Investing for the climate in Asia

ASIA INVESTOR GROUP ON CLIMATE CHANGE

ANZ

September 2016

AIGCC

ASIA INVESTOR GROUP ON CLIMATE CHANGE

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.

www.aigcc.net

Report author

Asia Research and Engagement (ARE) helps financial institutions, companies, and civil society organisations understand and communicate the financial relevance of sustainability and governance issues that matter to them. ARE provides specialist research, consultancy and engagement services to help these organisations reach their goals.

Author: Benjamin McCarron, Managing Director, ARE

Research: Shibao Pek, Andrea Giunti, Theresa Wong, Fawn Soon

Acknowledgments: We are grateful to a number of individuals and organisations for their support with information gathering including ANZ, the Asian Corporate Governance Association (ACGA), the Climate Bonds Initiative, CDP, and Bloomberg ESG Data and to Mike Tyrrell of SRI-Connect for comments on the draft.

ARE ASIA RESEARCH & ENGAGEMENT

www.asiareengage.com

About the Global Investor Coalition on Climate Change (GIC)

In December 2012, the four regional climate change investor groups, IIGCC (Europe), CERES INCR (North America), IGCC (Australia & New Zealand) and AIGCC (Asia) formed the Global Investor Coalition on Climate Change (GIC). The coalition provides a global platform for dialogue between investors and governments on policy and investment practice related to climate change and a focal point for international fora.

IIGCC Institutional Investors Group on Climate Change | Investor Network on CLIMATE RISK | Investor Group on Climate Change | ASIA INVESTOR GROUP ON CLIMATE CHANGE

GLOBAL INVESTOR COALITION ON CLIMATE CHANGE

www.globalinvestorcoalition.org

Foreword from ANZ

ANZ supports the goal of governments around the world seeking to limit the average global temperature rise to no more than 2°C above pre-industrial levels. We know that achieving this is a shared challenge across business, community and government.

Having been active in the Asia Pacific region for more than 40 years, we understand the risks and opportunities that climate change in this region present for our business and our customers, particularly with regard to resource scarcity and access to clean water, energy and food.

ANZ is committed to sustainable growth and we have a target to facilitate at least $10b in investment by 2020 in low carbon and sustainable solutions to assist our customers to transition toward a low carbon economy.

For these reasons, we gave our full support to the Asian Investor Group on Climate Change to write this report. Research such as this helps identify the low carbon investment opportunities across the Asia region, what steps the investment and financial services community are already taking to tackle climate change across key markets, and what further efforts are required.

We are proud to work with the AIGCC in commissioning and undertaking this important research on the state of climate finance in Asia. We look forward to leveraging the insights from this report and, through our on-going relationship with the AIGCC, continuing to work with our customers in the region to deliver strong, sustainable economic growth.

Katharine Tapley
Head of Sustainable Finance Solutions (Acting)

Foreword from AIGCC

Investors have a vital role to play in tackling climate change and supporting the transition to a net zero emissions economy.

The Asia Investor Group on Climate Change (AIGCC) commissioned this report to better understand what activity is currently taking place across the Asia Pacific region. Our goal is to work with our members and across the finance community to help manage the investment implications of climate change and to capitalise on emerging opportunities while supporting sustainable growth in the region.

Aligning the policy frameworks, the market signals and the investment opportunities are all critical to driving the trillions in dollars of capital required to successfully deploy new technologies and increase resilience to the effects of climate change. While there is still much work to do, it is increasingly clear that a great transition is underway across the nations of the Asia Pacific region in promoting low carbon investment.

We hope this research provides a useful snapshot of the current state of play across the sector and helps to facilitate further dialogue on what steps investors can take to deliver sustainable, low carbon growth to the region.

We thank ANZ for their support. We look forward to working with our members and investors across the region to grow low carbon finance in the Asia Pacific.

Emma Herd
Chief Executive Officer, IGCC

About ANZ

Building on a proud 180-year banking heritage, ANZ is an international bank with a unique footprint. With headquarters located in Melbourne, ANZ is a top 4 bank in Australia, the largest banking group in New Zealand and the Pacific, a leading bank globally on the Dow Jones Sustainability Index (DJSI), and among the top 25 banks in the world. We provide a range of banking and financial products and services to over 9 million institutional clients and retail customers.

We are committed to building lasting partnerships with our customers, shareholders and communities in 34 markets worldwide, with offices in Australia, New Zealand, throughout Asia and the Pacific, and in the Middle East, Europe and America. ANZ aims to be the best bank in the world for clients driven by regional trade and capital flows. We provide unique access and insights through on-the-ground presence in 15 Asian markets and 12 Pacific countries.

Contents

EXECUTIVE SUMMARY

Against the backdrop of extreme weather events disrupting economic activity and causing hazards across the Asia Pacific, the Paris Climate Agreement was a landmark deal in the fight against climate change. The nations of the world came together to state their commitments to reducing greenhouse gas emissions.

These two forces (the physical effects of climate change and the policy measures taken to mitigate it) are changing the shape of many industries. As this occurs, they also change the risk and opportunity landscape for the financial institutions that lend to or invest in these industries.

This research was commissioned by the Asia Investor Group on Climate Change (AIGCC) to better understand the current state of play for climate finance across the Asia Pacific region, and to gain insight into emerging and future trends for investment and lending activity. The key findings and insights on sector activity revealed by this research will help determine priorities for the AIGCC over the coming years.

The Great Transition

Nations across the Asia Pacific are critical in the global effort to tackle climate change. There are also significant regional risks and opportunities in climate finance. Many nations across the region are investing in the policy frameworks and commitments necessary to drive investment into climate solutions. There is substantive momentum in key areas of investment, but significant opportunities remain untapped.

Overall we find that the Asia Pacific markets have now started the journey to a sustainable financial system. However, there remains a long way to go.

Sizing the opportunity

The investment needed to address climate change is significant. Considering renewable energy and energy efficiency alone, the International Energy Agency (IEA) projects that between 2014 and 2035 cumulative investment of USD 4.6 trillion will be needed to meet the energy demand of China, India, Japan, and South-East Asia. This figure needs to rise to USD 7.7 trillion if the world is to meet the 2° warming target.

The market is already moving. The Climate Bonds Initiative tracks new bond issuance and records whether each bond is aligned with climate goals or specifically labelled as green. Their State of the Market 2016 review found total climate aligned bond issuance of USD 694 billion. Total issuance across the Asia Pacific markets we covered was USD 293.4 billion, of which green-labelled bonds accounted for USD 14.3 billion. China was the leader in climate aligned bonds and its green labelled bond issuance is growing fast.

Broad research base

We reviewed the disclosure of leading domestic financial institutions across the Asia Pacific region to understand the state of the finance industry's response to climate change. We reviewed 36 banks, 30 investors, and 24 insurers for a total of 88 financial institutions after adjusting for double counting. The banks and insurers were all publicly listed. Most of the investors were institutional 'asset owners' with a mandate to manage assets to generate returns or meet a liability rather than to grow their client base.

We asked: "Are the key players proactive or reactive in their approach to the emerging risks and opportunities presented by climate change?"

Specifically, we focused on the core business activities of these institutions:

- Lending activities at banks
- Ownership policies at investors
- Risk mitigation at insurers.

In all Asia Pacific markets, steps are being taken to address climate change. However, there are a diversity of responses across markets, considerable variation in the drivers of those responses and numerous gaps.

Sector activity

We found 31% of the institutions stated that they factored climate change risks into their financing operations.

The banks, in particular, were more comfortable discussing climate change opportunity than risk: 61% referred to green products and 56% provided some quantification of their exposure. By contrast, only 28% referred to climate change factors as a reason to limit financing, even though 81% disclosed their policy on responsible lending.

Market variation

In general, the markets of Australia, Japan, South Korea, and Taiwan had stronger patterns of disclosure on sustainable finance. However, Chinese banks had strong disclosure on green finance.

Progress is being driven by different factors in each market. For example:

- In China, the banks have moved in response to green credit guidelines from the China Banking Regulatory Commission (CBRC)
- By contrast, Australian banks have adopted voluntary policies and standards on an individual basis – sometimes in response to reputational pressure from civil society organisations.

Regulatory support

We also reviewed regulatory approaches. We found that:

- Five of the twelve markets have banking initiatives
- Four have stewardship codes (and a further three have draft codes to promote active ownership at investors); and
- Five markets include sustainability disclosure within the listing rules of their stock exchanges.

The domestic support is particularly important as Asian financial institutions have a relatively low representation in international initiatives to support sustainable finance.

Figure 1: Financial institution review summary results

Banks	Number	Proportion %
TOTAL	36	100
Responsible lending policy	29	81
Policy includes climate change	10	28
Sector level policy	10	28
Green finance solutions	22	61
Quantifies green product	20	56%
Investors	**Number**	**Proportion %**
TOTAL	30	100
Corporate governance policy	16	53
Policy includes ESG	15	50
Policy on climate change risk	9	30
Climate change risk mitigation	8	27
Insurers	**Number**	**Proportion %**
TOTAL	24	100
Identifies climate change risk	9	38
Provides green products	9	38

Source: ARE/ AIGCC (see appendices for further details)

Recommendations

Financial institutions should:

- Seek to understand the impact of climate change risks and opportunities across all of their lending and investment portfolios
- Consider climate change risks and opportunities at the individual asset level
- Discuss climate change related risks and opportunities with clients or investee companies
- For banks and insurers, consider climate change related risks and opportunities in business development strategy
- Develop responsible finance policy to determine what activities the institution will not fund and embed climate change related factors in these policies
- Increase allocation of capital towards green activities, including through product innovation
- Consider supporting shareholder resolution encouraging carbon disclosure of international companies
- Join international initiatives (such as AIGCC) to share and learn from best practice regionally.

Regulators can support financial institutions in adopting sustainable finance practices by:

- Introducing guidelines on responsible finance for banks
- Promoting stewardship codes for investors that include reference to sustainability
- Encouraging corporate sustainability disclosure through the listing rules of stock exchanges.

INTRODUCTION

The Asia Pacific is home to a number of leading and emerging economies and will be critical in the global effort to tackle climate change. Many nations have already begun investing in leading and innovative solutions aimed at reducing emissions and reducing the carbon intensity of economic development.

The physical impacts of climate change are increasing and require adaptation. Higher global average temperatures have already exacerbated natural weather phenomena and increased the variability of weather patterns. Heatwaves have affected Thailand and India in 2016 and drought contributed to Indonesia's costly fires and haze of 2015. Extreme rainfall has caused damaging floods in China in 2016 and increased the frequency and losses from tropical cyclones in the Philippines. Adapting sooner to these impacts will assist in reducing future economic losses in the region, while actions to reduce emissions will help mitigate future increases in extreme weather events.

Counting down carbon

The Paris Climate Agreement was a landmark in the fight against climate change. Ahead of the December 2015 conference, countries submitted Intended Nationally Determined Contributions (INDC) that set out the efforts they intended to take to address climate change. The steps to mitigate climate change outlined in the INDCs have already changed public policy across a range of industries in the markets we covered and will continue to do so.

Figure 2 lists the 'intended contributions' for the Asia Pacific markets in this study. The commitments shown are 'unconditional'. For some markets the commitments will become stronger once the Paris Agreement is ratified. Perhaps the most significant commitment is China's target to peak its emissions by 2030 and make best efforts to peak early.

Figure 2: Climate change 2030 targets

Country	Reduction	Type	Baseline
Australia	26-28%	Emissions	2005
China	60-65% Peak	Intensity Emissions	2005
Hong Kong	n/a	n/a	n/a
India	33-35%	Intensity	2005
Indonesia	29%	Emissions	Business as usual
Japan	26%	Emissions	2013
Malaysia	35%	Intensity	2005
Philippines	70%	Emissions	Business as usual
Singapore	36%	Intensity	2005
South Korea	37%	Emissions	Business as usual
Taiwan	50%	Emissions	Business as usual
Thailand	20%	Emissions	Business as usual

Source: Intended Nationally Determined Contributions, UNFCCC website

The statements all aim for a target year of 2030. There are three types of reduction target:

- Absolute emissions decline
- Reduction in emissions intensity of GDP; and
- Reductions from a business as usual scenario.

