



Global Asset
Management

RBC Asian Equity Team Environmental, Social & Governance Report 2022



Foreword

It has been an extraordinary and unprecedented few years since the advent of the global pandemic. The inability to travel has necessitated changes to the way we work as an investment team, making seamless and fully integrated Environmental, Social and Governance (ESG) analysis an ever more important part of our process.

2022 should provide us with an opportunity to take our efforts one step further, with the SFDR Article 8 and 9 initiatives being undertaken in Europe, it becomes increasingly important to address the requirements of our client base with appropriate product development and transparent ESG disclosures.

As Asian governments increasingly commit to specific targets in the fight against climate change, we are provided with a clearer template on what companies in various countries will have to do to help their governments and economies meet carbon targets. As a team, we are closely tracking our portfolio carbon scores and ESG ratings, using both internal and third party metrics, to ensure we continue to meet our obligations and thresholds. While Asia continues to lag other developed markets in terms of ESG awareness and commitments, both on environmental issues and social responsibilities, we feel that change is being effected and is accelerating.

Falling under the ‘G’ for governance, the consideration of ethical factors also provides a point of risk mitigation within our investment process. We are looking to avoid management teams with the wrong incentive structures that may encourage unscrupulous practices, resulting in abdication from broader responsibilities to their customers or employees. We believe that such companies are on ultimately unsustainable trajectories that will impact their returns to us as shareholders and effect a permanent impairment of our clients’ capital. Active management and due diligence backed with industry expertise can produce the best outcome for our clients, both in terms of capital appreciation and positive ESG outcomes.

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Incorporating ESG into our investment process is a dynamic and evolving process. We have learned a lot over the last eight years and feel we have made good progress, but we recognise that we must continue to refine and improve.

Our approach to ESG

ESG factors are an essential and integrated part of our fundamental active investment management process. We believe that incorporating ESG factors into our investment process allows for a more robust risk assessment and we have engaged with ESG issues since our investment track record began in 2014. The following section gives an overview of what ESG means to our team and how we integrate ESG factors into our investment process.

What is ESG integration?

ESG integration incorporates the consideration of material environmental, social, and corporate governance attributes of a company in the investment process. ESG factors are typically non-financial. We believe ESG integration enhances our fundamental investment process.

Environmental factors include sustainability and resource usage, while social factors address topics such as community impact and employee relations. Corporate governance focuses on factors including shareholder rights and voting and board accountability. For companies that we own in our portfolio, we thoughtfully exercise the voting rights of the accounts we manage. We discuss this further in the proxy voting section.

How we integrate ESG

Our approach to incorporating ESG is not one distinct step in our investment process; rather, the consideration of these factors is embedded throughout the process. To do this, we access and analyse information from a broad array of sources, including external data providers and, more importantly, on-the-ground channel checks.

The data points gathered from these sources can be both quantitative and qualitative. We believe that incorporating ESG factors will allow for more robust risk assessments on a stock and portfolio level.

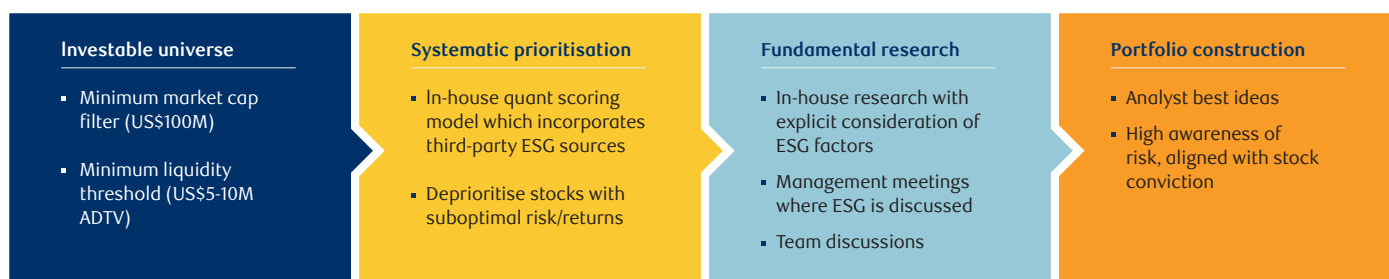
Our investment process includes four stages, highlighted in Fig. 1. The first stage is based on a minimum market cap and minimum liquidity filter. ESG factors are important criteria we incorporate into stage two and stage three of the process. In stage two, the systematic prioritisation stage, our in-house quantitative scoring model incorporates third-party ESG data sources.

Our proprietary model allows us to narrow down the number of stocks for fundamental research.

At the fundamental research stage, we meet with management, incorporating ESG questions into our in-house checklist. Finally, the portfolio construction stage gathers the analyst's best ideas. This process is ongoing: after a stock has been incorporated within the portfolio, we continue to consider ESG factors at both stock and portfolio level, and to update each holding's profile over time.

