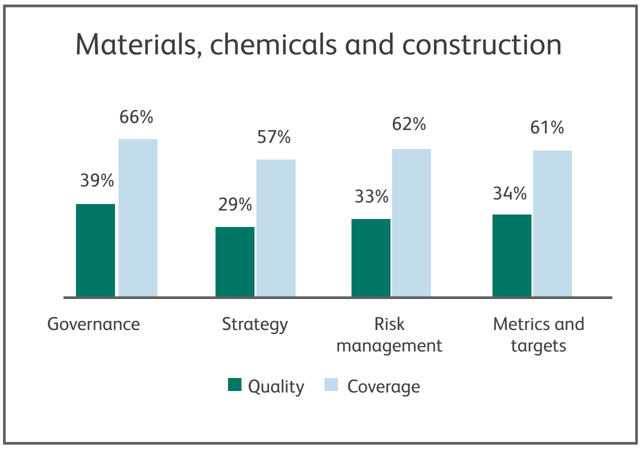
Risk Management

While the quality and coverage scores for risk management were the lowest of all four TCFD criteria in this sector, these results were best or near-best relative to other sectors considered in this chapter. Consistent with the overall results for this sector, Japanese-listed companies were the stand-out performers on both quality and coverage metrics.

Targets and Metrics

The targets and metrics requirements of the TCFD were well-addressed in the energy sector, with the highest scores for quality (and near-equal highest for coverage) of the four criteria. The relative performance of Hong Kong-based companies mirrored the overall findings for this sector, with coverage of TCFD issues close to that of other countries, but significantly lower results for the quality of the reporting. Best in class performers provided a range of climate risk-related metrics, disclosure of scope 1, 2 & 3 emissions, and emissions targets (both intensity-based and absolute targets) for the company.

Materials, chemicals, and construction



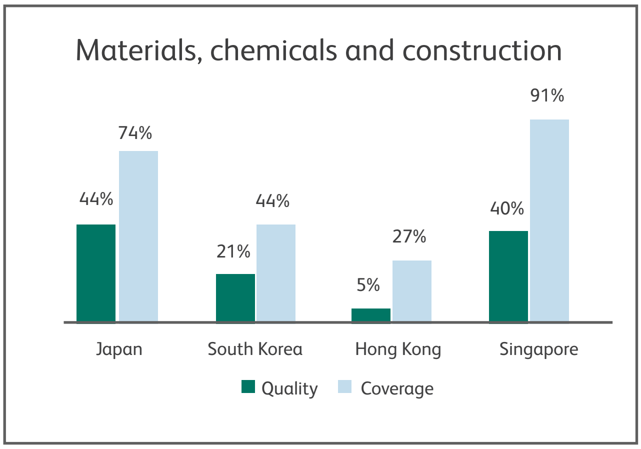


Figure 8. By TCFD focus area

By key market *(Source: EY)*

Sector Overview

For the materials, chemicals and construction sectors, 29 companies across the four regions were assessed, including 16 companies from Japan, 10 from South Korea, two from Hong Kong, one from Singapore and. The total market capitalization for all companies reviewed within this sector was $US430bn, with an average company size of around $US15bn.

As a whole, the sector's coverage of the TCFD recommendations averaged 61%, with Singapore standing out with an average of 10 (out of 11) TCFD recommendations assessed, followed closely by Japan (eight), with South Korea and Hong Kong showing significantly lower levels of coverage (five and three recommendations covered respectively).

The overall quality score for the sector's TCFD disclosures was 33%, just below the average for all non-financial sectors reviewed in this chapter (which was 36%). Singapore and Japan are leading the charge, with average scores of 40% and 44% respectively: South Korea averaged 21%, and Hong Kong averaged 5%.

The relative performance of this sector relative to others is similar to that identified in EY's Australia Barometer report[22]: The coverage and quality results for this research (61% and 33% respectively) closely align with the coverage and quality scores (56% and 23% respectively) for similar sectors in Australia.

Companies made their disclosures predominantly through publications such as their annual and sustainability reports, with only 17 out of 29 companies participating in the CDP over 2017. Eight companies scored zero for their disclosures in this sector: four from South Korea, three from Japan and one from Hong Kong.

Governance

The TCFD quality and coverage criteria for governance in the materials sector received low-range rankings relative to other sectors, with both scores at or close to the weighted average of all disclosures. Best-in-class performers were clearer in their disclosure of processes in relation to climate risk, as well as roles and responsibilities in managing climate risk.

Strategy

The materials sector strategy scoring was mid-range for coverage, and below-average (versus other sectors) for the quality of its TCFD disclosures. Japanese companies performed best from a quality perspective, while Singapore-based businesses performed substantially above average on the coverage of their disclosures. Over one-quarter of all companies did not meet any aspect of the TCFD strategy requirements, with best in class recording a score of over 85% for quality (and 100% for coverage).

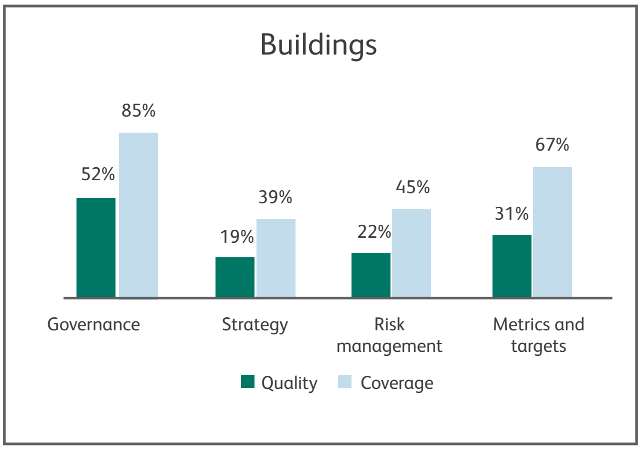
Risk Management

The quality and coverage scores for risk management were close to average compared to other sectors, with the sector's quality score being significantly lower than the best performing sectors of Energy and Transport. Japanese-listed companies out-performed companies listed in other countries on both the quality and coverage criteria for the materials sector.

Targets and Metrics

The materials sector scores for quality and coverage across the targets and metrics requirements of the TCFD were at or slightly below average, with the energy and transport sectors again providing best-in-class examples of disclosure. Companies listed in Japan and Singapore significantly out-performed those in South Korea and Hong Kong on both the coverage and quality scoring criteria.

Buildings



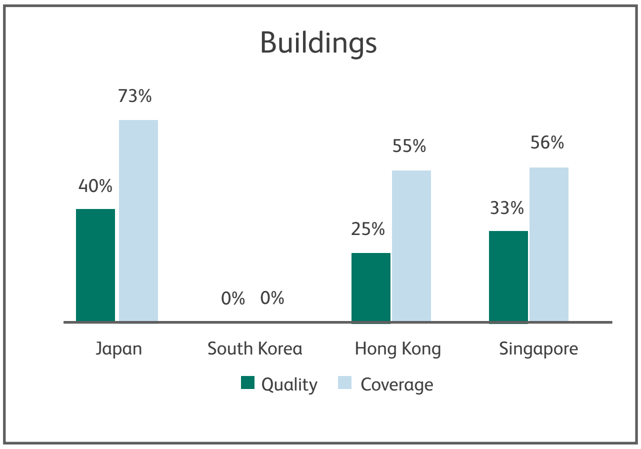


Figure 9. By TCFD focus area By key market *(Source: EY)*

Sector Overview

Building sector companies included in this analysis had an aggregate market capitalisation of $US445bn, similar to the materials, chemicals and construction sector, and with average company size of around $US20bn. The analysis included 12 companies from Hong Kong, nine from Singapore and two from Japan: no businesses from South Korea were included in this sector analysis.

The building sector saw the coverage score around 60% of TCFD recommendations addressed in public disclosures and reporting to some extent. Japan was the standout region, with an average of eight out of 11 (73%) recommendations addressed. Companies from Singapore and Hong Kong addressed an average of 6 out of 11 recommendations (around 55%). There were three companies scoring zero for their disclosures in this sector, two from Singapore and one from Hong Kong.

The average quality score of the sector is around 31%, with companies in Japan (40%) outscoring those in Singapore and Hong Kong (33% and 25% respectively). In comparison to sector performance in Australia, the overall sector results for coverage and quality here (64% and 33% respectively) are broadly in line with equivalent results here. Companies included in this sector made their disclosures predominantly through publications such as annual and sustainability reports, with only eight out of the 23 companies participating in the CDP over 2017.

Governance

Governance scores in the building sector out-performed the average, with scores close to best-in-class for coverage and in the top third for quality. On a country basis there was little differentiation in scoring, with Singapore-listed companies slightly out-performing businesses listed in Hong Kong and Japan for quality, and Japanese-listed companies best performing on a coverage basis.

Strategy

Unlike governance, the building sectors' strategy scoring was significantly below average. Excluding asset managers, both coverage and quality scores were close to worst-in-class. There was little differentiation by country of listing, with Japanese companies slightly outscoring both Hong Kong and Singapore-based companies on both the coverage and quality criteria.

Risk Management

Scoring against the TCFD criteria for risk management resulted in similar outcomes to strategy for the buildings sector: scores were in the lower-third of sector scores on both the quality and coverage criteria. However, unlike strategy there was a very strong country trend, with Japanese-based building firms clearly outscoring Hong Kong and Singapore-based firms on both quality and coverage.

Targets and Metrics

The building sector scores across the targets and metrics requirements of the TCFD were around average for both the quality and coverage criteria. Performance was similar across different countries in regards to the coverage of their targets and metrics disclosures, while Hong Kong based companies lagged behind Japan and Singapore listed companies from a quality perspective.