Implementation of the policies required to fulfil these commitments and effect a transition towards a low-carbon economy will change the trajectory of many industries – which, in turn, will affect financial services.

Some changes will give rise to opportunity. Markets that transition to a low-carbon economy (and build or adapt infrastructure to tackle and increase resilience to the changing climate) will have a significant demand for finance to fund these new assets. At the same time tighter regulation and adverse physical conditions present risks to lending, investment and underwriting portfolios.

Energy holds the key ...

The primary challenge is to transform the way in which we produce, generate and use energy. China provides one specific target around this of increasing non-fossil fuels to 20% of primary energy. Electric power supply is the crucial factor within primary energy. India has a 2030 target of 40% of power from non-fossil fuel sources.

... but other factors also matter

Agriculture, forestry and land use change also represent a significant source of emissions. Indonesia states that 63% of its emissions in 2005 were due to land use change and peat and forest fires, while fossil fuel combustion accounted for around 19% of total emissions. On the other hand, China sees potential in these sectors to reduce its overall emissions with a target to increase forest stocks by 4.5 billion cubic meters.

Transforming energy usage

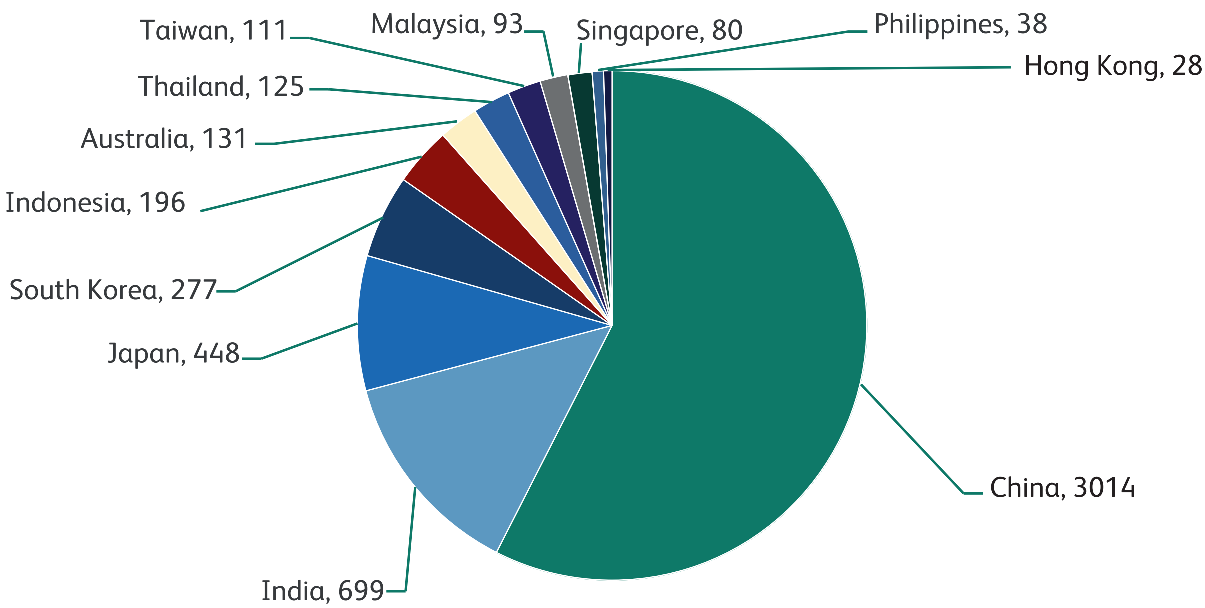
As noted above, one of the key challenges in climate change mitigation lies in changes we make to the way that we use energy.

Current energy consumption

The total primary energy these markets consumed in 2015 was 5,241 million tonnes of oil equivalent (mtoe).

The pie chart below shows the proportions for each market. It highlights how China dominates energy consumption in the region.

Figure 4: Primary energy consumption by country in 2015 (mtoe)



Source: BP Statistical Review of World Energy 2016

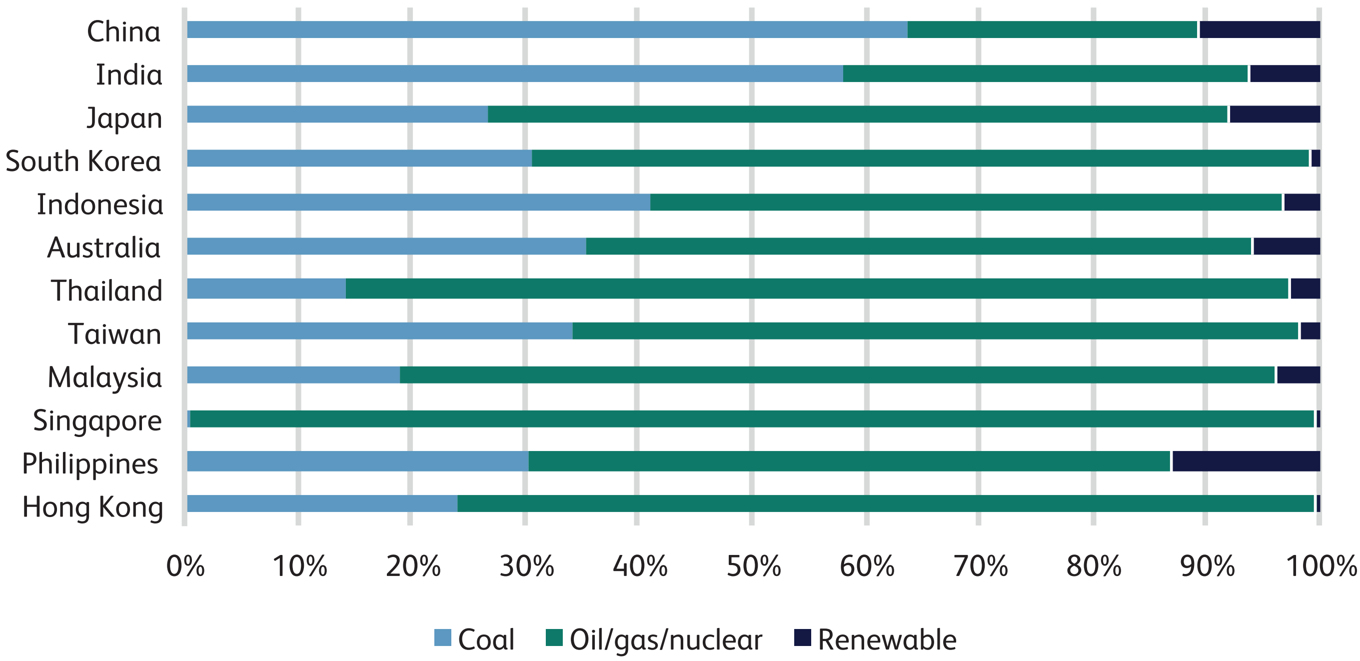
Energy mix

The energy landscape is quite different for the various countries in the region. Figure 3 provides an overview of the sources of primary energy for the major Asia Pacific markets for 2015. The markets are ranked from highest to lowest use of energy. Each bar shows the proportion of energy from three buckets: coal; oil, gas, and nuclear; and renewables.

To meet emission reduction goals, across all markets carbon-intensive sources of energy must decrease and renewables must grow.

- China and India are in the spotlight as both obtain more than half of their primary energy from coal
- By contrast Singapore already has an energy mix with almost no coal. However, it also has a much lower proportion of renewables, which poses a challenge for the city-state.

Figure 3: Primary energy by source in 2015 (mtoe)



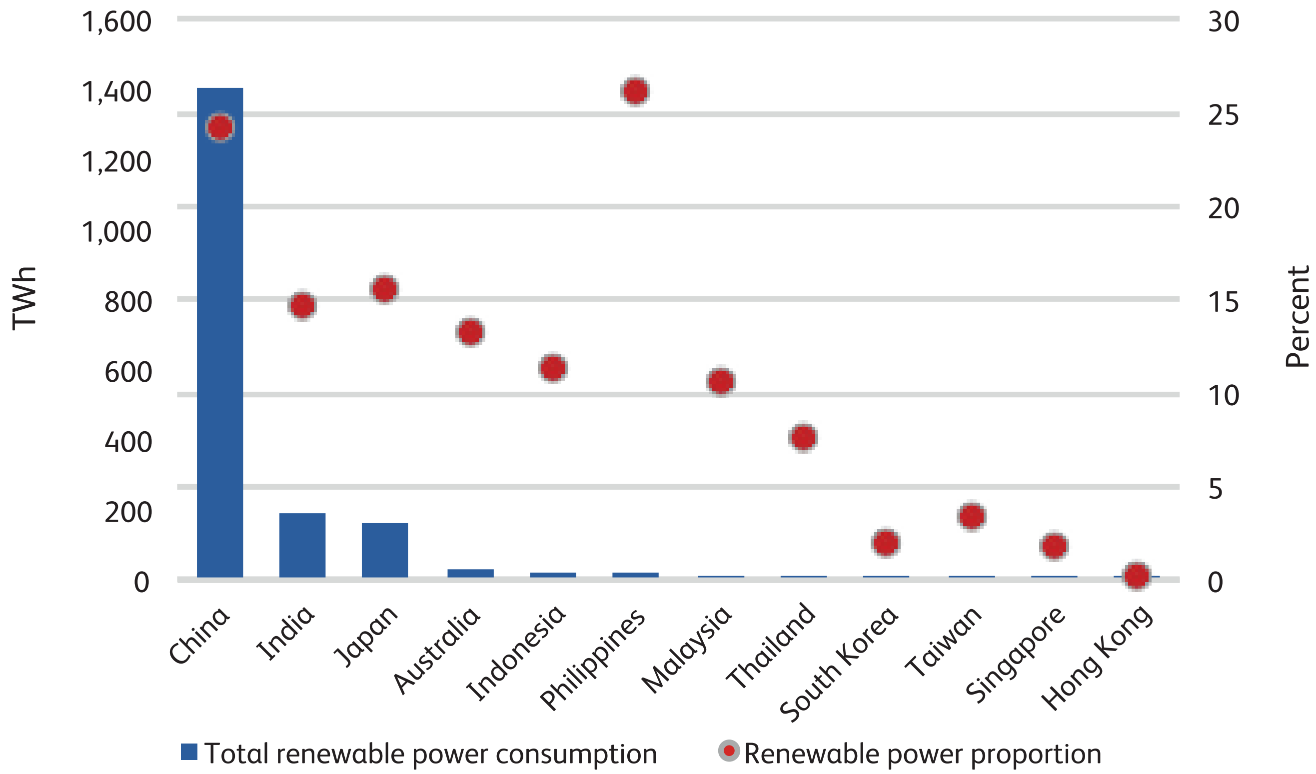
Source: BP Statistical Review of World Energy 2016

Focus on renewables

Electricity is a major component of energy use. It is also an area where there is significant potential for substitution from high to low carbon fuels.

The following chart shows total renewable power production and the proportion of renewables as a percentage of total electricity generation. Philippines leads the way, partly due to its attractive tariff structure. China has seen significant gains in recent years.

Figure 5: Renewable power consumption and share of total electricity in 2015



Source: BP Statistical Review of World Energy 2016 (consumption and production figures are treated as equivalent for this chart)

The major Asian markets have seen significant growth in renewables over the last few years. Solar stood out with its strong percentage growth in recent years, particularly in the major markets. This was highest in China, which saw a 70% increase in solar production in 2015 over 2014 to 39 terawatt hours (TWh). Similarly, Japan's figure grew 59% to 31 TWh and India's 51% to 6.6 TWh.