ESG is fundamental to our investment approach and is integrated throughout our investment process. Fig. 2 provides more detail on the ESG factors highlighted in Fig. 1. For quantitative purposes, we rely on third-party research tools such as MSCI, Sustainalytics and GMT Research. The latter is an accounting research firm that allows us to detect aggressive accounting and helps us avoid stocks that may be 'window-dressing' their financial statements.

Fig. 1: Investment process



Please Note: Specific stock numbers vary.

Fig. 2: ESG is key to our fundamental, active investment management

	Quantitative	Qualitative	Beyond
Key activities	<ul style="list-style-type: none"> Proprietary quant process / tools Accounting quality screens In-house audit / quant specialists 3rd party research (GMT, MSCI, ESG, HOLT Risk, Sustainalytics) 	<ul style="list-style-type: none"> In-house research notes and investment checklist with ESG rating Use of third-party data specialising in ESG e.g. past several years of company's litigation or media coverage 	<ul style="list-style-type: none"> Meetings / calls where ESG is discussed On-the-ground channel checks Sector specialist team structure Interviews e.g. industry experts, regulators, competitors, local investors
Outcomes	<ul style="list-style-type: none"> Integrity of financial information Sustainability of cash flows 	<ul style="list-style-type: none"> Holistic, thorough, consistent process Long-term view 	<ul style="list-style-type: none"> We consider ESG from both a company and industry perspective

← Integrated by the investment team throughout the entire process →

Source: RBC Global Asset Management, April 2022

On the qualitative front, we use in-house research notes. In addition, we summarise our thorough assessment for each holding using an in-house ESG checklist that generates an ESG rating on a scale of A to E. Each holding must have a rating of C or above. The ratings are updated regularly throughout our holding period. We work to cultivate in-depth and ongoing dialogues and to establish long-term relationships with management teams. We aim to understand how the company is approaching material ESG issues, and to convey our views through proxy voting and engagement. We believe that over time these suggestions lead to positive change.

Proxy voting

As an asset manager, we have an obligation to act in the best interests of the accounts that we manage. We take this responsibility seriously. It is our policy to exercise the voting rights associated with each of the securities held in accounts we manage with a view to enhancing the long-term value of the securities held, and by extension, the long-term performance of our clients' portfolios.

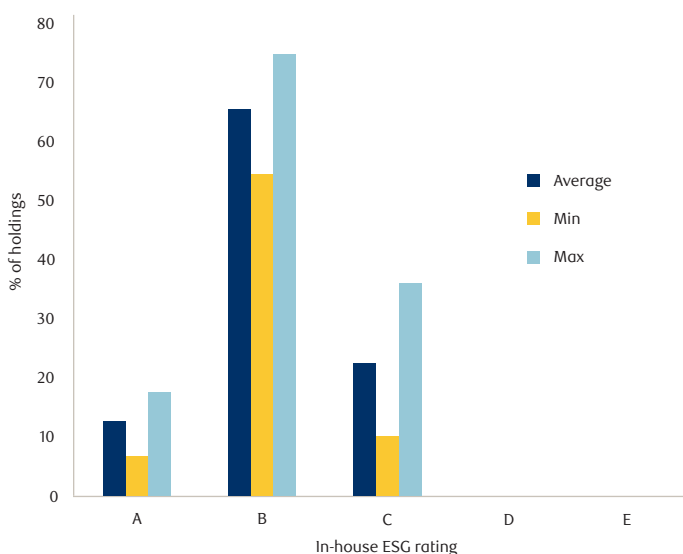
Engagement

We engage actively with all our investee companies. We conduct a significant number of company meetings and calls every year where we discuss ESG matters directly with company management. During these meetings, we raise material ESG-related concerns, so we can better understand how the company is approaching these risks and opportunities. We also conduct channel checks and consult industry experts to provide an external and unbiased view of companies we invest in. Our sector specialist team structure allows the sector analysts to consider ESG from a wider industry perspective.

Summary

The consideration of ESG factors is ingrained within each step of our investment process, facilitating robust risk and reward assessments of each individual stock we consider, and of the portfolio as a whole. The integration of ESG aligns with our investment philosophy of finding companies that display high or improving return on capital, with strong balance sheets, that can outpace market expectations.

Fig. 3: In-house ESG ratings for all holdings



Source: RBC Global Asset Management. Data as at January 2022. Total 170 companies held across all strategies managed by the RBC GAM Asian Equity Team.

ESG engagement cases

Our approach to engagement is to encourage in-depth and ongoing dialogues with the companies in which we invest and to establish long-term relationships with management teams. We believe that over time, our suggestions can lead to positive change. We engage with management via three main methods: one-on-one updates, either in person or via conference calls, group meetings, and via proxy voting. Below are examples of some of our engagement in 2021.