Mining and metals

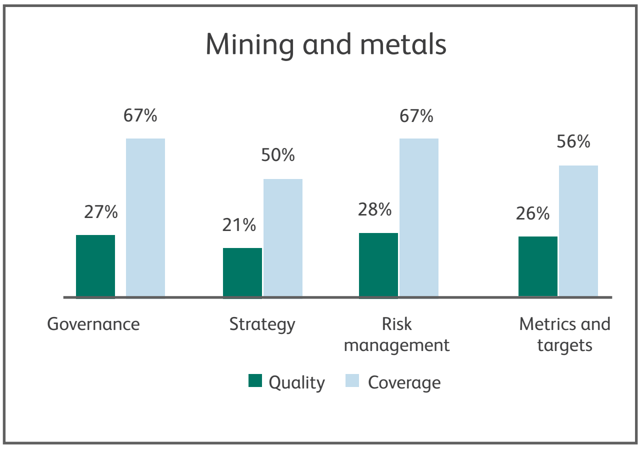
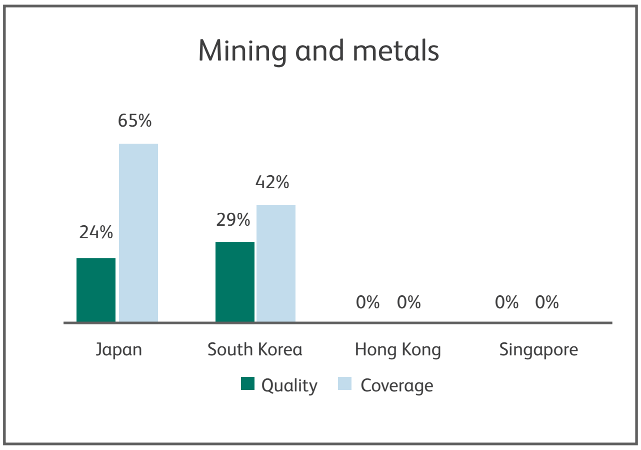


Figure 10.

By TCFD focus area



By key market *(Source: EY)*

Sector Overview

The 12 companies included in the mining and metals sector were drawn from Japan (nine) and South Korea (three). Total market capitalization for all companies reviewed within this sector was $US120bn, the smallest sector capitalisation for the listed companies assessed in this chapter, and the average company size was $US10bn.

As a whole, the sector's coverage score for the TCFD recommendations was 59%, with Japanese companies (addressing on average 7 out of 11 recommendations) outperforming South Korean companies (addressing on average 5 recommendations) across the sector.

The average quality score of the sector was around 25%, significantly below the average of 36% for all non-financial sectors reviewed in this analysis. With an average score of 29%, South Korea marginally out-performed Japan on 24%. Against Australian results for this sector, coverage scores for Japan and South Korea tended to out-perform peers in Australia, while quality results were similar for the two studies.

One company scoring zero for its disclosures in this sector (listed in Japan), while overall the research found that larger entities (by market capitalization) scored significantly higher than smaller entities in this sector.

Disclosures were predominantly made through publications such as their annual and sustainability reports, with 10 out of 12 companies participating in the CDP over 2017. No companies disclosed undertaking scenario analysis.

Governance

Governance was one of the higher rating TCFD categories for the mining and metals sector, with nine out of the twelve companies assessed at least partially covering one of the two recommendations. The quality of disclosures was limited by the amount of detail in the information reported, with the majority of companies describing which board committee and/or management executive is responsible for climate change, but few communicating how the board considers climate-related risks when guiding strategy, or how management is informed about and monitors climate-related issues.

Strategy

Disclosures in line with the TCFD's strategy recommendations were the weakest of any categories for the mining and metals sector. While approximately half of the companies assessed articulated the climate-related risks and opportunities faced by their organisation, typically via CDP responses, few adequately covered the process used to determine which risks and opportunities could have a material financial impact on the organisation, or described the impact of the risks and opportunities on their business. No mining or metals companies reported undertaking scenario analysis, with negligible mention of the resilience of organisations' strategies in a carbon-constrained future.

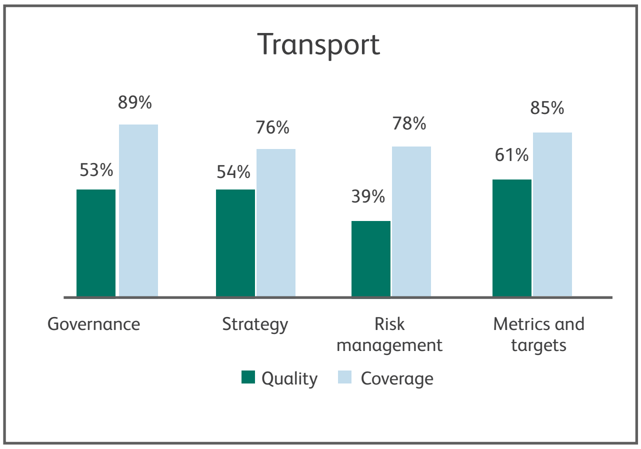
Risk Management

Mining and metals companies scored higher for risk management disclosures than any other categories, with one company in particular reporting in alignment with the TCFD recommendations. Most companies communicated their organisations' process for identifying and assessing climate-related risks, and were able to partly describe how these risks were managed, although lacking detail. Only two companies made more than cursory mention of how processes for identifying and managing climate-related risks had been integrated into their organisation's overall risk management.

Targets and Metrics

Higher rating mining and metals companies reported their scope 1, 2 and 3 emissions, along with a selection of key metrics used to monitor and manage climate-related risk such as water and energy use. Many of these companies also disclosed how related performance metrics were incorporated into remuneration policies. Reporting of targets was more limited, with only three companies disclosing an emissions reduction target. While some companies reported incorporating an internal carbon price into decision making process, no organisations disclosed their carbon prices externally.

Transport



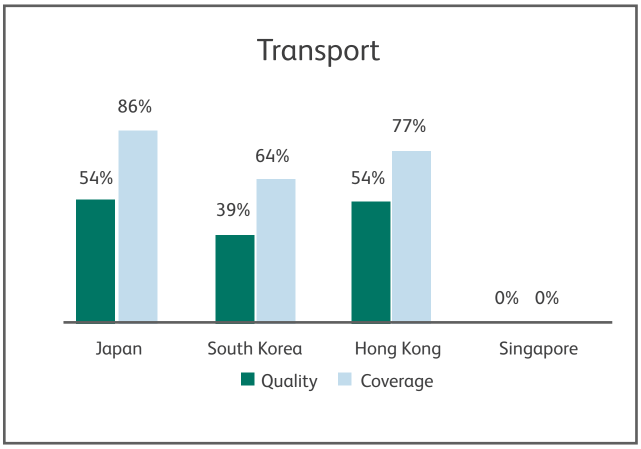


Figure 11. By TCFD focus area By key market *(Source: EY)*

Sector Overview

The transport sector was the largest listed sector assessed in this analysis, with the 18 companies included in the analysis having a total market capitalisation of $US725bn and an average market capitalisation of $US40bn. Japanese companies dominate the analysis, with 13 companies listed in that region compared to three from South Korea and two from Hong Kong.

The sector scored well on coverage, with 81% (on average) of the TCFD recommendations being addressed in public disclosure and reporting. Regional differences in coverage were relatively minor, with Japan and Hong Kong on average having around 20% greater TCFD coverage than companies from South Korea.

The average quality score of the sector was 52%, which is well above the average for all non-financial sectors reviewed in this chapter (average of 36%). Again, Japan and Hong Kong were the leading performers, with scores around 15 percentage points above the South Korea average.

Interestingly, the performance of this sector was significantly higher on both the coverage and quality metrics than that reported for Australia (46% and 25% respectively), meaning that Asia-based transport companies addressed coverage and quality almost twice as effectively as peers in Australia. At the same time, two companies scored zero for their disclosures: one each from Japan and South Korea.

Companies reviewed made their disclosures predominantly through publications such as their annual and sustainability reports, with half of the companies assessed having participated in the CDP in 2017.

Governance

The coverage of the transport sector's governance disclosures was the highest-rated of all sectors, with all but two (of eighteen) companies achieving a 100% coverage score. Quality scores for this sector were also significantly above average, with only the insurance sector delivering higher quality disclosures for governance. South Korean firms had significantly lower scores for both quality and coverage than businesses from Japan or Hong Kong.

Strategy

The transport sector received the second-highest scores for both the quality and coverage of their climate strategy disclosures, with the energy sector slightly out-scoring the transport sector on both measures. Hong Kong based companies achieved higher quality and coverage scores for their strategy disclosures in this sector than businesses from either Japan or South Korea.

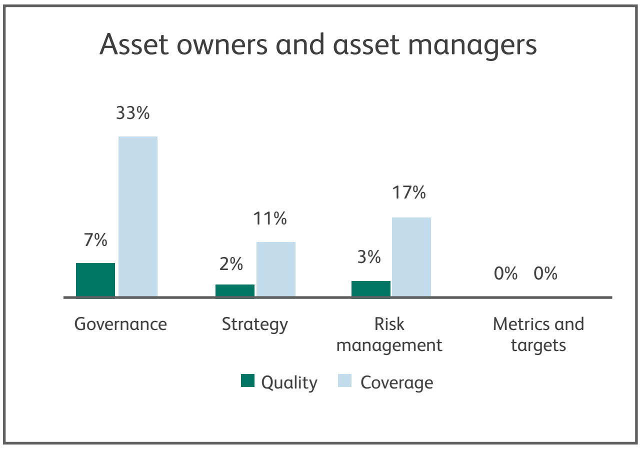
Risk Management

Transport companies scored higher for the coverage of their risk management disclosures than any other category, and scored in the top three sectors from a quality perspective. Three companies (two from Japan, one from Hong Kong) were particular stand-outs for the quality of their climate risk disclosures, with Japanese companies overall performing best from a combined quality and coverage assessment.

Targets and Metrics

The transport sector received the equal highest score for quality, and second-highest score for coverage, against the targets and metrics TCFD criteria. Scores for quality and coverage were significantly above the average result for this criteria, with four companies (three from Japan, one from South Korea) receiving top scores for the quality of their targets and metrics disclosures. On average, Japanese companies received the highest coverage scores, while Hong Kong-based companies achieved the best quality scores.

Asset owners and managers



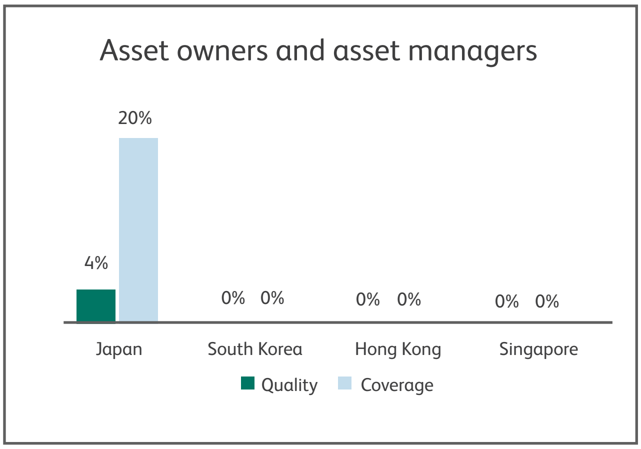


Figure 12. By TCFD focus area

By key market *(Source: EY)*

Sector Overview

Asset owners and managers were identified separately from the broader stock market capitalisation approach, relying instead on records from country-based regulators in the four countries. Following this approach, some large asset managers and owners were designated to other categories: for example, REIT was allocated to the building sector, while conglomerates were allocated to the sector they mainly operate within and many diverse financial institutions were classified under the banking and insurance categories. Many large asset managers and owners are also unlisted, so were not included in this analysis. This narrowed the focus in this sector to six listed asset management companies, across the four regions.