Renewables mix

Hydro power dominates the renewable energy mix with a 75% share of electricity consumption across the markets compared to 13% for wind, 5% for solar and 7% for geothermal, biomass and other.

There are significant differences in the mix of renewable power across markets:

- Australia and India have the highest proportions of wind
- South Korea, Japan and Thailand have the highest proportions of solar
- The Philippines has a high component of geothermal
- The majority of Singapore's renewables are from its waste to energy plants
- China has predominantly hydro and then wind.

Investment needs

The IEA's World Energy Investment Outlook (WEIO) projects the scale of required spend in renewables and energy efficiency investment. Between 2014 and 2035 cumulative investment of USD 4.6 trillion will be required into renewable energy and energy efficiency to meet the energy demand of China, India, Japan, and South-East Asia. This figure needs to rise to USD 7.7 trillion if the world is to meet the 2°C warming target.

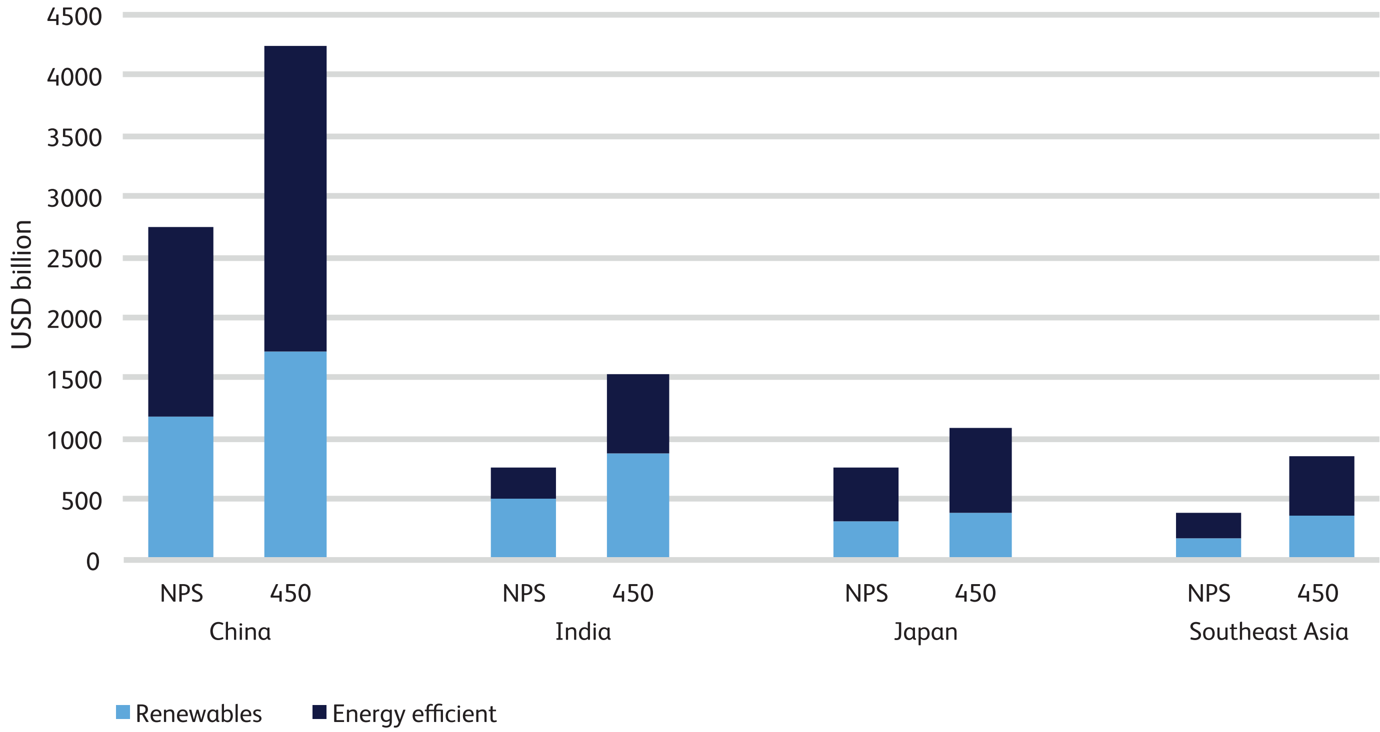
We could not find comprehensive projections for financing and investment needs for other mitigation and adaptation steps across the different markets – although these are also likely to be substantial.

The IEA based its assessment on two scenarios for overall energy investment needs as follows:

- The main New Policies Scenario (NPS) factored in the energy policies and measures adopted as of 2014, with commitments and policies that had been announced, but in many cases not yet implemented
- The 450 scenario (450) used an emissions reduction path consistent with the international goal of limiting temperature rise to 2°C. WEIO notes that much of the required spend is to maintain existing energy output, rather than meet growth in demand.

Figure 6 shows WEIO extracts related to the major Asian markets for the spend required for renewable power and energy efficiency, representing efforts to transform supply and reduce demand respectively.

Figure 6: Projected renewables and efficiency spend from 2014 to 2035 (USD billion)



Source: IEA World Energy Investment Outlook

Climate bonds

One area in which data is starting to emerge about the finance sector's response to climate change is that of climate bonds. The Climate Bonds Initiative (CBI) tracks all new bond issuance and assesses each relevant bond to determine whether it should be classified as 'climate aligned' or 'green labelled':

- Issuance from companies with over 95% of revenues from climate aligned assets, which are specified in a list, counts towards the overall number. The majority of bonds so far have been in mass transport as well as low carbon energy, water, green buildings, agriculture and waste.
- The green labelled bonds are often issued by companies that are not in climate aligned sectors, but the bond is specifically financing green assets such as energy efficiency, pollution control, etc.

The CBI State of the Market 2016 review found total issuance of climate aligned bonds across the Asia Pacific markets we covered of USD 293 billion and issuance of green labelled bonds of USD 14 billion. This was heavily concentrated in China with USD 246 billion and USD 9.2 billion respectively.

Global figures were USD 694 billion and USD 118 billion respectively, with Asia Pacific shares of 42% and 12% respectively. The lower share of green labelled bond issuance in Asia may be due to both a lower level of awareness on behalf of issuers and a lower level of demand from Asia Pacific financial institutions. It represents a significant opportunity.

Figure 7: Climate-aligned bonds

Source: Climate Bonds Initiative

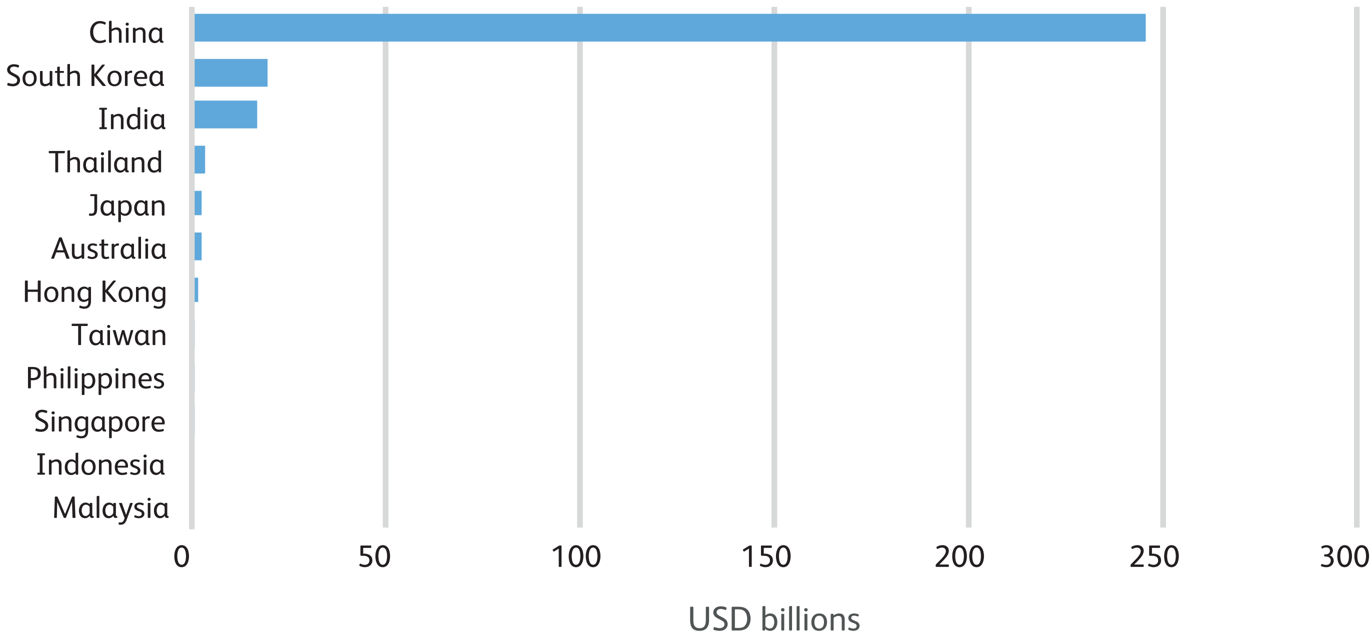
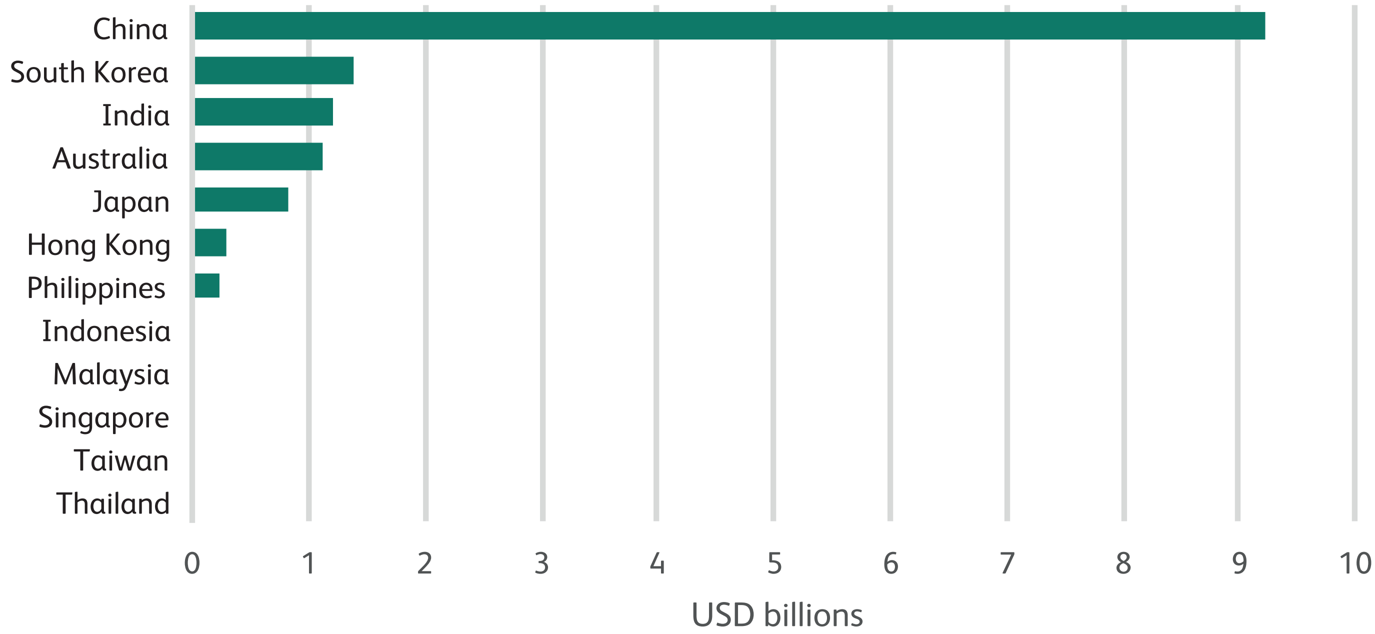


Figure 8: Green labelled bonds



Source: Climate Bonds Initiative

Harmonisation of standards will be important to support the development of green bond markets. One emerging issue is that guidelines for green bonds in China differ in some areas from international expectations of what is considered 'green'. For example, the Green Bond Endorsed Project Catalogue released by the People's Bank of China at the end of 2015 includes 'clean coal' projects in its green definitions. Indeed, cleaner coal can help to address China's significant air pollution issues. However, in the absence of carbon capture and storage technologies, coal in any form is excluded from international green bond definitions. This is because improvements in the emissions efficiency of coal fired power plants have the perverse effect of extending the life of these assets, beyond the point that they will need to be closed down to meet global carbon budgets.