Adapting to the future of work after COVID-19

The COVID-19 pandemic accelerated existing trends in remote work, e-commerce and automation, with up to 25% more workers than previously estimated potentially needing to switch occupations. We are invested in a Japanese human resources company and we discussed their progress in helping their clients adapt to the future of work during and after COVID-19.

Board diversity

We believe a diverse board is beneficial to long-term returns and better risk management. We engaged with a Japanese healthcare company to increase its number of independent directors and improve on its gender diversity. The company has made improvements and has been adopted as a constituent stock of the MSCI Japan Empowering Women Index and the FTSE4Good index.

Environmental impact

We believe companies should try to reduce their consumption of resources and emission of pollutants wherever possible. We have invested in an Australian commercial and industry group that owns and manages warehouses and logistics facilities. The company achieved carbon neutrality for its global operations in 2021, four years ahead of its 2025 target. We engaged with a Japanese electronics manufacturer and we specifically discussed

the steps the company is taking to reduce the use of packaging materials and steps it can take to recycle or repurpose used electronics.

Employer of choice and human capital development

Companies that are able to retain and develop their human capital typically maintain a competitive advantage in today's knowledge economy. We are invested in a Taiwanese semiconductor company that has repeatedly reported a lower employee turnover and higher employee satisfaction than its industry peers. Through our interactions, the company highlighted its ability to retain and develop its people by rewarding them in both financial and non-financial ways. It is able to provide long-term development paths and career opportunities for employees.

Stock incentive program

We like to see management incentives that align with our interests as minority shareholders. Incentive programmes that are incorrectly structured, particularly employee stock option programs (ESOPs), can result in a focus on short-term rather than long-term returns and excessive risk taking. Our ideal ESOP structure would be one in which shares are bought on the open market and awarded to management and employees for specific operational performance that is aligned with minority interests. We have voted against management where ESOP plans are not aligned with these interests.

Privacy and data security

Given the vast amount of personal, confidential and business-critical information at risk across a variety of platforms, there is an increasing need for more robust cybersecurity and data privacy infrastructure. We engaged with an Indian bank, offering our opinions on how they could further improve their data practices and protect themselves against the threat of cyberattacks.

Shareholder surveys

As long-term shareholders, we are in regular communication with company management. Aside from annual general meetings and proxy voting, companies on occasion seek our opinions on matters such as ESG via a shareholder survey. We provided written feedback on both ESG and non-ESG matters for an Australian real estate company.

Proxy voting

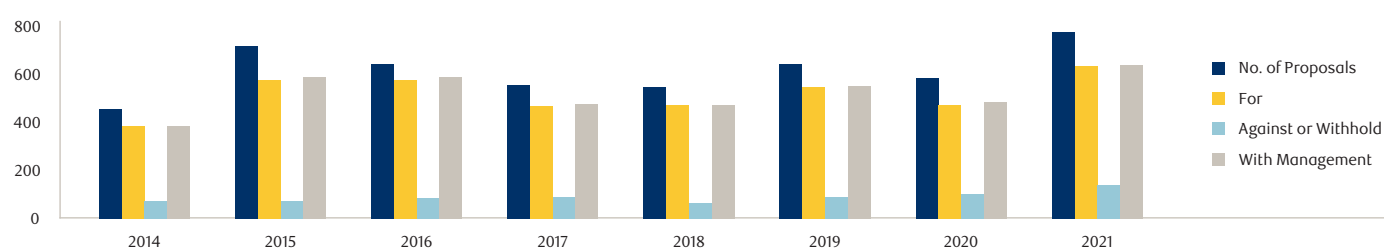
Proxy voting is a key part of our active ownership, providing an important way for us to convey our views to company boards and management teams. Voting responsibly is part of our fiduciary duty. In Asian markets we rely on our proxy advisor to make voting recommendations but we still review each ballot item and vote based on our own assessment of the specific company circumstances.

To arrive at our voting decisions, RBC GAM's Corporate Governance & Responsible Investment Group draws upon its own expertise and that of our investment teams, uses data from leading research firms, and engages with companies and other shareholders, if necessary.

RBC GAM also has a clear policy to manage conflicts of interest to protect the independence of our voting decisions and procedures from commercial or other influences. Fig. 4 highlights our teams voting history since 2014.

Our decision to invest in a company reflects, at least in part, our confidence in its management. That is why we often support management on routine matters, as reflected in our voting patterns in Fig. 5. However, we will not hesitate to withhold our support or oppose management if we believe that it is in the best interests of shareholders and our clients to do so.

Fig. 4: RBC Asian Equity team voting history since 2014



Source: RBC Global Asset Management. Data as at March 2022. Reflects combined voting data from RBC Asia Pacific ex-Japan strategy and RBC Japanese Equity strategy.