Not withstanding the small sample size, these businesses represent combined assets under management of $US2tn, with an average of $US325bn under management. Overall the results for this sector were very revealing about the nature of climate change reporting. Generally, listed asset managers did have sustainability or corporate responsibility reports or dedicated webpages, but climate change was rarely identified or explored as a stand-alone risk. Only two of the asset managers reported to the CDP directly, but these responses contained a low level of detail compared to the other sectors analysed within this chapter.

The underperformance of this sector follows similar findings in EY's Australia-focused climate barometer report[23] . A potential reason for this underperformance appears to be the difference in stakeholders between asset managers and other (listed) corporations. Asset managers' main stakeholders are investors using the services of the manager, rather than shareholders of the company. This means that some disclosures a listed corporate would file are not made public by asset managers, and instead may go directly to investors. Secondly, given the unlisted nature of the sector, it also means the sector faces less scrutiny by the public and media on issues such as climate change.

Japan was the only country where some asset managers addressed climate change in their public disclosures, touching very lightly on the TCFD governance and risk management dimensions. But even in Japan the broad adoption of TCFD recommendations and comprehensive climate disclosures still seems some way off, an observation that is echoed in other recent publications[24]. Investors across the region therefore have an opportunity to align their long-term objectives with a thorough understanding of non-financial risk facing their portfolios.

CHAPTER 3

Compare and contrast: disclosure in Asia against global trends

In addition to the sector-based analysis of major companies across the four stock exchanges, investors were keen for a broad overview of disclosure in Asia, across markets and companies and also to understand where Asia sits in relation to global TCFD reporting. Additional TCFD data and analysis was provided by AIGCC member FTSE Russell from their first annual assessment against the TCFD framework, encompassing the FTSE All-World universe of over 3000 companies. This section uses another methodology provided by FTSE Russell to assess how disclosure levels in Asia compare to disclosure levels globally, and reviews country by country performance.

Methodology

FTSE Russell's ESG data model helps investors understand a company's exposure to and management of Environmental, Social and Governance issues. Within each area of ESG disclosure, there are fourteen more specific themes (including for example: climate change, labour standards and corporate governance).[25]

FTSE Russell has fourteen climate change indicators which reflect the four categories of TCFD disclosure recommendations: Governance, Strategy, Risk Management and Metrics and Targets. With the exception of two quantitative emissions indicators each indicator consists of two parts; a) partial disclosure and b) complete disclosure. Ten indicators apply to all companies and four indicators are applicable to companies with high or medium exposure (based on a company's Industry Classification Benchmark level 4 sub-sector classification[26]) to climate change. For example, if a company is classified in automobiles, airlines, exploration & production.

Using FTSE Russell data captured between April 2017 and March 2018 against the fourteen indicators (see Appendix) for companies in the FTSE All-World universe we calculated the rate of disclosure on each question, a) and b), on the indicators and then aggregated the results at country and regional levels. The countries reviewed were Malaysia, Indonesia, Thailand, India, Taiwan, China, Hong Kong, Singapore, South Korea and Japan.

Global levels of disclosure

Globally, the governance category of the TCFD framework saw the highest levels of disclosure (figure 13), with 76% of companies disclosing that they have a policy or commitment statement to address climate change, referencing CO2 or GHG emissions. Furthermore, 65% of companies have set policies which detail their plan to reduce their impact on climate change. The remaining governance indicators were not as well reported with only 25% of companies included ESG performance in their top executives' remuneration and 22% of companies with board committee oversight of climate change.

Global disclosure is noticeably lower in the other three TCFD categories (strategy, risk management and metrics and targets). Only 53% of companies recognise climate change as a relevant risk to their business (Risk Management), with the same number disclosing their scope 1 and 2 operation emissions of which 74% had the emissions data externally verified (Metrics and Targets). In addition, less than 50% of companies have disclosed any emissions reduction targets (Metrics and Targets).

Strategy is the least disclosed area with only 50% of companies describing how they incorporate climate change risks and opportunities into their strategy. Scenario analysis is still nascent in all regions with 21% of companies conducting climate-related business strategy scenarios such as the 2 degree scenario.[27]

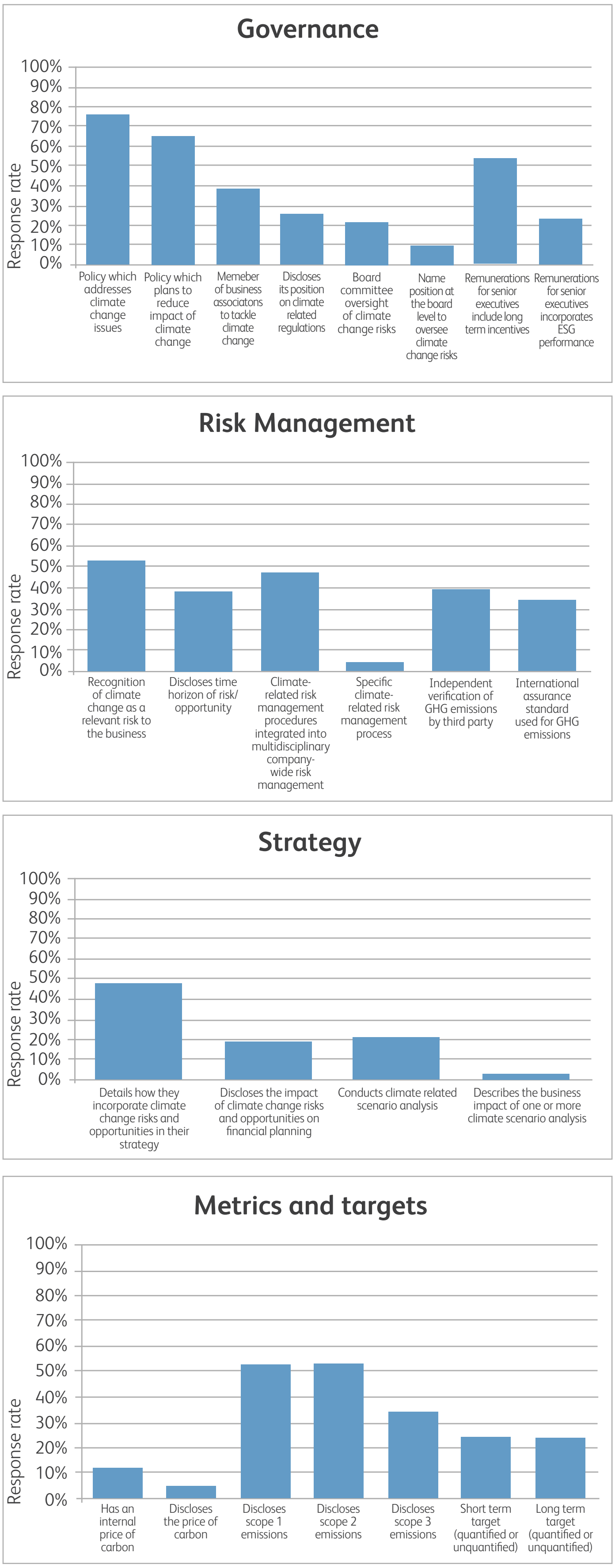


Figure 13: TCFD state of disclosure for companies of the FTSE All-World Index (Source: FTSE Russell. Data captured from April 1 2017 to March 31, 2018.)

Company disclosure across regions

We summarised the areas of stronger disclosure grouped within the four TCFD indicators across the regions globally, before doing a deeper dive into the Asian markets to compare performance in the region.

Areas of strong disclosure for **European** companies were specifically on climate change policy (governance indicator) with 80% of companies disclosing. Reporting on scope 1 and 2 emissions (Metrics and Targets) is just over 72% while recognition of climate change as a risk and disclosure of mitigation procedures was disclosed in 70% of companies and third party GHG emissions verification was just over 60% in the risk management indicator.

North American companies had better rates of disclosure in governance with over 60% disclosing a climate change policy and recognising climate as a risk to their business as part of risk management. Just under 60% incorporate climate change risks and opportunities in their strategy and disclose their scope 1 and 2 emissions.

African (mainly South African) companies had their highest levels of disclosure (88%) in articulating a climate change strategy (governance) and 75% incorporating climate change risks and opportunities into their strategy. Again nearly 80% in four out of five risk management indicators. Scope 1 and 2 emissions were reported by around 70% of companies. Despite the smaller number of overall companies this indicates a relatively good level of awareness and application of climate change risks and opportunities in these markets.

Companies in **Oceania** disclosed well on climate change policies (88%); followed by 70% incorporating climate change into their strategies. Risk management was disclosed relatively well at around 60% on average across four out of the five areas, and scope 1 and 2 emissions disclosure was also disclosed at around 60%.

South American companies have a decent base of reporting against scope 1 and 2 emissions at around 60%; with risk management the next area of focus at nearly 50% for recognition of climate change as a relevant risk to their business and the disclosure of risk management procedures. While only about one third of companies in the Middle East have climate-related policies and only 19% are reporting their emissions.

Governance

All regions scored better than the other indicators with companies publicly disclosing a climate change policy that addresses climate-related risks. European, Oceanic, African, South American and Asian disclosure rates are all above 70%. Conversely the Middle East scored below 33% and has the lowest disclosure on all four governance indicators.

65% of Asian companies disclosed their climate change policy, however in contrast to other TCFD governance indicators for the region, only 6% of companies include ESG performance in their top executives' remuneration and only 7% of companies have set up a board committee to oversee climate change issues.

On a regional level, Oceania and Africa are the overall best disclosers, as the only two regions disclosing at a rate higher than 50% across all TCFD governance indicators. In the FTSE All-World Index, South Africa accounts for 93% of African companies which explains why Africa is likely to perform well, as in order to be listed on the Johannesburg Stock Exchange companies are required to annually report the extent to which they comply with the King Code of Corporate Governance annually[28] .