THE ASIAN FINANCE SECTOR RESPONDS

This research set out to understand the state of play of the finance industry in the Asia Pacific region in relation to climate change.

We assessed the regulatory drivers and industry initiatives across the major Asia Pacific markets looking at the major domestic and international initiatives. We reviewed the disclosure of leading domestic financial institutions across the Asia Pacific region to understand the state of the finance industry's response to climate change. We reviewed 36 banks, 30 investors, and 24 insurers for a total of 88 financial institutions after adjusting for double counting.

Domestic regulatory and industry initiatives

The past few years have seen a number of major domestic initiatives to encourage more sustainable approaches to finance across the Asian markets we reviewed and the different industry segments. These are shown in Figure 9.

Beyond regulatory approaches, Australia, Japan, and South Korea all have domestic Sustainable Investment Forums. These act as a hub promoting sustainable and responsible investment in their respective markets.

Figure 9: Regulations and initiatives supporting responsible finance and investment

Country	Banking initiative	Stewardship code	ESG disclosure requirement
Australia	-	-	Company law requires material ESG risk reporting
China	Green Credit Guidelines	-	CSR report requirement for central government owned companies
Hong Kong	-	Principles for Responsible Ownership	Listing rules require ESG report
India	National Voluntary Guidelines on Responsible Finance	SEBI voting guidelines	Requirement for business responsibility report
Indonesia	Sustainable Finance Roadmap/ eight banks commitment	-	Company law requires report on CSR practices
Japan	Principles for Financial Action towards a Sustainable Society	Principles for Responsible Institutional Investors	-
Malaysia	-	Malaysian Code for Institutional Investors	Listing rules require sustainability statement
Philippines	-	-	-
Singapore	ABS Guidelines on Responsible Financing	Draft	Listing rules require sustainability report
South Korea	-	Draft	National regulation on environmental disclosure for large companies
Taiwan	-	Stewardship Principles for Institutional Investors	CSR reporting rule for selected and large capital listed companies
Thailand	-	Draft	CSR reporting required for all companies

Source: Banking/ capital market regulator websites, associations, ACGA, UNEP FI studies

The banking initiatives have taken different forms in different markets. The China Banking Regulatory Commission Green Credit Guidelines was one of the first. More recently eight leading banks in Indonesia signed a commitment to implement sustainable finance.

Investors across the region have seen the introduction of stewardship codes providing guidance on ownership responsibilities. Japan was first, with Malaysia, Hong Kong and Taiwan also acting. Hong Kong provides a statement of principles, while the other three are codes to which investors can become signatories. Thailand, Singapore and South Korea have draft codes under discussion. India has taken a different approach with a requirement for mutual funds to provide their voting records. The Hong Kong, Malaysia, and Taiwan codes refer to ESG or sustainability.

We also reviewed the ESG disclosure guidelines for each market. The past few years have seen an increase in reporting requirements, with ESG reporting rules for listed companies in Hong Kong, India, Malaysia, Singapore, and Taiwan. In Hong Kong the rules specify that listed companies disclose carbon emissions. National regulations in South Korea require the largest companies to disclose carbon emissions. In China, central government owned companies have had to produce a CSR report since 2012.

International networks

While there is growing domestic support for sustainable finance across Asia, a knowledge gap remains for institutions that want to take advantage of opportunities in sustainable or green finance. There are a number of international organisations that address the knowledge gaps and facilitate collective action.

Each organisation fulfils a different function:

- The **Principles for Responsible Investment (PRI)** helps investors integrate sustainability and corporate governance factors into their investment and ownership decisions
- **United Nations Environment Programme Finance Initiative (UNEP FI)** works with banks, investors and insurers to address systemic sustainability issues
- The **Equator Principles** is a risk management framework for banks to address environmental and social risks in projects
- The **Sustainable Stock Exchanges Initiative (SSE)** is a platform for stock exchanges to enhance corporate transparency on ESG
- The **Asian Corporate Governance Association (ACGA)** works with investors, companies, regulators, and professional firms to implement effective corporate governance practices throughout Asia
- The **Asia Investor Group on Climate Change (AIGCC)** aims to create awareness among Asia's asset owners and financial institutions about the risks and opportunities associated with climate change and low carbon investing.

The table shows Asian participation in leading finance industry initiatives addressing governance and sustainability. For the PRI, UNEP FI, the Equator Principles and SSE, we have shown the number of organisations headquartered in each Asia Pacific market. ACGA is a regional initiative, so to provide a basis for comparison, we have shown statistics they provided based on members headquartered in Asia or with a major presence in the region (these were assigned to a market where the member had a regional headquarters or significant operations). Australia is also shown separately to avoid distorting total figures.

Figure 10: Membership by country for international initiatives

	UNEP FI	Equator Principles	PRI	SSE	ACGA
Global TOTAL	**214**	**84**	**1554**	**57**	**112**
China	6	1	5	-	1
Hong Kong	2	0	11	-	43
India	2	1	3	2	0
Indonesia	2	0	4	-	0
Japan	10	4	48	-	5
Malaysia	1	0	1	1	3
Philippines	3	0	0	-	1
Singapore	0	0	6	-	10
South Korea	6	0	4	1	0
Thailand	2	0	0	1	0
Taiwan	0	2	0	-	1
Other Asia	2	0	1	3	2
TOTAL	**36**	**8**	**83**	**8**	**66**
Percent of global	**17**	**10**	**5**	**14**	**59**
Australia	10	5	116	-	7
TOTAL inc-Australia	**46**	**13**	**199**	**8**	**73**
Percent inc-Australia	**21**	**15**	**13**	**14**	**65**

Source: Initiative websites, ACGA

Banks review – upside over downside

The low carbon economy presents a multi trillion dollar financing opportunity for the banks that choose to address it – and more than half of the banks we reviewed are doing so. This is a strong positive. Yet the transition to low carbon activities also requires banks to progressively reallocate capital away from the carbon intensive industries, particularly coal.

It is natural that banks seek new markets before reducing exposure to the old ones. However, without taking steps to limit exposure to carbon-intensive assets, banks may fail to address related risks and fail to decarbonize their overall growth.

Banks that do not specifically assess high carbon and the physical impacts of climate change as forward looking risk factors in client acquisition and credit pricing will face higher risks as their clients adjust to more regulation and more volatile weather patterns.

From our review, 22 out of 36 (61%) of the banks provided details of their green finance solutions and 20 (56%) of the banks provided some quantification of their exposure – in some cases this was not material in the context of the bank's financing activities.

The figures for a broad ESG policy were even higher - 29 out of 36 (81%) of the banks had some policy on responsible lending. Further, all countries had at least one major bank with relevant policy. Generally, these policies did not specifically mention climate change, referring instead to environmental track record such as violations and pollution incidents. Only 10 (28%) of the banks included reference to climate change as a factor that may result in limiting finance.

Figure 11: Green finance disclosure at major banks

Country	Number assessed	Responsible lending policy	Policy includes climate change	Sector level policy	Green finance solutions	Quantifies green product
Australia	3	3	3	2	3	2
China	3	3	3	2	3	3
Hong Kong	3	3	1	2	1	1
India	3	2	0	1	1	1
Indonesia	3	2	0	1	2	2
Japan	3	2	1	0	2	2
Malaysia	3	1	0	0	0	0
Philippines	3	2	0	1	2	1
Singapore	3	3	0	0	0	0
South Korea	3	2	0	1	3	3
Taiwan	3	3	2	0	3	3
Thailand	3	3	0	0	2	2
TOTAL	**36**	**29**	**10**	**10**	**22**	**20**

Source: ARE/AIGCC (see appendices for further details)

Overall the Australian and Chinese banks had very good disclosure on providing new finance and limiting exposure to high carbon industries and, in the case of Chinese banks, to industries with overcapacity.

The drivers have been very different. In China, the banks have moved in line with green credit guidelines from the China Banking Regulatory Commission (CBRC). Conversely, the Australian banks have adopted voluntary policies and standards – sometimes in response to reputational pressure from civil society organisations.

Given its emerging market status, the Indonesian banks have reasonable disclosure. The Indonesian Financial Services Authority (Otoritas Jasa Keuangan, OJK), together with WWF, have supported this, announcing in November 2015 that eight leading banks will work to address sustainable development. This has followed intense concern over development that has damaged forests and peatlands leading to significant carbon emissions.

The Singaporean banks have all made a statement on ESG, following the announcement of responsible lending guidelines by the Association of Banks in Singapore in October 2015. However, the statements are limited and none of the banks mentioned provision of green finance, which may represent a missed opportunity.

Malaysian banks had the least applicable disclosure overall. They all mentioned the Government's Green Technology Financing Scheme, but did not provide details of their own green financing.

We also reviewed banks to see where there was sector level policy. We used a very low threshold to assess this. There was a marked difference in standards, with two Australian banks disclosing detailed sector level policies, while banks in other markets only provided minor references to standards in different industries.

The Agricultural Bank of China provided an interesting example of the steps leading banks are taking. It gave information on total exposure to high impact industries in its 2014 CSR report (the 2015 version was not yet available). It stated:

"By taking credit management measures such as industry credit policy, customer list management and limits on industries, ABC has effectively controlled the increase of loans to high energy consumption, high pollution and excess capacity industries. By the end of 2014, the balance of its loans to the above mentioned industries was 521.611 billion yuan, a decrease of 10.341 billion yuan from the beginning of the year. ABC continuously pushes forward the green credit system and mechanism innovations."

The following summarises some of the steps on green finance the bank outlined in its 2015 Annual Report, covering credit, bond issuance, and establishing a fund:

Green credit

- Incorporated green credit elements into credit policy guidelines
- Established an indicator system for green credit and adjusting customer admission, credit review, approval and post-disbursement management accordingly
- Applied indicators to 16 industries including cement, iron and steel, petrochemicals, float glass, wind power and photovoltaic, which involved 4,935 customers
- Increased loans related to green credit 16% to RMB 540 billion, accounting for 10.1% of domestic corporate loans
- Assessed benefit of projects supported by the bank at savings of 23 million tons of standard coal annually and 54.2 million tons of carbon dioxide emissions
- In 2015, reduced by 0.5 percentage points the proportion of total corporate loans to industries with high energy consumption, high pollution or overcapacity

Green bond issuance

- In October 2015, issued dual currency green bonds worth USD 995 million, including through listing on the London Stock Exchange.

Green fund

- Set up a China-France fund with Amundi Asset Management to invest in energy transition
- Invested the first tranche in green energy development in China and France
- Planned to invest further tranches in other countries and in agricultural cooperation.

Investors are more active

Large funds face long-term portfolio level risks from the effects of climate change, as well as stock and sector specific risks from both physical risks and regulation to reduce carbon emissions. A critical tool that investors have to reduce long term risks from climate change is their influence as owners of companies.

Investors across Asia have taken a more active approach to ownership over the last few years. Large domestic Asian investors have started to publish corporate governance policies relating to their voting and dialogue with investee companies. Regulators have supported this trend and more than half of the markets we covered already have a stewardship code or are in consultation on one. These developments are positive. However, there is less information on specific steps relating to climate change.

We found that 16 out of 30 (53%) of the large investors had publicly available policy or details related to active ownership, voting, or stewardship. Most markets had funds that disclosed such policy.