Fig. 5: RBC Asian Equity proxy voting proposal categories since inception

Proposal category	Number of proposals	WITH management	AGAINST management	% AGAINST management
Elect Director	5365	5041	324	6%
Approve auditors and their remuneration and ratify auditors	300	295	5	2%
Approve remuneration of directors	287	267	20	7%
Approve issuance of equity or equity-linked securities without preemptive rights	135	38	97	72%
Advisory vote to ratify named executive officers' compensation and approve remuneration policy	105	92	13	12%
Authorise reissuance of repurchased shares	82	0	82	100%
Allow Directors to engage in commercial transactions with the company and/or be involved with other companies	12	9	3	25%

Source: RBC Global Asset Management. Data as at March 2022. Reflects voting data from RBC Asia Pacific ex-Japan strategy and RBC Japanese Equity strategy. Key proposal categories have been listed for clarity purposes.

Country level ESG assessment

Companies are affected by the operating environment of the countries they operate in. We believe that countries that have improving or high ESG scores are more likely to deliver sustainable economic growth compared to countries with falling or low scores. In this section, we use independent third-party indices to reflect changes in ESG performance over time.

Methodology

For the environmental factor, we use Yale University's Environmental Performance Index (EPI). The Index is made up of two sub-categories: environmental health and ecosystem vitality. The overall score is driven by 32 individual performance indicators.

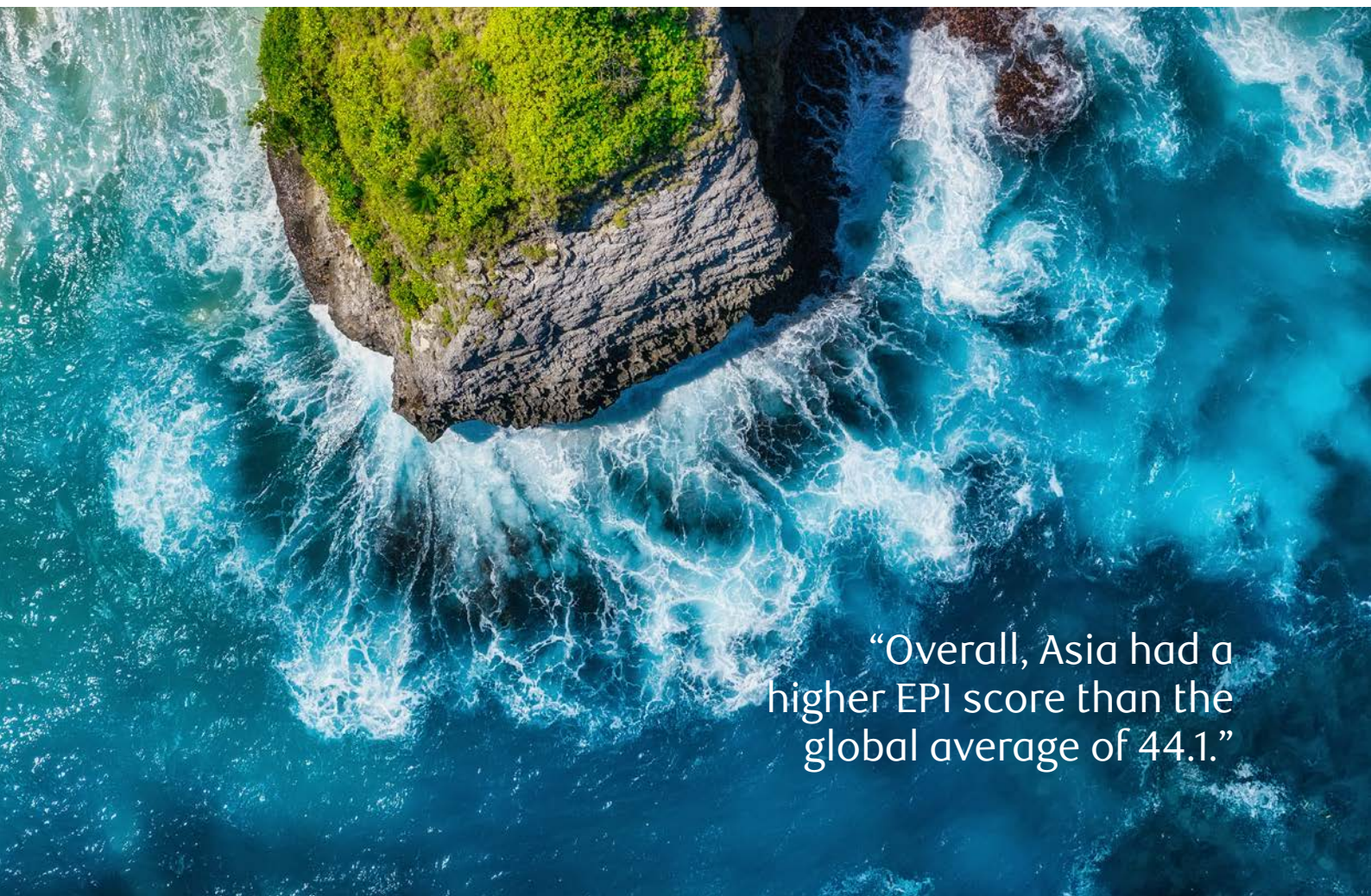
For the social factor, we use Freedom House's Freedom in the World Index (FWI). FWI evaluates the state of freedom based on two subcategories: political rights and civil liberties. Each country is assigned a score between 0 to 4 points based on 25 indicators, for a potential total score of 100.