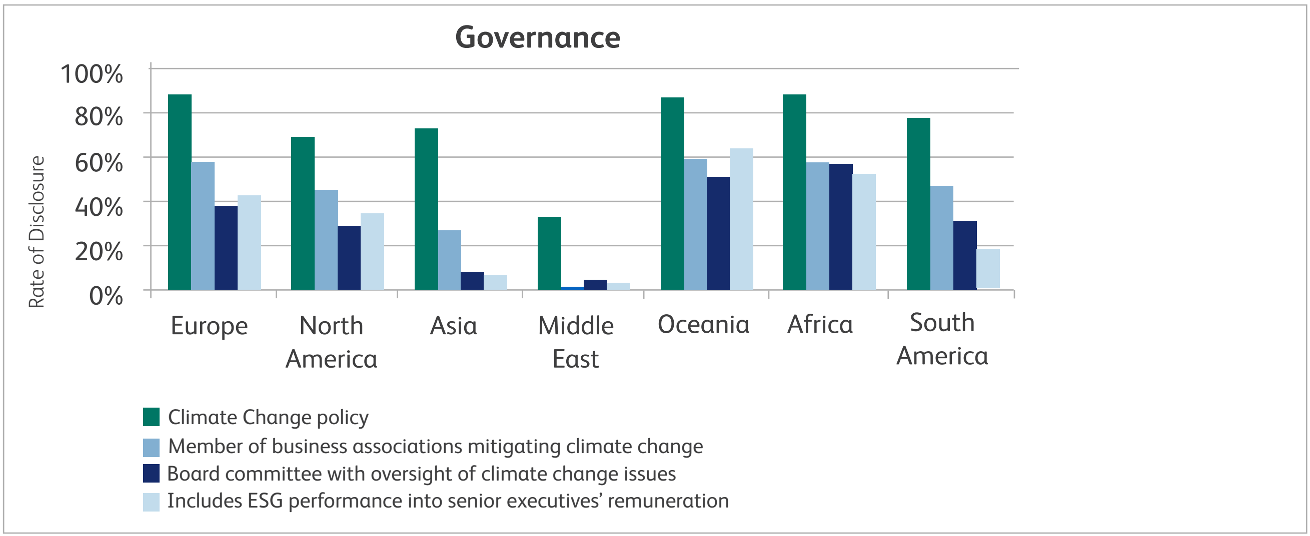


Figure 14 : Regional comparison for TCFD indicators - Governance (Source: FTSE Russell. Data captured from April 1, 2017 to March 31, 2018.)

Strategy

Oceania, Africa and Europe, all above 60%, are the three regions that most incorporate climate change risks and opportunities into their strategy. However, Africa is the only region for which more than 50% of companies have disclosed the impact of climate change on their financial planning (OPEX, CAPEX, M&A, debt).

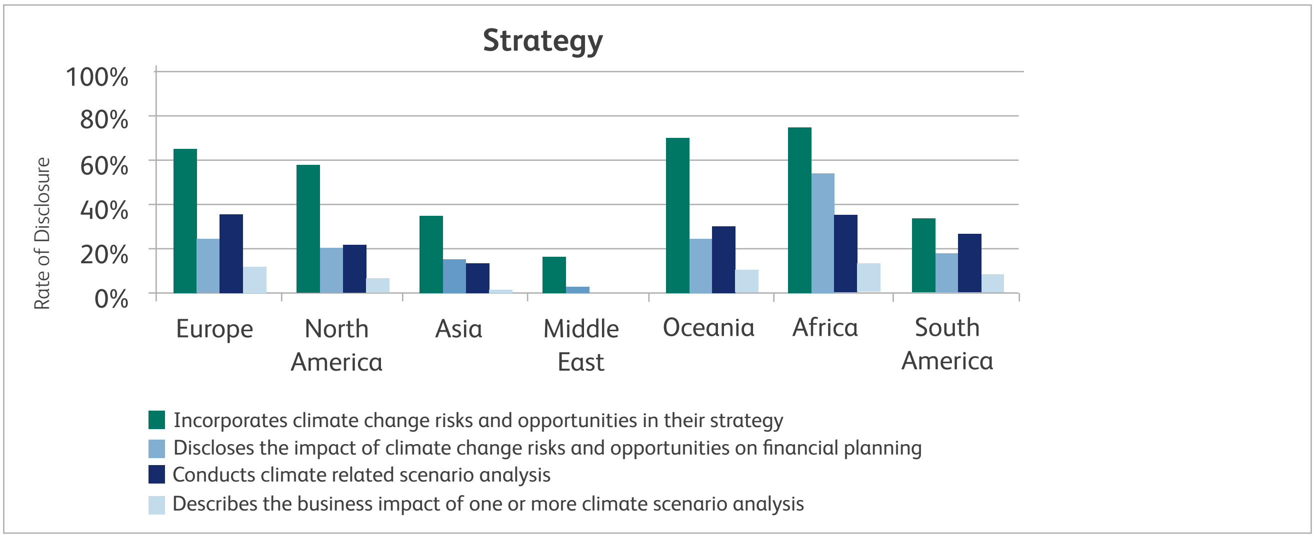


Figure 15: Regional comparison for TCFD indicators - Strategy (Source: FTSE Russell. Data captured from April 1, 2017 to March 31, 2018.)

Risk management

For Europe, North America, Oceania and Africa, more than 50% of companies recognise climate change as a relevant risk to business and implement risk management procedures. Again, Asia and the Middle East do not perform well on risk management indicators. Only a third of Asian companies recognise climate change as a relevant risk to their business and implement climate risk management procedures.

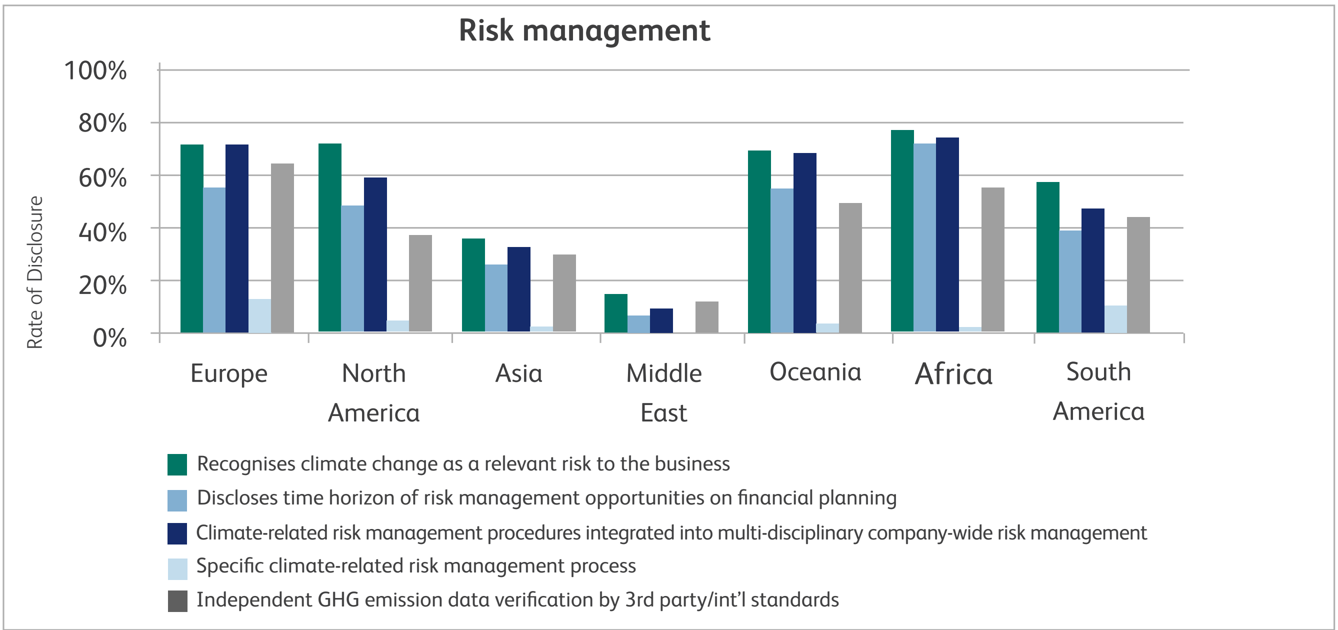


Figure 16: Regional comparison for TCFD indicators – risk management (Source: FTSE Russell Data captured from April 1, 2017 to March 31, 2018.)

Metrics & Targets

In this TCFD disclosure category, Europe is the most progressed. This could be explained by the more stringent carbon regulations in the region: 73% of companies disclose their operating emissions and 38% have long-term (more than five-year horizon) emissions reduction targets.

In contrast, fewer than 41% of companies in Asia disclose their scope 1 and 2 emissions and only 7% of the companies use an internal price of carbon.

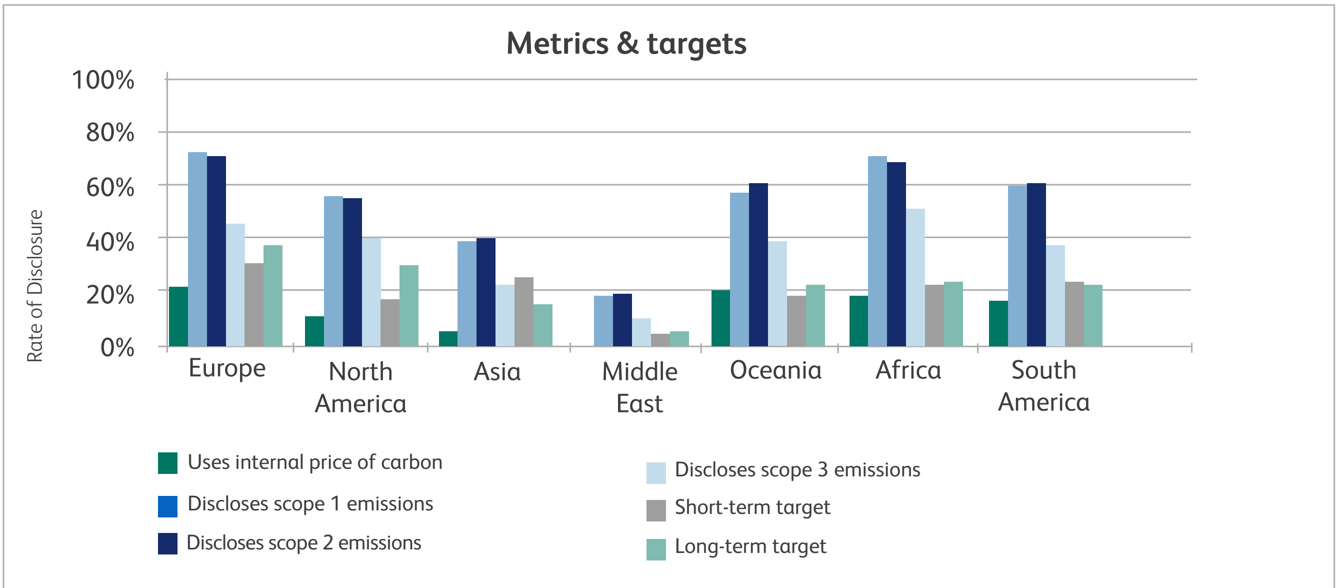


Figure 17: Regional comparison for TCFD indicators – Metrics & Targets (Source: FTSE Russell. Data from April, 2017 to March 31, 2018)

A DEEPER DIVE: DISCLOSURE IN ASIA

Disclosure levels across Asia are generally lower than seen in other markets. However, in one area of governance it is encouraging to see that 74% of Asian companies disclosed a policy or commitment statement to address climate change, including reference to CO2 or greenhouse gas emissions, and 65% described in their policy how they intend to decrease their impact on climate change.