Beyond this 15 out of 30 investors provided a statement on ESG. In many cases this was included in the corporate governance policy or statement on stewardship. In some this was separate. In the case of Thailand's Social Security Fund, we could not find a voting or stewardship policy in English (we understand there is one in Thai), but the fund noted that it avoided "investments that cause social or environmental problems".

However, when it comes to climate change there is less disclosure. Only 9 (30%) of the investors referenced climate change in some way through their policies and only 8 (27%) outlined steps that they took. Interestingly, the South Korean investors, which disclosed less on governance, had more disclosure relating to climate change risks and mitigation.

Figure 12: Responsible ownership at major funds

Country	Number assessed	Corporate governance policy	Policy includes ESG	Policy on climate change risk	Climate change risk mitigation
Australia	3	3	3	3	3
China	3	0	0	0	0
Hong Kong	2	0	0	0	0
India	3	2	1	0	0
Indonesia	2	0	0	0	0
Japan	3	3	2	0	0
Malaysia	3	2	2	1	0
Singapore	3	1	1	1	0
South Korea	3	1	1	2	3
Taiwan	3	3	3	1	1
Thailand	2	1	2	1	1
TOTAL	**30**	**16**	**15**	**9**	**8**

Source: ARE/ AIGCC (see appendices for further details)

In general, where investors disclose steps on climate change these are still vague. Malaysia's Employee Provident Fund includes climate change in the list of factors that it states are "areas of discussion in our ESG investing approach". Singapore's Temasek mentions climate change in a list of major trends and goes on to state: "We consider environmental, social and governance factors together with commercial and other critical considerations when we make decisions as an investor, shareholder and owner."

HESTA Super Fund, the Australian pension fund for health and community services, had the most detailed public policy on climate change of the investors we reviewed. This covered eleven pages and defined each relevant term. Under implementation it includes the following steps:

- Seek to understand climate change related risks and opportunities in each major asset class
- Consider climate change related risks and opportunities in the structure of the portfolio

- Consider climate change when selecting external investment managers and incorporate climate change into investment management agreements
- Engage with companies to improve their governance, management, and disclosure relating to climate change
- Engage in public policy in relation to material issues
- Collaborate with other organisations to achieve these objectives.

In relation to thermal coal, HESTA will restrict investment to companies with more than 15% revenue or net asset value in thermal coal exploration, development, or transportation.

Insurers find new risks, new products

Changing weather patterns are changing the risks of catastrophic events and flooding leading to changing payout patterns for insurance companies. We reviewed leading insurers from across the region to understand the extent to which they factored climate change into their underwriting.

Here we looked for steps on risk identification and green product provision. In each case the proportion was 38%. However, there was a slight difference in that one company identified the climate change risks without stating it provided relevant products and one provided green products without acknowledging the changing risk patterns.

Companies in Australia, Japan, and Taiwan led efforts among the insurers.

Figure 13: Climate disclosure at major insurers

Country	Number assessed	Identifies climate change risk	Provides green products
Australia	2	2	2
China	2	1	1
Hong Kong	2	0	0
India	2	0	0
Indonesia	2	0	0
Japan	2	2	2
Malaysia	2	1	0
Philippines	2	0	0
Singapore	2	0	0
South Korea	2	1	2
Taiwan	2	2	2
Thailand	2	0	0
TOTAL	**24**	**9**	**9**

Source: ARE/ AIGCC (see appendices for further details)

QBE insurance Group provided an example of risk identification disclosure: “QBE recognises the impact climate change can have in terms of potential claim activity as well as the potential for extending and adapting our product lines and services in response to the changing world.”

Many insurers discussed their efforts in risk solutions and natural disaster risk mitigation. Taiwan’s Cathay Financial Holding provided some interesting product examples in transport. It stated: “Cathay Century launched a “Green vehicle insurance” project in 2013 that gives owners of hybrid cars, electric cars and electric motorcycles a 10% discount on premiums of optional insurance coverage … by 2014, a total of 2055 vehicles were insured under this scheme.”

Further, noting Taiwan’s leading position in bicycles the company stated: “Cathay Century launched in 2014 the first tailor-made insurance package for the cycling population with the broadest and most comprehensive coverage. It remains today the only insurance package that covers rented bicycles on theft, collision and third-party liabilities, thereby keeping cyclists covered against injuries and property damages.”

Listed company disclosure

For over 20 years, investors have sought better disclosure from listed companies on how they have managed their exposures to social and environmental risks and opportunities. In recent years, the pressure for this has increased as stock exchanges (via their listing rules) have added their weight to calls for companies to disclose. More recently, investors themselves have come under increasing pressure to report on their own exposures (via 'portfolio carbon footprinting' and other reporting frameworks).

The focus on carbon emissions disclosure is set to increase. The Financial Stability Board has convened a Taskforce on Climate-Related Financial Disclosure (TCFD) to develop "voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders".

Capital market regulators have usually prompted companies to disclose sustainability information through issuing guidance and then bringing in a requirement or listing rules often under the comply or explain regime. Often there is a higher burden for larger, better resourced companies.

Investors have requested such disclosure individually or collaboratively. CDP was the most common international collaborative platform for investors to request carbon information from companies.

We found that where listing rules required disclosure of a sustainability report or statement they usually left it to the board to determine what elements to actually disclose. Hong Kong was an exception in that it specified certain KPIs, including carbon emissions.

The following table provides the number and proportion of large capitalization companies (above USD 2 billion) per market that disclosed GHG emissions as well as the number of responders to CDP.

It shows that overall there is a long way to go in terms of disclosure and likely also emissions management. Companies are likely missing out on opportunities; many that undertake carbon reporting state that they are able to make targeted investments and find cost efficiencies as a result of the process.

China had a notably lower proportion. The central government owned companies have had to provide CSR reports since 2012 under a rule dating from 2008. There are general provisions in place relating to discussion of material environmental issues and violations. These is also ESG related guidance from both stock exchanges. However, this has not driven widespread carbon disclosure.

The Hong Kong numbers should increase as regulation takes effect, while the high level in South Korea has support from a national requirement on carbon measurement and disclosure applying to large companies.

Figure 14: Greenhouse gas emission disclosure rates

	Mandatory ESG disclosure	No. companies market cap > USD 2 billion	Proportion disclosing GHG emissions %	Number of CDP responders
Australia	-	91	70	91
China*	Limited	446	4.8	45
Hong Kong	Yes	264	24	17
India	Yes	123	33	74
Indonesia	Yes	33	15	6
Japan	-	412	67	261
Malaysia	Yes	40	30	9
Philippines	-	32	22	4
Singapore	Yes	48	42	15
South Korea**	Limited	92	76	87
Taiwan	Selected & large capital	60	78	51
Thailand	-	62	42	11

*The figures from both exchanges from the Corporate Knights study have both been merged.
** Bloomberg ESG Data provided these figures to us directly as the Corporate Knights study did not include South Korea

Source: CDP, Corporate Knights 2016 Sustainable Stock Exchange Report, Bloomberg ESG data.

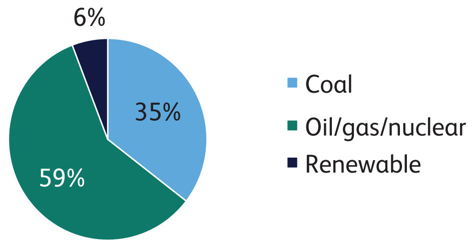
MARKET PROFILE: AUSTRALIA

Leading finance sector players have taken steps to address climate change through their policies and voluntary initiatives. There are no hard regulations or codes of behaviour. Major institutional investors have formed the Investor Group on Climate Change to assist the investment industry in understanding the relevance of climate change. The banks have all begun to dedicate funds to solutions oriented investments, but this is still at a low level of activity compared to the carbon intensive commercial loan books. Climate bond issuance is low for a developed economy.

Greenhouse gas emissions	762 $MtCO_2e$	**2030 Target**	26-28% lower GHG emissions from 2005 level

Energy

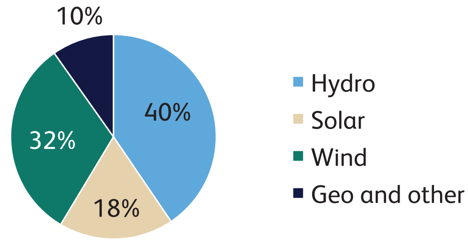
Primary Energy Sources (Mtoe)



Total primary energy	131 Mtoe
Renewable primary energy	8 Mtoe

Power

Renewable power sources (TWh)



Total power consumption	254 TWh
Renewable power consumption	34 TWh

Finance sector response

Climate-aligned bonds	USD 2.5 billion	**Green labelled bonds**	USD 1.1 billion

Banking

We are not aware of a collective banking initiative supporting green finance	Australia and New Zealand Banking Group	Commonwealth Bank	Westpac Banking Corporation
Responsible lending policy	•	•	•
Policy includes climate change	•	•	•
Sector level policy	•	-	•
Green finance solutions	•	•	•
Quantifies green product	•	-	•

Investment

The Investor Group on Climate Change is a collaboration of Australian and New Zealand Investors focussing on the impact of climate change. From 2017, the Portfolio Holdings Disclosure requirement will come into effect for superannuation (pension) funds. There is no formal stewardship code.	Australian Government Future Fund	AustralianSuper	HESTA Super Fund
Corporate governance policy	•	•	•
Policy includes ESG	•	•	•
Policy on climate change risk	•	•	•
Climate change risk mitigation	•	•	•

Listed companies

The Australian Council of Superannuation Investors and the Financial Services Council jointly released an ESG reporting guide for companies in March 2016. Reporting is not mandatory, but companies have to disclose whether they have exposure to material ESG risks and if so, what they do to manage them.

No. Co.s with market cap > USD 2 billion	91
% large Co.s disclosing GHG emissions	70
No. CDP responders	91

Insurance

	QBE Insurance Group	Insurance Australia Group
Identifies climate change risk	•	•
Provides green products	•	•

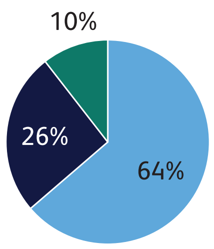
MARKET PROFILE: CHINA

China is the most significant market we covered with a 58% share of the total primary energy use of the markets we researched. China's banks have led in taking steps to restrict finance to industries with high energy consumption, high pollution, and excess pollution. They also provided quantified information on financing for green activities. Regulators have supported with Green Credit Guidelines from the CBRC and green bond standards from PBOC and the National Reform Development Committee. The large investors have not disclosed steps on active ownership yet and there is no stewardship code. There are no listing rule requirements for ESG disclosure and the market had the lowest proportion of large companies disclosing carbon emissions.