For country governance, we use Transparency International's Corruption Perceptions Index (CPI). The CPI draws on 13 surveys and expert assessments to measure public sector corruption in over 170 countries and territories, giving each a score from zero (highly corrupt) to 100 (very clean).

Environmental observations

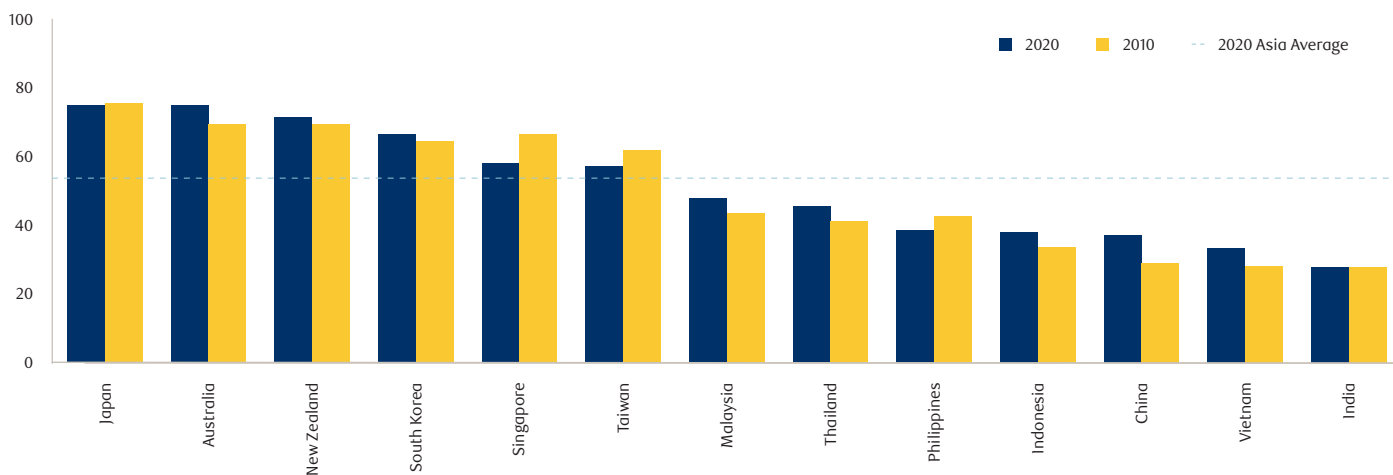
The average environmental performance index (EPI) in Asia was 53.6 in 2020, a small increase over the 2010 average of 52.1. Overall, Asia had a higher EPI score than the global average of 46.4, which increased over the 2010 global average of 44.1.

Unsurprisingly, the more developed countries in Asia have a higher environmental score as they are financially able and more willing to address their environmental footprint. It is positive to see that most developing countries in Asia have shown progress. Notable exceptions were the Philippines, which regressed, and India, which scored the lowest and showed no progress.



“Overall, Asia had a higher EPI score than the global average of 44.1.”

Fig. 6: Asia’s Environmental Performance Index by country (out of 100)



Source: Yale University environmental performance index, 2020.

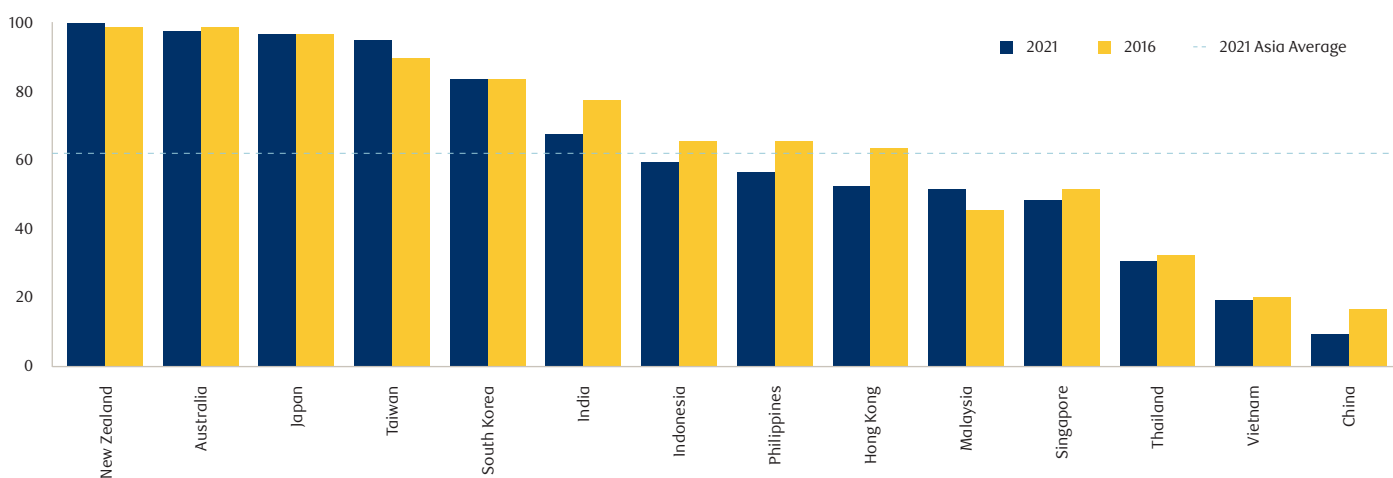
The countries with the most significant improvements include China, Vietnam and Indonesia. For China, the study has shown improvement in controlling the growth of greenhouse gases, including carbon dioxide, and a focus on improving biodiversity. Vietnam has shown progress on tackling climate change and the protection of at-risk species and habitats. Indonesia has shown improvement in carbon intensity and lowering pollution emissions.