In recent years it would appear there is a growing level of awareness of climate change and its related risks and opportunities in the region.[29] However, there is still a large gap for Asia to catch up to its global peers across the full TCFD framework. Moreover, within Asia there are large variations in disclosure across countries.

When comparing across markets within the region, Taiwan and Malaysia stand out, with more than 90% of companies in both countries disclosing climate change policies, whereas China has 58% of companies disclose policies which address climate change issues. Japan has the most companies in the region(506) with 75% of these companies disclosing climate change policies, which is around the global and regional average.

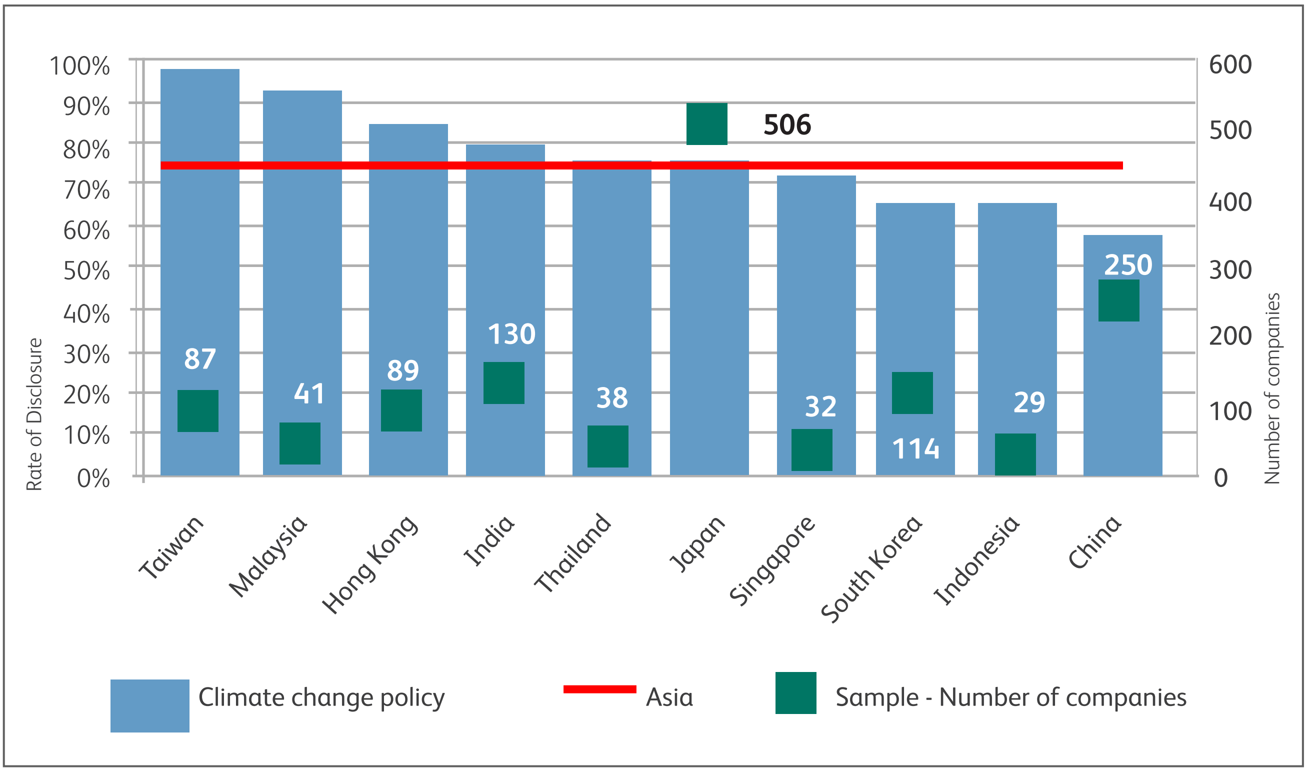


Figure 18: Climate change policy disclosure (source: FTSE Russell.Data captured from April 1, 2017 to March 31, 2018.)

Japanese companies are outperforming their peers when it comes to disclosing on emissions reduction targets (see figure 20) with 45% of companies disclosing a short-term target and 27% of companies disclosing a long-term target. Japan, South Korea and Taiwan are the only countries which exceed the region's average for both types of targets. Hong Kong, Indonesia and China, in comparison are well below the Asian average.

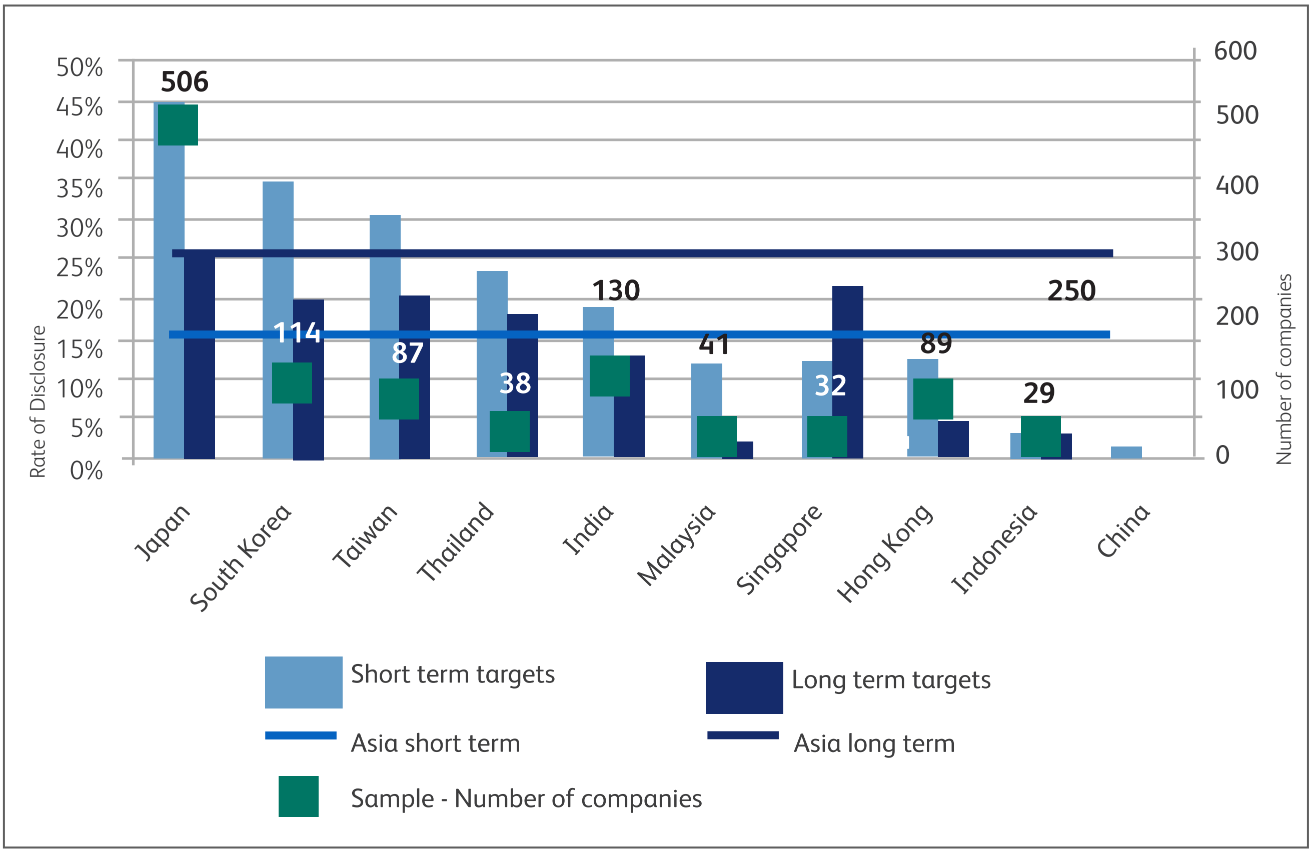


Figure 19: Target disclosure in Asian countries (source: FTSE Russell. Data captured from April 1, 2017 to March 31, 2018.)

Country analysis

The following market analysis takes a deeper dive in a number of key Asian markets to see where companies are performing better on disclosure against the TCFD.

China (250 companies)

China is the only country in Asia to have fewer than 60% of companies with a climate-related policy. Other governance indicators are hardly disclosed with fewer than 1% of companies disclosing board oversight of the management of climate change risks, and incorporating ESG performance into senior executives' remuneration. Scope 1 and 2 emissions are the only other TCFD indicators which were disclosed at a rate above 10%.[30]

While current disclosure against the relatively new TCFD framework is starting from a low base, environmental disclosure of Chinese companies has been on the rise since 2015. Coal, oil & gas and automobile manufacturing sectors are disclosing more as these three sectors have clear and significant implications for air, water and soil pollution, and as such face more regulatory pressure which is driving disclosure. This is especially true for the coal sector, which has been a primary target of the Chinese Government in its war on pollution.[31] For example, China Shenhua scored 100% environmental disclosure in 2015 according to a recent report by SynTao.[32] All central-level State-owned enterprises (SOEs) are mandated to publish CSR reports which explains some of the higher disclosure rates by these companies in general, however the quality of the disclosure can be improved in future to be more aligned with the TCFD framework.

The China Securities Regulatory Commission (CSRC), in collaboration with China's Ministry of Ecology and Environment (the former China's Ministry of Ecology and Environment), has introduced new requirements that, by 2020, will mandate all listed companies to disclose environmental information associated with their operations in a three-stage roadmap.[33] Given the new disclosure requirements coming into effect from 2018 for heavy emitters, investors anticipate a significant rise in reporting on environmental metrics. A TCFD Pilot project between the Chinese and UK governments involving ICBC, the Industrial Bank and Bank of Jiangsu are paving the way for TCFD reporting amongst financial institutions. Investors are encouraged by the growing levels of activity around environmental and climate reporting and would hope to see corporates start to adopt the TCFD framework in the next iteration of environmental reporting under the new regulations.