Greenhouse gas emissions	12455 $MtCO_2e$	**2030 Target**	- CO2 emissions to peak - 60-65% lower CO2 intensity of GDP from 2005 level - increase non-fossil fuels to 20% of primary energy

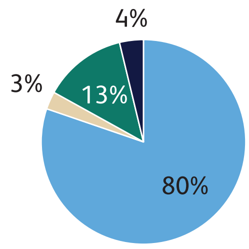
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	3014 Mtoe	**Total power consumption**	5811 TWh
Renewable primary energy	318 Mtoe	**Renewable power consumption**	1404 TWh

Finance sector response

Climate-aligned bonds	USD 246 billion	**Green labelled bonds**	USD 9.2 billion

Banking

The CBRC issued Green Credit Guidelines for banks, to better capture ESG related risks and opportunities in February 2012. The People's Bank of China (PBOC) and UNEP-FI released a report on Establishing China's Green Finance System and PBOC set up has a committee on implementation	Agricultural Bank of China	China Construction Bank Corporation	Industrial & Commercial Bank of China
Responsible lending policy	•	•	•
Policy includes climate change	•	•	•
Sector level policy	•	-	•
Green finance solutions	•	•	•
Quantifies green product	•	•	•

Investment

We are not aware of any domestic stewardship related developments	China Investment Corporation	Central Huijin Investment Ltd.	National Social Security Fund
Corporate governance policy	-	-	-
Policy includes ESG	-	-	-
Policy on climate change risk	-	-	-
Climate change risk mitigation	-	-	-

Listed companies

The State-owned Assets Supervision and Administration Commission required all central government owned enterprises to produce sustainability reports starting in 2012. Both Shanghai and Shenzhen stock exchanges have issued guidance for companies on ESG reporting. Companies dual-listed in Hong Kong have to report under HKEx rules

No. Co.s with market cap > USD 2 billion	446
% large Co.s disclosing GHG emissions	4.8
No. CDP responders	45

Insurance

	Ping An Insurance Group	PICC Property & Casualty
Identifies climate change risk	-	•
Provides green products	-	•

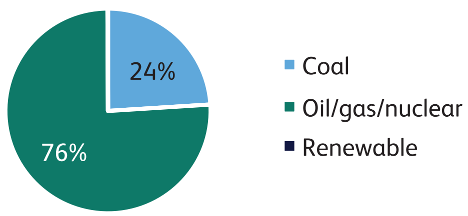
MARKET PROFILE: HONG KONG

Hong Kong imports electricity from China and has done little to develop its domestic renewable base. The banks benefit in terms of sustainable finance from their exposure to the Chinese market and its regulations. The stewardship code is in the form of principles rather than a code for investors to sign on to. The listing rules include ESG disclosure requirements that specify carbon disclosure.

Greenhouse gas emissions	59 $MtCO_2e$	**2030 Target**	N/A

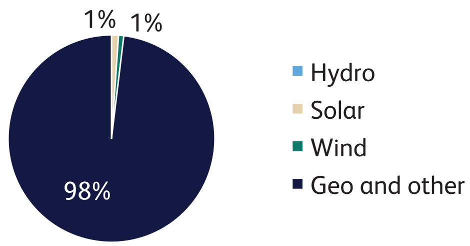
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	28 Mtoe	**Total power consumption**	38 TWh
Renewable primary energy	0 Mtoe	**Renewable power consumption**	0 TWh

Finance sector response

Climate-aligned bonds	USD 1.5 billion	**Green labelled bonds**	USD 0.3 billion

Banking

The Financial Services Development Council issued a paper with recommendations to develop Hong Kong as a regional green finance hub in May 2016	The Bank of East Asia	BOC Hong Kong (Holdings)	Hang Seng Bank
Responsible lending policy	•	•	•
Policy includes climate change	•	-	-
Sector level policy	-	•	•
Green finance solutions	-	•	-
Quantifies green product	-	•	-

Investment

The Securities and Futures Commission issued the Principles for Responsible Ownership in March 2016. These cover ESG under Principle 2. There is no invitation to sign the Principles	Hong Kong Monetary Authority Exchange Fund	Hospital Authority Provident Fund Scheme
Corporate governance policy	-	-
Policy includes ESG	-	-
Policy on climate change risk	-	-
Climate change risk mitigation	-	-

Listed companies

According to listing rules, for accounting periods on or after January 1, 2016, companies must disclose an ESG report. Reports should be quantatative, balanced and cover material issues. Some environmental KPIs, including GHG emissions, are under the comply or explain disclosure regime

No. Co.s with market cap > USD 2 billion	264
% large Co.s disclosing GHG emissions	24
No. CDP responders	17

Insurance

	China Taiping Insurance Holdings	Asia Financial Holdings
Identifies climate change risk	-	-
Provides green products	-	-

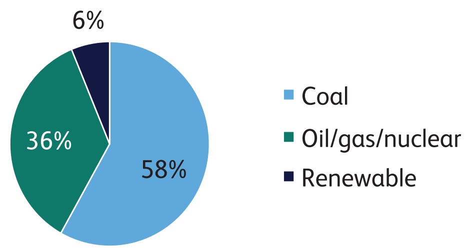
MARKET PROFILE: INDIA

India has a high proportion of coal in its primary energy mix. As with other countries, hydro makes up a large proportion of its renewable energy. Although we found references to guidelines on responsible finance, there was little overall disclosure on sustainable finance from the banks. Similarly there was limited disclosure from the investors, although there was a rule on disclosure of voting records.

Greenhouse gas emissions	3003 $MtCO_2e$	**2030 Target**	- 33-35% lower ghg intensity of GDP from 2005 level - 40% power from non-fossil fuel sources

Energy

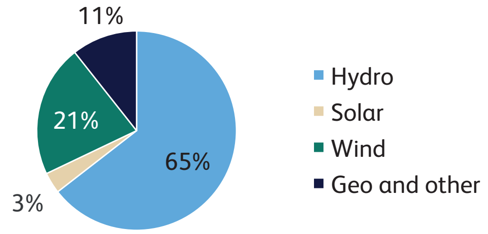
Primary Energy Sources (Mtoe)



Total primary energy	701 Mtoe
Renewable primary energy	44 Mtoe

Power

Renewable power sources (TWh)



Total power consumption	1305 TWh
Renewable power consumption	193 TWh

Finance sector response

Climate-aligned bonds	USD 16.9 billion	**Green labelled bonds**	USD 1.2 billion

Banking

The Small Industries Development Bank of India (SIDBI) and GIZ co-developed the National Voluntary Guidelines on Responsible Finance for India's financial institutions in 2015. These guidelines aim to integrate ESG principles into both lending and investment decisions	HDFC Bank	Kotak Mahindra Bank	State Bank of India
Responsible lending policy	•	•	-
Policy includes climate change	-	-	-
Sector level policy	-	•	-
Green finance solutions	-	-	•
Quantifies green product	-	-	•

Investment

There is no stewardship code. However, on March 24, 2015, the Securities and Exchange Board of India required mutual funds to disclose the rationale for their votes as well as the direction of their votes.	Unit Trust of India	Life Insurance Corporation of India	SBI Mutual Fund
Corporate governance policy	•	-	•
Policy includes ESG	-	-	•
Policy on climate change risk	-	-	-
Climate change risk mitigation	-	-	-

Listed companies

Both stock exchanges are SSE partners. The Securities and Exchange Board of India released a circular on November 4, 2015, requiring that all listed companies produce a business responsibility report. The rule includes a format for those companies that do not follow an international standard

No. Co.s with market cap > USD 2 billion	123
% large Co.s disclosing GHG emissions	33
No. CDP responders	74

Insurance

	Reliance Capital	ICICI Bank
Identifies climate change risk	-	-
Provides green products	-	-

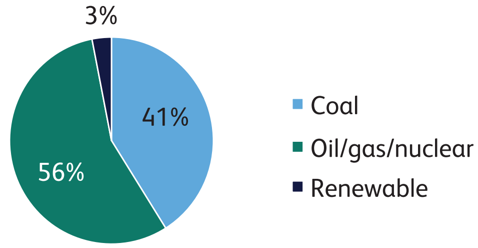
MARKET PROFILE: INDONESIA

The Indonesian banks have started to take steps on responsible finance and this is expected to accelerate following a joint statement between the eight leading banks, OJK and WWF. The leading asset owners and the insurers did not provide any relevant disclosure on sustainable finance or climate change. The large listed companies had the second lowest proportion of emissions disclosure after China.

Greenhouse gas emissions	781 $MtCO_2e$	**2030 Target**	29% lower ghg emissions than BAU scenario

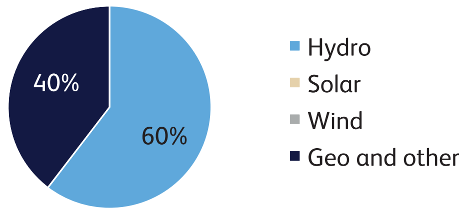
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	196 Mtoe	**Total power consumption**	235 TWh
Renewable primary energy	6 Mtoe	**Renewable power consumption**	27 TWh

Finance sector response

Climate-aligned bonds	USD 0 billion	**Green labelled bonds**	USD 0 billion

Banking

The OJK issued its Sustainable Financing Roadmap in December 2014. As part of this, the eight largest banks made a joint commitment to implement sustainable finance in November 2015	Bank Central Asia	Bank Mandiri Persero	Bank Rakyat Indonesia Persero
Responsible lending policy	-	•	•
Policy includes climate change	-	-	-
Sector level policy	-	-	•
Green finance solutions	•	•	-
Quantifies green product	•	•	-

Investment

We are not aware of any domestic stewardship related developments	BPJS Ketenagakerjaan	BPJS Kesehatan
Corporate governance policy	-	-
Policy includes ESG	-	-
Policy on climate change risk	-	-
Climate change risk mitigation	-	-

Listed companies

Company law states that annual reports should contain a report on social and environmental responsibility. Listed companies also have detailed regulation on CSR practices and expenditure. The CG Code includes responsibilities to broader stakeholders

No. Co.s with market cap > USD 2 billion	33
% large Co.s disclosing GHG emissions	15
No. CDP responders	6

Insurance

	Asuransi Bina Dana Arta	Asuransi Mitra Maparya
Identifies climate change risk	-	-
Provides green products	-	-

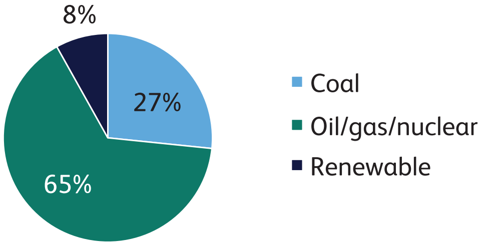
MARKET PROFILE: JAPAN

There are guidelines on green banking and a stewardship code for investors. However, the stewardship code only mentions sustainability in the context of sustainable growth, rather than emphasising climate change. Both the insurers identified climate change as a risk and disclosed green products. The banks covered many, but not all of the disclosure areas, with one bank providing no relevant disclosure. The funds disclosed policy on governance, but not climate change. There has been a small amount of green labelled bond issuance given the size of the market. There was a high level of emissions disclosure from larger companies.

Greenhouse gas emissions	1479 $MtCO_2e$	**2030 Target**	26% lower ghg emissions from 2013 level

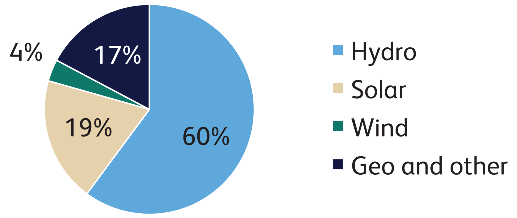
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	448 Mtoe	**Total power consumption**	1036 TWh
Renewable primary energy	36 Mtoe	**Renewable power consumption**	161 TWh

Finance sector response

Climate-aligned bonds	USD 2.6 billion	**Green labelled bonds**	USD 0.8 billion

Banking

The Ministry of the Environment worked with a drafting committee to produce the Principles for Financial Action towards a Sustainable Society in March 2012. The principles apply across all major categories of finance and include specific recommendations	Japan Post Bank	Mitsubishi UFJ Financial Group	Sumitomo Mitsui Financial Group
Responsible lending policy	-	•	•
Policy includes climate change	-	-	•
Sector level policy	-	-	-
Green finance solutions	-	•	•
Quantifies green product	-	•	•

Investment

The Financial Services Agency launched the Principles for Responsible Institutional Investors in February 2014. This mentions sustainable growth as an objective, but does not specifically mention environmental or social factors. As at July 31, 2016, there were 212 signatories	Government Pension Investment Fund	Pension Fund Association for Local Government Officials	Pension Fund Association
Corporate governance policy	•	•	•
Policy includes ESG	•	•	-
Policy on climate change risk	-	-	-
Climate change risk mitigation	-	-	-

Listed companies

There is no specific ESG disclosure requirement from company law or listing rules. However, the Corporate Governance Code of June 1, 2015, has a section on stakeholders, with Principle 2.3 prompting companies to take appropriate measures to address sustainability issues

No. Co.s with market cap > USD 2 billion	412
% large Co.s disclosing GHG emissions	67
No. CDP responders	261

Insurance

	Tokio Marine Holdings	MS&AD Insurance Group Holdings
Identifies climate change risk	•	•
Provides green products	•	•

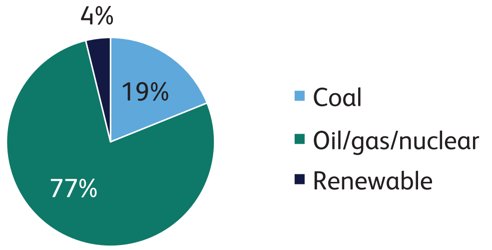
MARKET PROFILE: MALAYSIA

Listing rules include a requirement for a sustainability statement. There is a stewardship code that refers to sustainability and the Institutional Investor Council includes the major domestic asset owners. The funds are only beginning to take steps on sustainability and references to climate change are vague. There was no domestic banking initiative and only one of the banks mentioned policy on responsible lending.