The countries with a decline in their environmental score include Singapore and the Philippines. For Singapore, high greenhouse gas emissions per capita was among

the reasons for a decline in the overall score. For the Philippines, the score declined as the country’s biodiversity score fell and the country scored poorly on pollution emissions.

India stands out for high environmental risk. On closer inspection, the poor EPI scores reflect low ratings for air quality and drinking water sanitation. We have seen government investments in sanitation, but much work remains to be done and will require efforts from both the Indian government and the international community.

Fig. 7: Asia’s Freedom in the World Index by country (out of 100)



Source: Freedom House, 2021.

If India’s environmental performance does not improve, this could prove a risk to the country’s long-term economic growth.

Social observations

In Asia and globally, we have seen a deterioration in the political rights and civil liberties of citizens. The average Freedom in the World Index (FWI) in Asia was 61.4 in 2021, a decline over the 2016 average of 64.1. Overall Asia had a slightly higher FWI score than the global average of 56.2, which decreased over the 2016 global average of 58.7.

China has the lowest FWI score in our universe, decreasing from 16 in 2016 to 9 in 2021. Reports continue of predominantly Muslim ethnic minorities being subject to “political re-education” in Xinjiang.¹ India has also seen a decline in its FWI score due to a series of measures that have negatively affected its Muslim populations. This includes unilateral annulment of the semiautonomous status of Jammu and Kashmir, India’s only Muslim-majority state, in 2019. Federal authorities replaced the state’s elected institutions with appointees and abruptly stripped residents of basic political rights.²

Governance observations

The average Corruption Perception Index (CPI) in Asia was 57.4 in 2020, a small improvement over the 2015 average of 56.1. Overall Asia had a slightly higher CPI score than the global average of 43.3, which was slightly up compared to the 2015 global average of 42.6.

We have seen improvements in China, South Korea and Vietnam. Countries that have regressed include New Zealand, Australia and Thailand.

The survey highlighted an improvement in Vietnam. While corruption remains commonplace, citizens have highlighted that the Vietnamese government is taking positive steps to fight it.

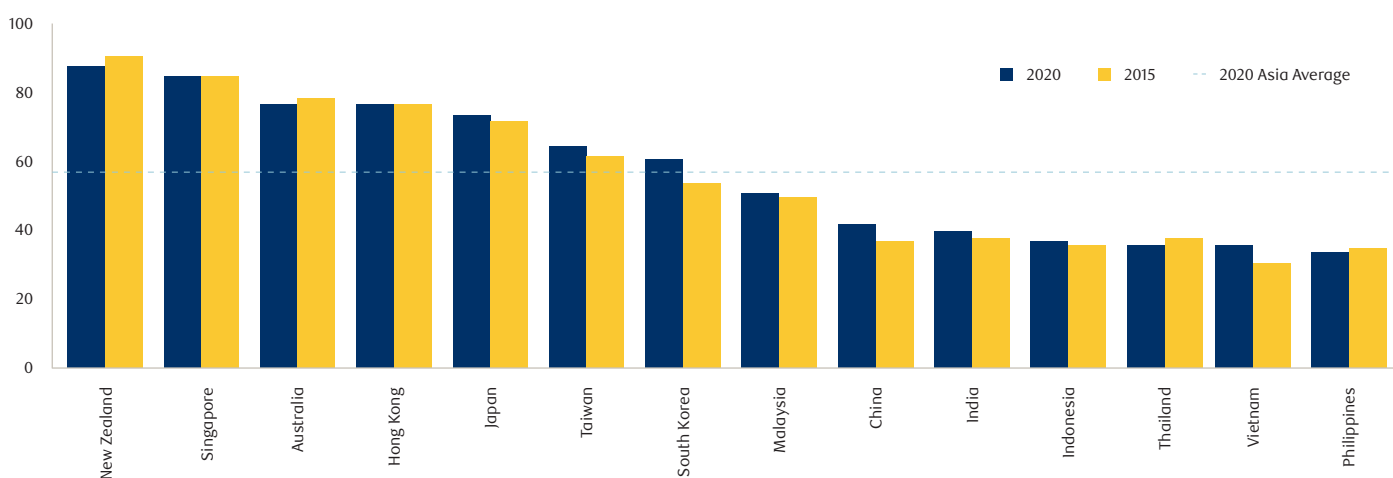
Australia and New Zealand have both seen a small decline in their score, but overall their governments are highly regarded in their efforts to fight corruption and the citizens feel empowered to report cases.