Hong Kong (89 companies)

Hong Kong companies outperformed on disclosing their climate policies (84%) and steps to implement these policies (72%) in the governance indicator when compared to other areas of reporting. However, more work is needed in other governance areas including board level oversight of climate change and linking long-term performance incentives to include ESG and/or climate change considerations. Within metrics and targets, Scope 1 and 2 emissions disclosure is currently around 40% and 45% respectively, but more disclosure is required around short and long-term targets and the use of internal carbon prices. Strategic opportunities such as mitigation, new products and research and development have been identified by 37% of companies while scenario analysis is also relatively nascent in the region, as is the case globally. The risk management indicator could also benefit from a greater company focus going forward.

There are, however, a few leading corporates which have consistently disclosed well against CDP[34] over a number of years in their sectors. They are likely performing better on an individual basis which may not be represented in these aggregate percentages. Many of these companies have adopted international reporting standards such as the Global Reporting Initiative and ISO and showed a high level of senior management involvement in ESG issues.

Historically, domestic investors in Hong Kong have been behind corporates in their awareness and understanding of these risks and opportunities and have not driven the demand for greater disclosure or action in this regard. However, international fund managers, including several AIGCC members[35] based in Hong Kong have been very active in driving greater awareness and increasing investor demand in the market and indeed across the region. There are also a number of recent developments that are helping to drive increased investor and corporate awareness in the Hong Kong market. The Hong Kong Stock Exchange is becoming more active in this space including issuing 'comply or explain' ESG disclosure regulation[36], becoming a partner of the UN Sustainable Stock Exchanges Initiative (June 2018) as well as the launch of the Hong Kong Green Finance Association chaired by Ma Jun (September 2018)[37] and the issuance of government green bonds [38]. Investors look forward to this increased activity translating into greater climate awareness and increased disclosure going forward.

India (130 companies)

Indian companies' area of best disclosure was on climate policy statements (80%) and action to reduce and avoid emissions (67%). However, more work is required on board level governance and oversight of climate change. Detailing the opportunities such as mitigation, new products and research and development on climate change under their strategies was disclosed at 72%. Areas for further work include metrics and targets, with scope 1 and 2 emissions disclosed at 40% and only 7% using an internal carbon price. Similarly, risk management disclosure was at 40% of companies who recognised the risks and opportunities and less again in related risk management procedures, including third party GHG emissions verification.

In addition, companies such as Mahindra Group[39] have committed and set Science Based Targets (SBT)[40] along with 22 Indian companies. As these targets are set, investors anticipate greater transparency around climate reporting in the future. Areas of better disclosure and action by Indian companies are most likely in response to the government ramping up their renewable energy ambition and with the currently implemented government policies, India is expected to overachieve its climate action targets submitted under the Paris Agreement.

Indonesia (29 companies)

Consistant with other markets in the region, companies in Indonesia disclosed better (66%) on their public policy to address climate change and 52% disclosed on the reducing the impact of their operations on climate change. However, more work is required overall in the governance area, specifically around overall board level oversight of climate change from companies in this market. This may be explained by the fact that only 28% of Indonesian companies see climate change as a relevant risk to business. The most disclosure around strategy (38%) was the impact on the business opportunities arising from climate change. However, companies did not provide any details on the potential financial impacts of these opportunities such as CapEx, OPEX, debt, etc. Disclosure on metrics and targets is also an area for further work with three companies (10%) disclosing scope 1 emissions and one company (3%) disclosing an emissions reduction target.

Indonesia's Financial Services Authority and the Environment and Forestry Ministry launched a Sustainable Finance Roadmap in December 2014 and they have introduced some additional ESG standards in 2016. This should help to increase the rate of disclosure for TCFD indicators in the near future.

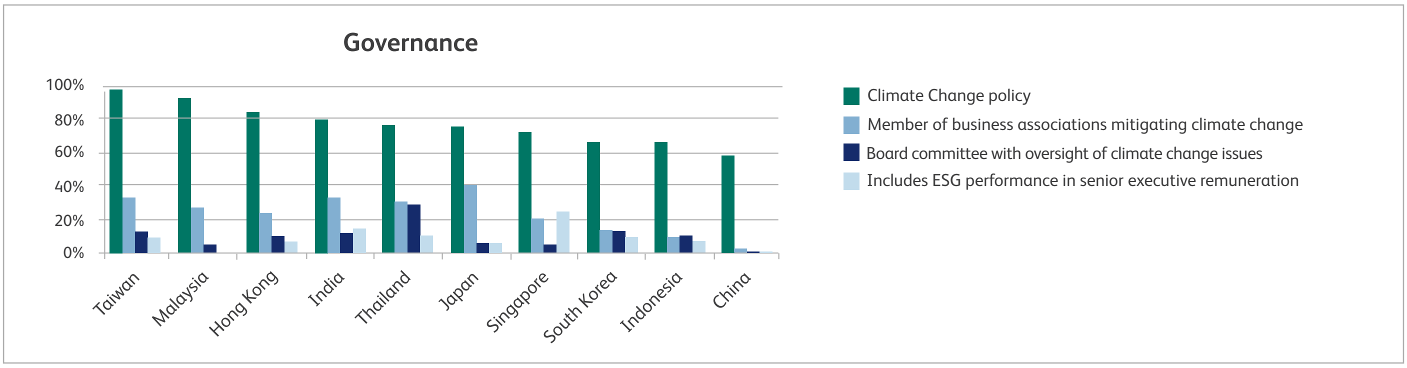
Japan (506 companies)

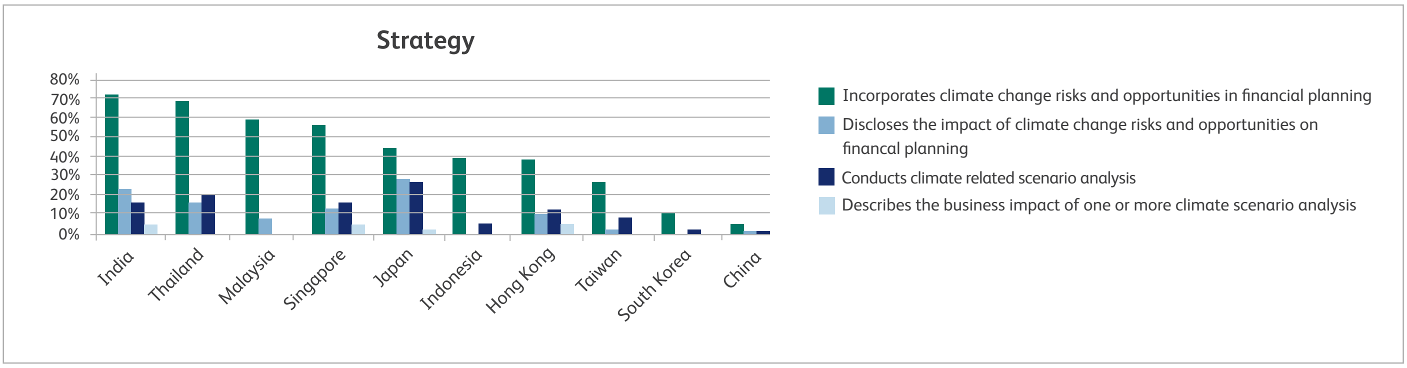
Overall, companies are performing just above the regional average in terms of policy statements (76%) and associated implementation plans. Similar to regional peers, other areas of governance disclosure could be improved such as board level oversight and linking remuneration incentives to long term strategies that include climate considerations. Around 44% of companies disclosed their detailed activities on strategy, risk management and emissions. However, Japanese companies were the better performer in the region when it comes to short term targets at 45%, just ahead of South Korea and Taiwan. Just above 25% of companies are reporting long term climate targets.

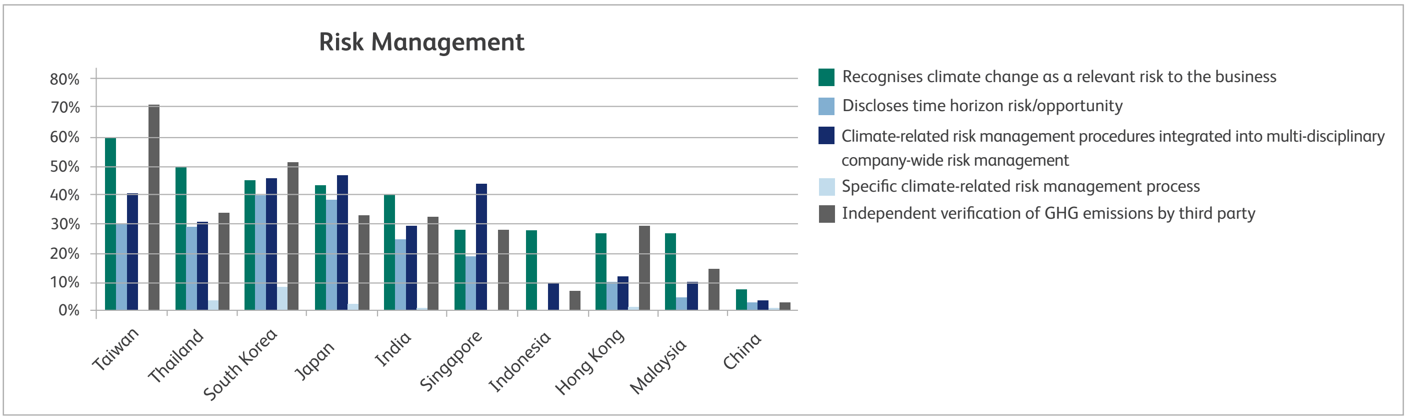
As with other markets, there are many sectoral leaders who have been strong corporate reporters for several years as analysed by CDP. Japan ranks second only to the US in the number of companies who have committed (64) to setting Science Based Targets[41], 26 of which already have targets approved. As a result of this strong base of reporting and target setting, investors would expect to see more detailed disclosure against the TCFD from these companies in the next reporting cycles.

Investor awareness in Japan is increasing, with the Japanese Government Pension Investment Fund (GPIF) actively making ESG investments first in Japan and more recently expanding overseas, with the aim of raising allocation of ESG investments to 10% of total stock holdings. GPIF has brought about market and region-wide change on ESG issues, including on climate with their announcement to join the Climate ACtion 100+. In addition, a number of recent announcements[42] including from NipponLife, Japan's largest insurer and the first Japanese bank, Sumitomo Mitsui Banking Trust, show intent to restrict financing for any new coal plant projects in any jurisdiction. Dai-Ichi Insurance have made a similar announcement, and the three major banks have also updated their climate policies this year. Additionally, Japanese investors make up the greatest number [43] of domestic Asian investor signatories for Climate Action 100+, who, with international investors, will engage with 10 focus companies in the local market and request companies to provide more detailed disclosure under the TCFD.