Greenhouse gas emissions	279 $MtCO_2e$	**2030 Target**	35% lower ghg intensity of GDP than 2005

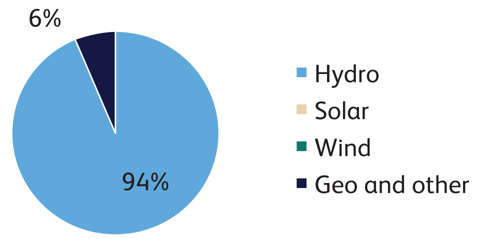
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	93 Mtoe	**Total power consumption**	147 TWh
Renewable primary energy	4 Mtoe	**Renewable power consumption**	16 TWh

Finance sector response

Climate-aligned bonds	USD 0 billion	**Green labelled bonds**	USD 0 billion

Banking

We are not aware of a collective banking initiative supporting green finance

	CIMB Group Holdings Bhd	Malayan Banking Bhd	Public Bank Bhd
Responsible lending policy	-	•	-
Policy includes climate change	-	-	-
Sector level policy	-	-	-
Green finance solutions	-	-	-
Quantifies green product	-	-	-

Investment

The Securities Commission issued the Malaysian Code for Institutional Investors in June 2014. The Code covers sustainability under principle 5. As at July 31, 2016, eight investors had signed the Code

	Employees Provident Fund	Permodalan Nasional Berhad	Kumpulan Wang Persaraan
Corporate governance policy	•	-	•
Policy includes ESG	•	-	•
Policy on climate change risk	•	-	-
Climate change risk mitigation	-	-	-

Listed companies

On October 8, 2015, Bursa Malaysia amended its listing rules to include the requirement for a sustainability statement. This must identify material sustainability issues and include details of policies, actions taken, and indicators relevant to their management. Bursa Malaysia is an SSE partner exchange.

No. Co.s with market cap > USD 2 billion	40
% large Co.s disclosing GHG emissions	30
No. CDP responders	9

Insurance

	LPI Capital Bhd	Syarikat Takaful Malaysia Bhd
Identifies climate change risk	•	-
Provides green products	-	-

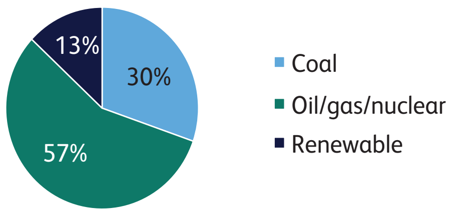
MARKET PROFILE: PHILIPPINES

The Philippines has the highest renewable power proportion of the markets we covered. This is due to high levels of geothermal and hydro. Tariff structure and rules on international financing are both favourable. There is no banking initiative and mixed results from the banks, two with some relevant disclosure and the third with none. There has been a green labelled bond issuance. ESG is not covered in listing guidelines and the large companies have the third lowest rate of disclosure. We did not cover asset owners for this market. We assessed two leading banks that offer general insurance on climate change factors to find no relevant disclosure. There are a number of local insurance associations that are members of the Principles of Sustainable Insurance.

Greenhouse gas emissions	167 $MtCO_2e$	**2030 Target**	70% lower ghg emissions than BAU scenario

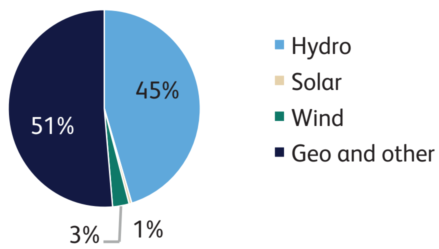
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	38 Mtoe	**Total power consumption**	83 TWh
Renewable primary energy	5 Mtoe	**Renewable power consumption**	22 TWh

Finance sector response

Climate-aligned bonds	USD 0.2 billion	**Green labelled bonds**	USD 0.2 billion

Banking

We are not aware of a collective banking initiative supporting green finance	Bank of the Philippine Islands	BDO Unibank	Philtrust Bank
Responsible lending policy	•	•	-
Policy includes climate change	-	-	-
Sector level policy	-	•	-
Green finance solutions	•	•	-
Quantifies green product	•	-	-

Investment

We did not cover any asset owners in this market

Corporate governance policy	
Policy includes ESG	
Policy on climate change risk	
Climate change risk mitigation	

Listed companies

We are not aware that there are ESG disclosure rules or guidelines developed for the Philippine market

No. Co.s with market cap > USD 2 billion	32
% large Co.s disclosing GHG emissions	22
No. CDP responders	4

Insurance

	BDO Unibank	Philippine National Bank
Identifies climate change risk	-	-
Provides green products	-	-

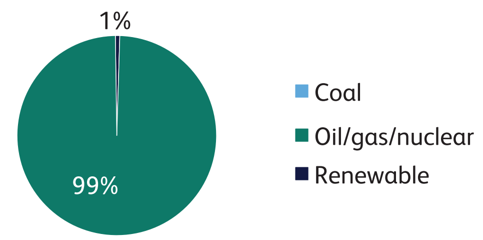
MARKET PROFILE: SINGAPORE

Singapore has an unusual energy mix in that there is almost no coal and only a tiny amount of renewables, mainly from waste to energy. The banks all upgraded their disclosure in 2016 following responsible lending guidelines from the Association of Banks in Singapore. However, these are vague statements and there is nothing on climate change or green finance. This may indicate the banks are missing an opportunity. Sustainability reports are required by listing rules. The insurers were both associated with leading banks and have no related disclosure. Public policy in some environmental areas is forward thinking, however, this has not yet translated into action in financial services.

Greenhouse gas emissions	56 $MtCO_2e$	**2030 Target**	36% lower ghg intensity of GDP from 2005 level

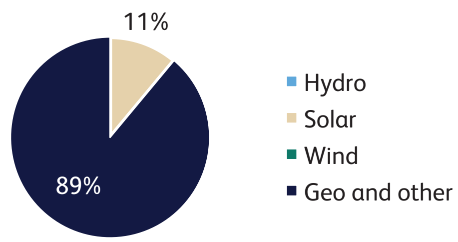
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	80 Mtoe	**Total power consumption**	50 TWh
Renewable primary energy	0 Mtoe	**Renewable power consumption**	1 TWh

Finance sector response

Climate-aligned bonds	USD 0.1 billion	**Green labelled bonds**	USD 0 billion

Banking

The Association of Banks in Singapore issued Guidelines on Responsible Financing in October 2015. The principles address senior management commitment, internal controls, and capacity building

	DBS Group Holdings	Oversea-Chinese Banking Corp	United Overseas Bank
Responsible lending policy	•	•	•
Policy includes climate change	-	-	-
Sector level policy	-	-	-
Green finance solutions	-	-	-
Quantifies green product	-	-	-

Investment

There have been calls for a stewardship code. Stewardship Asia is a think tank hosted by Temasek to promote stewardship across Asia. It had its inaugural event in 2015

	Temasek Holdings	Government of Singapore Investment Corporation	Great Eastern
Corporate governance policy	•	-	-
Policy includes ESG	•	-	-
Policy on climate change risk	•	-	-
Climate change risk mitigation	-	-	-

Listed companies

Singapore Stock Exchange updated its listing rules on July 20, 2016, to require companies to produce a sustainability report. This must cover material ESG factors and the management approach for them

No. Co.s with market cap > USD 2 billion	48
% large Co.s disclosing GHG emissions	42
No. CDP responders	15

Insurance

	Great Eastern Holdings	United Overseas Insurance
Identifies climate change risk	-	-
Provides green products	-	-

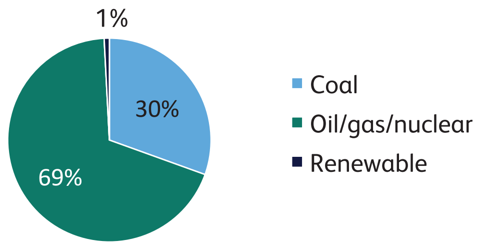
MARKET PROFILE: SOUTH KOREA

As a market, South Korea has shown a high degree of awareness of climate change. All the banks disclose green products, there are green labelled bonds, and the investors disclose some steps on climate change mitigation. However, the banks have very little disclosure on where they will limit financing either due to climate change or other sustainability issues. The stock exchange does not require ESG disclosure, but national regulations do for large companies. There is a draft stewardship code.

Greenhouse gas emissions	669 $MtCO_2e$	**2030 Target**	37% lower ghg emissions than BAU scenario

Energy

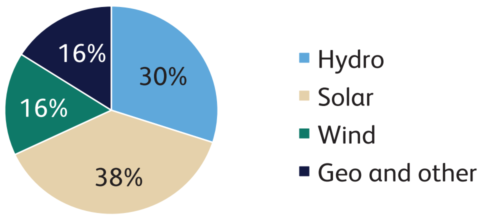
Primary Energy Sources (Mtoe)



Total primary energy	277 Mtoe
Renewable primary energy	2 Mtoe

Power

Renewable power sources (TWh)



Total power consumption	522 TWh
Renewable power consumption	10 TWh

Finance sector response

Climate-aligned bonds	USD 19.6 billion	**Green labelled bonds**	USD 1.4 billion

Banking

We are not aware of a collective banking initiative supporting green finance	Hana Financial Group	KB Financial Group	Shinhan Financial Group
Responsible lending policy	-	•	•
Policy includes climate change	-	-	-
Sector level policy	-	-	•
Green finance solutions	•	•	•
Quantifies green product	•	•	•

Investment

The Financial Services Commission has drafted a stewardship code. This is currently under discussion as major business groups have expressed concerns over the proposed code	National Pension Service	Mirae Asset Global Investments	Samsung Asset Management
Corporate governance policy	•	-	-
Policy includes ESG	•	-	-
Policy on climate change risk	•	-	•
Climate change risk mitigation	•	•	•

Listed companies

The Korea Stock Exchange is a partner of the SSE initiative. The Financial Services Commission requires the 500 largest companies to disclose details including GHG emissions, energy use, and green certification. This should be in the annual report for listed companies

No. Co.s with market cap > USD 2 billion	92
% large Co.s disclosing GHG emissions	76
No. CDP responders	87

Insurance

	Samsung Fire & Marine Insurance	Dongbu Insurance
Identifies climate change risk	•	-
Provides green products	•	•

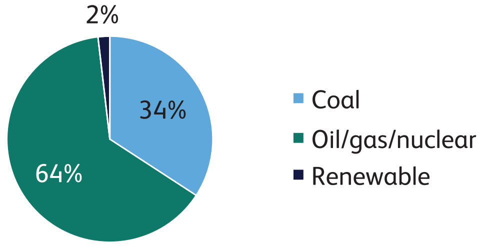
MARKET PROFILE: TAIWAN

Taiwan's financial industry has started to address the challenges of climate change. The banks have all begun to dedicate funds to green finance. A new stewardship code is prompting investors to assess ESG at their companies. The insurers are developing products. Larger listed companies also have to provide GRI aligned CSR reports. Despite the strong focus on climate change there are no green labelled bonds.