Conclusion

This country analysis highlights that countries with high ESG risk include India (environmental), China (social) and Vietnam (governance). When we meet management teams of companies that are based in, or operate in, these countries, we need to be particularly aware of the specific risks. Countries that have shown improvement include China (environmental), Taiwan (social) and Indonesia (governance).

1 <https://freedomhouse.org/country/china/freedom-world/2020>
 2 <https://freedomhouse.org/country/india>

Fig. 8: Asia’s Corruption Perception Index by country (out of 100)



Source: Transparency International, 2021.

ESG insights

- Capturing Asia's decarbonisation opportunity
- Key sustainability issues for Chinese consumers
- Japan's green journey



Capturing Asia’s decarbonisation opportunity

The increasing impact of climate change is pushing governments and economies around the world to take rapid action. With Asia comprising some 60% of the world’s population and being arguably more exposed to climate risks than any other region, governments are committing to a shift to carbon neutrality and clean energy, giving rise to a compelling investment opportunity.

In 2020, three major Asian economies declared net-zero carbon emissions targets – Japan and South Korea by 2050 and China by 2060. We anticipate these prominent commitments will accelerate the growth of renewable energy across Asia through the development of supply chains, driving down technology costs and attracting international investment interest.

Decarbonisation urgency – Asia is increasingly vulnerable to climate change

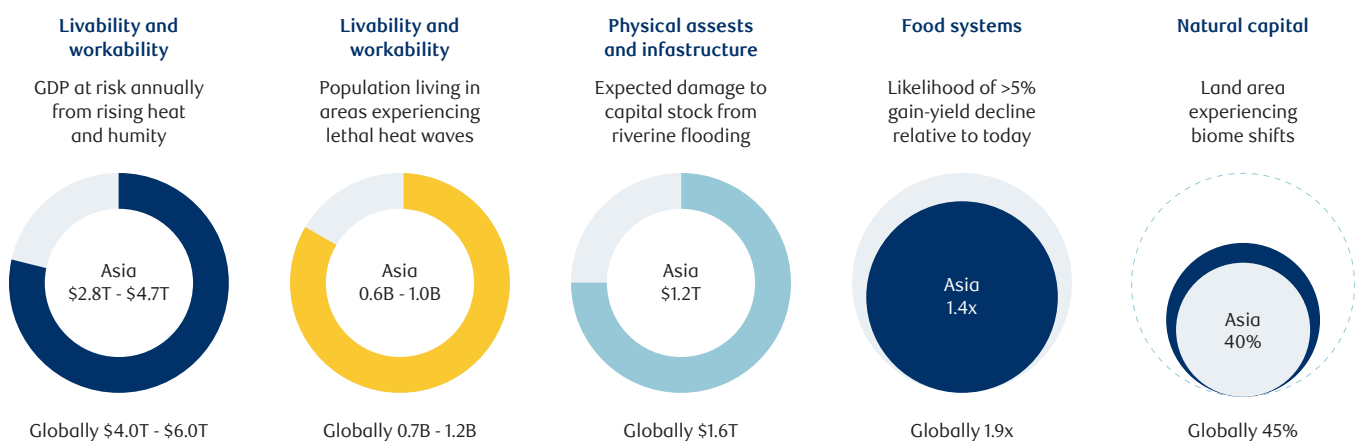
Asia’s share of global greenhouse gas emissions has risen from 25% to 45% over the past 30 years, reflecting its economic development and population increase.³

As it expands, its economies become increasingly vulnerable to climate change, with many low-lying coastal cities exposed to heatwaves, flooding, typhoons and rising sea levels.

By 2050, it is predicted that Asia will account for more than two-thirds of global GDP at risk from outdoor working hours lost due to increased heat and humidity.⁴ Therefore, it’s clear why Asia is embracing decarbonisation and clean energy in the fight against climate change.