Given Japan has the greatest number of companies in the FTSE All-World Index universe for the region, it may warrant separate analysis and benchmarking within its own market on TCFD reporting in the future.







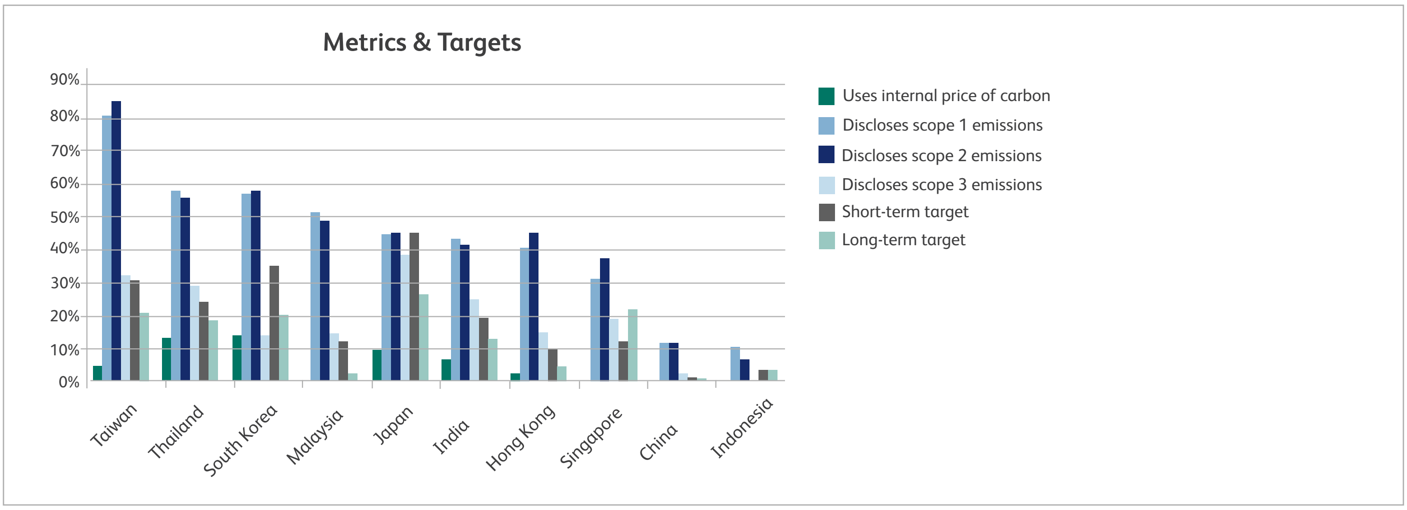


Figure 20: TCFD analysis by country and performance (Source: FTSE Russell. Data captured from April 1, 2017 to March 31, 2018)

Malaysia (41 companies)

Malaysian companies had a high disclosure rate of climate change policies (93%) and consistent with this result, 78% of companies have committed to decrease their impact on climate change. However, other areas within governance were not nearly as strong. Other areas of good disclosure were details around how they incorporate climate change risks and opportunities in their strategy (59%) and more than half of the Malaysian companies are disclosing their scope 1 and 2 operating emissions. Other indicators in strategy and risk management require further work, with 27% of companies recognising climate change as a relevant risk to their business.

Bursa Malaysia, the local regulator requires ESG reporting as a listing rule, requiring sustainability statements in annual reports. This statement must cover the management of material economic, environmental and social risks and opportunities. This requirement will cover all companies (even small caps) from 2018 onwards, so investors can expect that disclosure rates will improve in the near future. Furthermore, Bursa Malaysia is a supporting partner of MYCarbon- a National Corporate GHG Reporting Programme for Malaysia, where the goal is to set up a globally recognised standard and programme for corporate GHG accounting and reporting in Malaysia.

Singapore (32 companies)

Singaporean companies performed above average in the governance and specifically climate policy response (72%) and the low carbon transition (63%), with opportunities identified across nearly two thirds of the companies. However, the detailed implementation of how the transition will be achieved is generally lacking detail and not disclosed across many companies. Within risk management, encouragingly 47% of companies reported climate related risk management procedures, however further work is required on metrics and targets, including emissions disclosure. Again, while there are a few standout sectoral leaders in property and telecommunications who are setting Science Based Targets, many of the companies require further work on their disclosure.

With the 'comply or explain' ESG guidelines coming into force for 2018 reporting, investors would expect to see an improvement in the next round of reporting. In addition, there is a carbon tax coming into force in 2019 and with the recent announcements to establish an Asian Sustainable Finance Initiative and the Monetary Authority partnering with IFC to ramp up green bonds in the region in addition to other capacity building initiatives[44], Singapore is working to position itself as the regional green leader in ASEAN. The building blocks are being put in place, and investors will be looking to see how Singaporean companies are planning and articulating their low carbon strategies to stay competitive in a fast growing region that is key to the global net-zero carbon future needed by 2050.

South Korea (114 companies)

South Korean companies are disclosing a little below the average for the region with 66% reporting their climate policies as one part of climate change governance. In contrast, other governance areas such as board level oversight requires more attention. In this market, the highest rate (28%) of disclosure for companies was on climate change policy and regulation, likely connected to the active carbon market. They have reasonable disclosure of scope 1 and 2 emissions at just over half of all companies (57%), however disclosing on short and longer-term targets and internal carbon pricing requires further attention. Risk management relating to climate change was also addressed by around 50% of companies, however there was a distinct lack of climate specific risk management policies mentioned. Further work is required in articulating how Korean company strategies can benefit from the transition to a low carbon economy.

There are a number of factors that may contribute to greater adoption of TCFD disclosure going forward in this market. In a welcome move, the largest institutional investor the National Pension Service of South Korea, adopted the Stewardship code in July 2018 [45]. This should help to improve corporate governance focus in the market and increase shareholder interests and ultimately returns, by raising corporate value. South Korea already has a functioning Emissions Trading Scheme [46], and are now looking to increase openness to international markets in coming years. They now allow imports of international units for large emitters to meet compliance obligations, which should encourage private sector investment in international trading. Companies can take advantage of this, demonstate to investors more transparency and competitive value as they transition to lower carbon operations.

Taiwan (87 companies)

In several TCFD indicators, Taiwanese companies have the leading disclosure rates in the region. The strength in the average disclosure is driven from articulating (98%) and implementing (93%) climate policies. However, there is much less disclosure in other areas of governance when it comes to board level oversight and on board committees on climate change there is only 11% disclosure, with virtually no disclosure around the board member responsible.

Scope 1 and 2 emissions are also reported well with rates of 81% and 85% respectively, however short and long-term targets are reported by only 30% of companies. With some leading corporate disclosers committing to Science Based Targets, we expect to see these disclosures increase.

Additionally, risk management is generally well disclosed with high levels (71%) of independent verification of GHG emissions, with 61% utilising and disclosing international assurance standards. There are 60% of companies who recognise the risks and opportunities that climate change presents, however far less (only 26%) specify the time horizon in which it may impact their business.

Climate scenario analysis is an area that requires further work, however we recognise that it is a new and challenging area where only recently examples are beginning to emerge under the TCFD framework.

The state of company disclosure in Taiwan is no surprise given companies have been leading ESG performers[47] including reporting against CDP for many years. This is due to over a decade of action by local regulators including mandatory disclosure in some sectors, as well as responding to corporate and investor demands as part of the global technology supply chain. Financial institutions such as Cathay Financial Holdings and the Taiwan Bureau of Labour Funds (BLF), are helping to increase awareness of ESG and climate issues and drive demand in this market by helping to build local investor and corporate knowledge and capacity as well as increasing investment and financing of low carbon products. Investors should continue to step up their engagement with companies on governance, particularly to encourage better board level oversight and ultimately disclosure, against climate change risks and opportunities for businesses. While this is a work in progress, Taiwan has a strong reporting foundation to build on.

Thailand (38 companies)

Thai companies performed around the regional average across all four TCFD disclosure areas. They disclosed better than their peers on certain indicators within governance, 76% of companies disclosed a climate change policy and 69% of companies detailed how they incorporate climate change risks and opportunities in their strategy. Additionally, Thai companies (28%) disclosed more than any other market analysed in the region on board committee level oversight of climate change. In risk management, half of companies identify climate change as a relevant risk or opportunity to their business. While more than 55% of companies disclose their operating emissions (scope 1 and 2), more work can be done on short and longer-term targets.

In Thailand, the stock exchange promotes climate change disclosure which may explain why the TCFD disclosure in Thailand is better than in some metrics than in other Asian markets. The Securities and Exchange Commission requires sustainability reporting and the Stock Exchange of Thailand has also established a framework to encourage companies to be more involved with the environment and to promote CSR practices.[48]

Disclosure in practice

There are a number of company examples from different sectors and across markets where we found evidence of good public disclosure. These companies appear to be well positioned to report against several indicators in the TCFD framework. The aim of showcasing these examples is to assist companies in identifying types of disclosure that provide investors with material and financial climate risk information. These have been selected for different aspects of good disclosure against the TCFD indicators and are not necessarily indicative of the top disclosers in each sector or market.

Examples of Corporate Climate disclosure in Asia		
China	China Mobile (Telecoms)	China Mobile has received an A rating for their CDP climate disclosure. [49] To manage challenges of growing users and network, China Mobile set 2020 targets: 45% reduction of total energy consumption per unit of data traffic from 2015 levels.
	ICBC (Financials)	ICBC is participating in the UK-China TCFD Pilot project. As one of the best governed banks in China according to a recent report by ACGA, they have also taken a leading role in the development of international standards of green finance.[50] See more in ICBC CSR Report.[51]
Hong Kong	The Hong Kong and China Gas Company (Energy)	'Towngas' as they are otherwise known, has carbon inventory accounting procedures and adopt regular carbon auditing practices that are independently verified for their Hong Kong operations.[52]
	MTR Corporation (Transport)	MTR has comprehensive metrics and targets disclosures included in their 2017 Sustainability Report which also references a specific climate change statement.[53]
India	Mahindra Group (Cross-sectoral)	The group has committed to setting Science Based Target commitment across the group of companies [54] and uses an internal carbon price as part of efforts to reduce GHG emissions by 25% in three years.
Japan	MS&Ad Insurance (Insurance)	The Group signed on to the Paris Pledge for Action dealing with climate change and global warming. Following this they have established the CO2 reduction goal for 2050 across the whole group in addition to the existing goal for fiscal 2020.[55]
	Nissan (Transport)	The company has aligned business and strategy with significant emissions reduction through the introduction of electric vehicles and an ultimate goal of zero emissions. Long term (2050) targets have been set[56] under the third generation of the Nissan Green Program.
	Hitachi (Cross-sectoral)	Hitachi discloses its board level oversight by clearly identifying the President as the Chair of the Executive Sustainability Committee, with members including top Hitachi executives. To ensure group-wide measures on climate change are advanced, KPIs have been established in their Environmental Action Plan. Long term 2050 targets as part of The Hitachi Environmental Innovation 2050 strategy[57] have also been identified and will go towards their Science Based Target commitment.