Greenhouse gas emissions	271 $MtCO_2e$	**2030 Target**	50% lower ghg emissions than BAU scenario

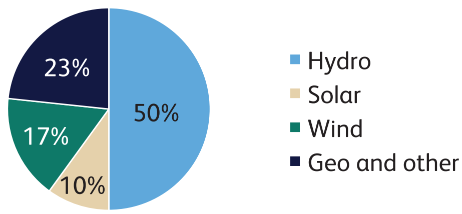
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	111 Mtoe	**Total power consumption**	258 TWh
Renewable primary energy	2 Mtoe	**Renewable power consumption**	9 TWh

Finance sector response

Climate-aligned bonds	USD 0.7 billion	**Green labelled bonds**	USD 0 billion

Banking

We are not aware of a collective banking initiative supporting green finance	CTBC Financial Holding	First Financial Holding	Mega Financial Holding
Responsible lending policy	•	•	•
Policy includes climate change	•	•	-
Sector level policy	-	-	-
Green finance solutions	•	•	•
Quantifies green product	•	•	•

Investment

The Taiwan Stock Exchange launched the Stewardship Principles for Institutional Investors in June 30, 2016. This mentions environmental and social issues under principle 3, guideline 3-2. As at July 31, 2016, there were nine statements from signatories	Bureau of Labor Funds	Chunghwa Post	Cathay Financial Holding
Corporate governance policy	•	•	•
Policy includes ESG	•	•	•
Policy on climate change risk	-	-	•
Climate change risk mitigation	-	-	•

Listed companies

A Taiwan Stock Exchange rule made CSR reporting mandatory from 2015 for companies in the food, finance, and chemicals sectors as well as those with half of revenues from food and beverage or paid-in capital of more than TWD 10 billion

No. Co.s with market cap > USD 2 billion	60
% large Co.s disclosing GHG emissions	78
No. CDP responders	51

Insurance

	Cathay Financial Holding	Fubon Financial Holding
Identifies climate change risk	•	•
Provides green products	•	•

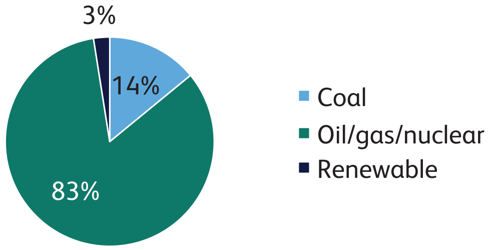
MARKET PROFILE: THAILAND

The leading Thai banks had responsible lending policies and two out of the three offered green products. However, none of them mentioned climate change as a risk factor in relation to lending. Two domestic asset managers have launched ESG funds. However, there is no green-labelled bond issuance.

Greenhouse gas emissions	440 $MtCO_2e$	**2030 Target**	20% lower ghg emissions than BAU scenario

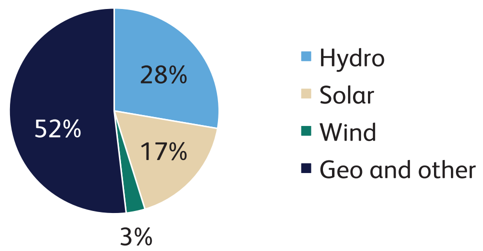
Energy

Primary Energy Sources (Mtoe)



Power

Renewable power sources (TWh)



Total primary energy	125 Mtoe	**Total power consumption**	178 TWh
Renewable primary energy	3 Mtoe	**Renewable power consumption**	14 TWh

Finance sector response

Climate-aligned bonds	USD 3.2 billion	**Green labelled bonds**	USD 0 billion

Banking

We are not aware of a collective banking initiative supporting green finance	Bangkok Bank	Kasikornbank	Siam Commercial Bank
Responsible lending policy	•	•	•
Policy includes climate change	-	-	-
Sector level policy	-	-	-
Green finance solutions	-	•	•
Quantifies green product	-	•	•

Investment

On March 14, 2016, The Securities and Exchange Commission with the Association of Investment Management Companies announced plans to jointly prepare an Institutional Investor Code to promote responsible investment	Government Pension Fund	Social Security Fund
Corporate governance policy	•	-
Policy includes ESG	•	•
Policy on climate change risk	•	-
Climate change risk mitigation	•	-

Listed companies

The Stock Exchange of Thailand joined the Sustainable Stock Exchanges initiative on September 10, 2014. There is a requirement for companies to disclose on environmental and social factors

No. Co.s with market cap > USD 2 billion	62
% large Co.s disclosing GHG emissions	42
No. CDP responders	11

Insurance

	Bangkok Insurance	Dhipaya Insurance
Identifies climate change risk	-	-
Provides green products	-	-

CONCLUSION

Nations across the Asia Pacific are critical in the global effort to tackle climate change. At the same time there are also significant regional risks and opportunities in climate finance. There is substantive momentum in key areas of investment, yet significant opportunities remain untapped.

We found that leading financial institutions across Asia Pacific have started the journey towards sustainable finance. We found a range of responses and approaches, with pockets of activity in each market. Many nations across the region are investing in the policy frameworks and commitments necessary to drive investment into climate solutions. However, much remains to be done.

Most of the banks had some form of responsible lending policy and more than half of the investors made reference to steps they take in relation to corporate governance. However, fewer had specific policy relating to climate change. The banks were focused more on new products, rather than risks.

The physical effects of climate change continue to worsen and new regulations and policies, spurred by national climate commitments and the Paris Climate Agreement, are rebalancing the playing field towards low carbon economies and away from high energy, high carbon activities.

We encourage financial regulators to support their industry in addressing these forces in a proactive way to reduce systemic risks and improve the competitiveness of the new economy.

We encourage financial institutions to start or accelerate the implementation of sustainable finance, particularly in respect of climate change. This will position them in growth markets and away from activities increasingly at risk of tighter regulation.

It is in the interests of all parties that financial regulators and institutions take these steps. AIGCC would be happy to share expertise and learning to support this transition.

Appendix 1 – Methodology

The following table sets out the sample selection process and provides more detailed guidance over the factors we assessed in this review. We selected listed banks and insurers as listed companies typically have better disclosure than private ones. For each institution we reviewed available information including annual reports, sustainability/ CSR reports, policy statements, websites and press releases.

We assessed regulations through desk research and confirmed conclusions with our expert networks.

Banks

We covered a total of 36 banks. We selected the top three banks per market using Bloomberg on the basis of market capitalization as at June 30, 2016.		
Q1	Responsible lending policy	Does the bank have a statement on responsible lending (i.e. that it factors environmental and social considerations into decisions to allocate capital)?
Q2	Policy includes climate change	Does the bank identify climate change factors (mitigation, adaptation, high energy use) as a risk or a reason to limit financing?
Q3	Sector level policy	Does the bank disclose any sector level policy or details of sectors where it has withdrawn financing for sustainability reasons?
Q4	Green finance solutions	Does the bank provide green finance solutions?
Q5	Quantifies green product	Does the bank quantify its exposure to green product?

Investors

We reviewed disclosure for a total of 30 investors. We selected them on the basis of informal discussions with key stakeholders about some of the most influential domestic investors in each market. We covered two or three investors per market, except for the Philippines. Some of the asset managers we reviewed had relations with the banks.		
Q1	Corporate governance policy	Does the fund disclose any policy relating to how it promotes better corporate governance at the companies in which it invests (such as a voting policy or its approach to stewardship)?
Q2	Policy includes ESG	Does the fund disclose any policy relating to the sustainability or ESG credentials of the companies in which it invests?
Q3	Policy on climate change risk	Does the fund provide any statements on the issue of climate change as a global risk and potential implications to its portfolio?
Q4	Climate change risk mitigation	Does the fund disclose specific steps taken to address climate change through its investment operations?

Insurers

We selected two insurers per market for a total review of 24 insurers. We ordered the insurance sector for each market by market capitalization as at June 30, 2016. We then chose the two largest insurers that offered property or general insurance (not-life or health only). For India we included one large bank. For the Philippines we reviewed two leading banks. Some insurers had associations with the banks and investors.		
Q1	Identifies climate change risk	Does the company refer to climate change as a risk issue?
Q2	Provides green products	Does the company mention products to help clients address climate change/ environment risks?

Appendix 2 – Financial institutions

Market	Banks	Investors	Insurers
Australia	Australia and New Zealand Banking Group	Australian Government Future Fund	QBE Insurance Group
	Commonwealth Bank	AustralianSuper	Insurance Australia Group
	Westpac Banking Corporation	HESTA Super Fund	
China	Agricultural Bank of China	China Investment Corporation	Ping An Insurance Group
	China Construction Bank Corporation	Central Huijin Investment	PICC Property & Casualty
	Industrial & Commercial Bank of China	National Social Security Fund	
Hong Kong	The Bank of East Asia	Hong Kong Monetary Authority Exchange Fund	China Taiping Insurance Holdings
	BOC Hong Kong (Holdings)	Hospital Authority Provident Fund Scheme	Asia Financial Holdings
	Hang Seng Bank		
India	HDFC Bank	Unit Trust of India	Reliance Capital
	Kotak Mahindra Bank	Life Insurance Corporation of India	ICICI Bank
	State Bank of India	SBI Mutual Fund	
Indonesia	Bank Central Asia	BPJS Ketenagakerjaan	Asuransi Bina Dana Arta
	Bank Mandiri Persero	BPJS Kesehatan	Asuransi Mitra Maparya
	Bank Rakyat Indonesia Persero		
Japan	Japan Post Bank	Government Pension Investment Fund	Tokio Marine Holdings
	Mitsubishi UFJ Financial Group	Pension Fund Association for Local Government Officials	MS&AD Insurance Group Holdings
	Sumitomo Mitsui Financial Group	Pension Fund Association	
Malaysia	CIMB Group Holdings Bhd	Employees Provident Fund	LPI Capital Bhd
	Malayan Banking Bhd	Permodalan Nasional Berhad	Syarikat Takaful Malaysia Bhd
	Public Bank Bhd	Kumpulan Wang Persaraan	
Philippines	Bank of the Philippine Islands		BDO Unibank
	BDO Unibank		Philippine National Bank
	Philtrust Bank		

Singapore	DBS Group Holdings Oversea-Chinese Banking Corp United Overseas Bank	Temasek Holdings Government of Singapore Investment Corporation Great Eastern Holdings	Great Eastern Holdings United Overseas Insurance
South Korea	Hana Financial Group KB Financial Group Shinhan Financial Group	National Pension Service Mirae Asset Global Investments Samsung Asset Management	Samsung Fire & Marine Insurance Dongbu Insurance
Taiwan	CTBC Financial Holding First Financial Holding Mega Financial Holding	Bureau of Labor Funds Chunghwa Post Cathay Financial Holding	Cathay Financial Holding Fubon Financial Holding
Thailand	Bangkok Bank Kasikornbank Siam Commercial Bank	Government Pension Fund Social Security Fund	Bangkok Insurance Dhipaya Insurance

Appendix 3 – Summary of sources

Data points	Sources
GHG emissions	World Bank 2012 data
Climate change commitments	INDCs from UNFCCC website
Primary energy and renewable power	BP Statistical Review of World Energy 2016 (treating renewable consumption numbers as equivalent to production)
Energy Investment	IEA World Energy Investment Outlook 2014
Climate related bonds	Climate Bonds Initiative
Financial initiative	PRI, UNEP FI, Equator Principles, SSE websites; ACGA supplied information directly
Bank regulation	Banking regulator and association websites, UNEP FI studies
Stewardship codes	Capital market regulators, news articles, ACGA
Mandatory ESG disclosure	Regulations including companies acts, listing rules, corporate governance codes
Bank/ investor/ insurance questions	Annual reports, sustainability reports, websites
Company GHG disclosure	Corporate Knights (using Bloomberg data), Bloomberg, CDP

www.aigcc.net