Singapore	City Developments Limited (CDL) - Property	CDL is already reporting against the TCFD and have had their Science Based Target approved in July 2018 for their main operations (and are also looking to set an SBT in their key subsidiary by 2025). As part of that commitment, they are undertaking scenario analysis which will help build corporate confidence in the region to undertake this work. CDL also received an A- in the CDP 2017 global and climate scores - the highest scoring for a Singaporean company. CDL integrates climate change as part of their ongoing implementation of their Sustainable Development Goals.
South Korea	Samsung Fire &Marine (Insurance) KEPCO (Utility)	The company incorporates climate change into its risk management processes as part of its research and development and into insurance products.[58] KEPCO launched the COK11 (Conference Of KEPCO Group Companies to cope with climate change) climate change response council in order to actively meet the government's policy on reducing national greenhouse gas emissions and to take groupwide measures on current issues, such as the need to respond to climate change and reduce greenhouse gas emissions. KEPCO also discloses the financial benefits of transitioning to lower carbon energy sources. [59]
Taiwan	Delta Electronics China Steel (Minerals/mining)	Delta Electronics is already reporting against the four indicators of the TCFD in their 2017 Annual Report and have an approved Science Based Target. [60] China Steel is one of Taiwan's leading reporters against the CDP, scoring an A- ranking for climate and water in 2017. They have committed to setting a Science Based Target and were awarded the 2018 RobecoSAM Gold Class Sustainability Award.[61]
Thailand	PTT Thailand (Oil&Gas)	PTT has committed to a Science Based Target and has a good base for reporting against the TCFD in the future, including working with an internal carbon price of 200 bht/tonne.[62]

(Source: AIGCC)

Table 4

CHAPTER 5

Conclusion

While reporting against the TCFD is in the early stages of adoption globally, encouragingly a rapidly growing number of investors and corporates have shown their intention to report against the framework in coming years. With early TCFD-aligned reports beginning to emerge, there has never been a better time to make a start and begin the process of disclosing against the framework while learning with peers as technical knowledge and skills develop.

Overall, there is a solid base of reporting in the Asia region with some good levels of knowledge to build on. There are pockets of strength across different sectors and markets in rates of disclosure and the current reporting levels provide a useful direction for future investor engagement.

The strengths in reporting can be seen in the climate change policy statements that fall within the governance pillar of the TCFD and disclosure of greenhouse gas emissions disclosure across the region is encouraging but there are still many companies that should start reporting their emissions.

The drivers for increased disclosure are becoming more apparent in each market with regulators beginning to refer to TCFD alignment as something they will be looking for in future. This, coupled with increasing investor engagement on the TCFD including via initiatives such as the Climate Action 100+, will significantly increase the call for greater disclosure and transparency on the major climate risks and opportunities companies in the region face.

This report highlights areas for further work in collaboration with companies, investors and policy makers. There is clear momentum and a strong base or reporting to in the region to build on for the future.

APPENDIX

FTSE Russell Methodology

FTSE Russell's ESG data model allows investors to understand a company's exposure to, and management of, ESG issues in multiple dimensions. This data model is based on three pillars (E, S and G) and 14 themes (climate change, labour standards, corporate governance, etc.).

To assess TCFD-related disclosures, FTSE Russell focus on 14 climate change indicators which reflect with TCFD disclosure recommendations and fit into the four categories: governance, strategy, risk management and metrics & targets. With the exception of the two quantitative emissions indicators (ECC14 & ECC49), each of these indicators consists of two parts a) and b). Ten of these indicators apply to all companies, four indicators are only applicable to companies in sub-sectors with high or medium exposure to climate change (this is on ICB level 4 – sub sectors including automobiles, airlines, exploration & production, etc.).

FTSE Russell captured data for all 14 indicators for FY2017. For each indicator they calculated the rate of disclosure of each option (a and b). They then aggregated the results at the sector, country and region levels - Automobile sector and Malaysia, Indonesia, India, Taiwan, China, Hong Kong, Singapore, South Korea and Japan.

Indicators

ECC01

Climate Change impact including CO2 /GHG emissions – Policy or commitment statement to:

a. Address the issue

b. Reduce or avoid the impact or improve efficiency

ECC03 – Only applies to companies in high and medium impact industries

Demonstrating support for mitigating climate change through:

a. Membership of business associations

b. Company position on public policy and regulation

ECC08

Board oversight of climate change:

a. Evidence of board or board committee oversight of the management of climate change risks

b. Named position responsible at Board Level

GCG27

Remuneration for senior executives:

a. Includes long-term incentives or mechanisms

b. Incorporates ESG performance

ECC44 – Only applies to companies in high and medium impact industries

Impact of climate-related risks and opportunities. The company:

a. Details how they incorporate climate change risks and opportunities in their strategy (mitigation, new products, R&D, etc.)

b. Discloses the impact of climate change risks and opportunities on financial planning (OPEX, CAPEX, M&A, debt)

ECC45 – Only applies to companies in high and medium impact industries

Climate scenario planning:

a. The company mentions the 2 degree scenario in relation to business planning, or confirms it has conducted climate related scenario analysis

b. The company describes the business impact of one or more climate scenario analysis

ECC43

Recognition of climate change:

a. As a relevant risk and/or opportunity to the business

b. Discloses time horizon (short/medium/long term) of risk/opportunity

ECC50 – Only applies to companies in high and medium impact industries

Climate-related risk management procedures:

a. Integrated into multi-disciplinary company-wide risk management

b. Specific climate-related risk management process

ECC41

Independent verification of operational GHG emissions data:

a. Independent verification by third party

b. International assurance standard used and level of assurance declared

ECC51

Internal carbon price:

a. Company has an internal price of carbon

b. Company discloses the price of carbon

ECC14

Three years of total GHG emissions (scope 1&2)

ECC49

Three years of scope 3 emissions split by category

ECC38

Short term (up to 5 years) quantitative targets to reduce GHG emissions (which could include scope 1 and/or scope 2 and/or scope 3):

a. Unquantified, process targets

b. Quantified targets

ECC39

Long term (more than 5 years) quantitative targets to reduce GHG emissions (which could include scope 1 and/or scope 2 and/or scope 3):

a. Unquantified, process targets

b. Quantified targets

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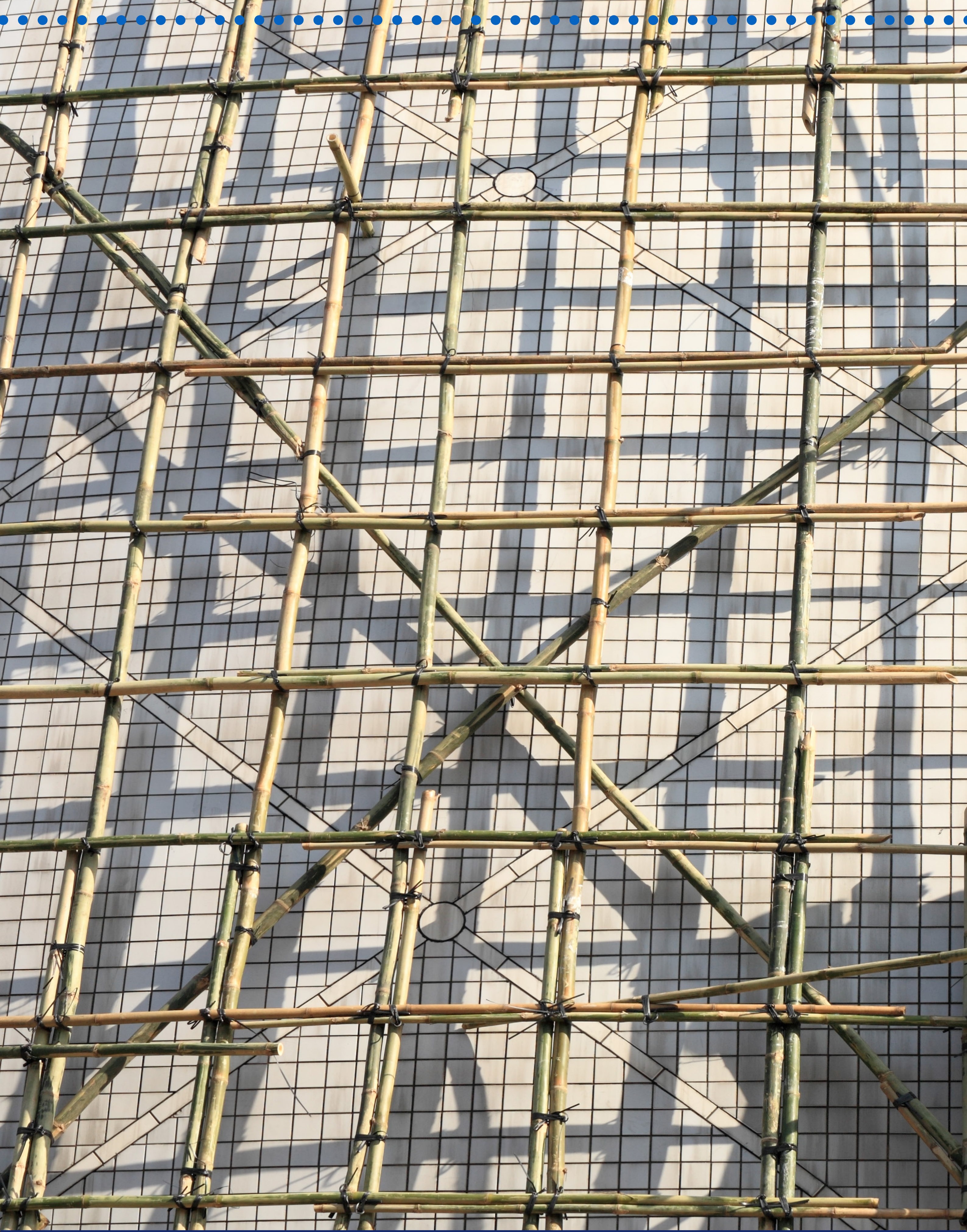

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