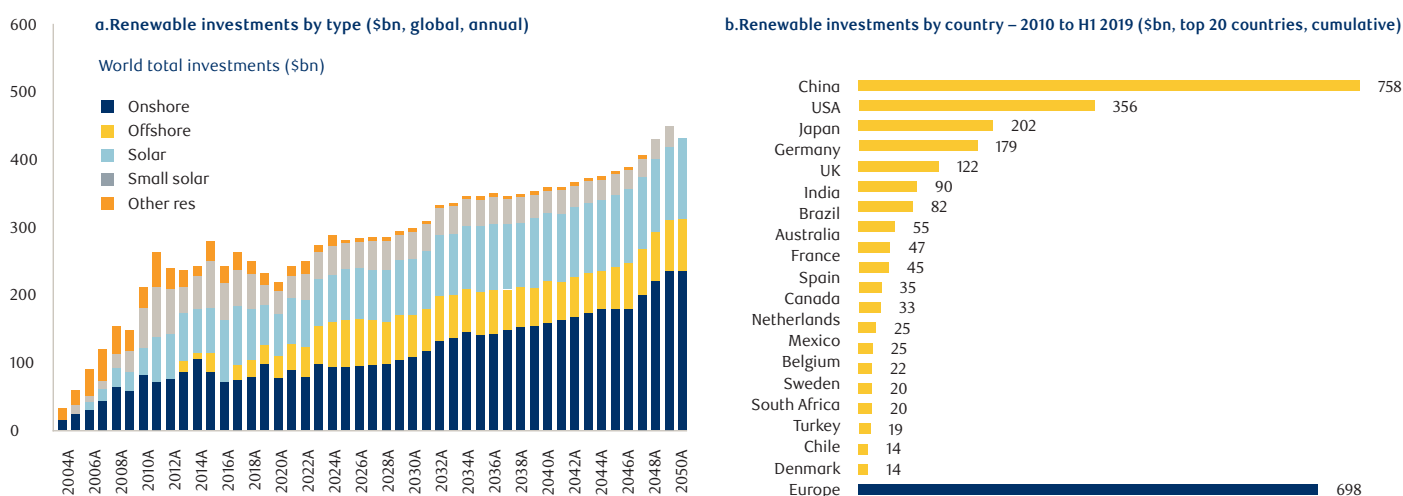
³ McKinsey Global Institute, November 2020.
⁴ McKinsey Global Institute, November 2020.

Fig. 9: Asia is more exposed to climate risks, impacting c.60% of global population



Source: McKinsey Global Institute, Data as at November 2020.

“Governments are committing to carbon neutrality and clean energy, giving rise to a compelling investment opportunity.”

Fig. 10: Asia is leading global investment in renewables

Source: A. BNEF, Bernstein Research, March 2020. Renewables above excludes hydro. Years beyond 2020 are estimates.

Source: B. UN Environment, Frankfurt School-UNEP Centre, BloombergNEF, September 2019. Cumulative data from 2010 to 1H 2019. Does not include forecasts.

Taking Action – What’s Driving Change?

Governments are supporting carbon neutrality

Over 84% of Asia Pacific greenhouse gas emissions come from five of the region’s countries – China, India, Indonesia, Japan and Australia.⁵ Mitigating climate change risks depends on the governments of these five nations committing to decarbonisation targets. Alongside the net-zero targets announced by Japan (2050), South Korea (2050) and China (2060), many other Asian governments have made announcements to reach carbon neutrality in the coming decades.

For example, India – the world’s third-largest emitter of CO₂ – is working on net-zero policies that both lower pollution and CO₂ emissions and create jobs for its growing workforce.⁶ The country is aiming to generate 40% of its power from renewable sources and reduce carbon emitted per unit of output by 33% to 35% by 2030.⁷

Companies are increasing capital investment

Government support has spurred investment into renewable energy sectors. The world invested unprecedented amounts in low-carbon assets in 2020, from renewables to cleaner transport, energy storage to electric heat. The total investment in decarbonisation reached a record \$501.3 billion in 2020⁸ – an increase of 9% on 2019 despite the economic disruption caused by the COVID-19 pandemic.

Over the past decade, China has led renewable energy capacity investment, comprising nearly a third of the global total, while Japan and India ranked the third and sixth largest by investment.⁹ The total global investment in renewables is expected to double by 2050.¹⁰ By 2040, around half of all power investment will be made in Asia, putting the region in a unique position to lead mitigation efforts in the energy sector.¹¹

Technological advancements are seeing breakthroughs

The cost of renewable technologies has fallen dramatically over the last few years, thanks to increased capital investment and R&D. Lower costs help make renewables less reliant on government support and become cost-competitive compared to conventional energy sources.

For example, the levelised cost of onshore wind and solar photovoltaics has already crossed over with the cost of new-build thermal power.¹² Newer technologies, such as offshore wind and concentrating solar power, are expected to follow within a decade.

5 McKinsey Global Institute, November 2020

6 The Carbon Brief Profile: India, March 2019

7 EA India Energy Outlook 2021, 2021

8 Bloomberg, January 2021

9 Global Trends in Renewable Energy Investment 2019, Bloomberg 2019

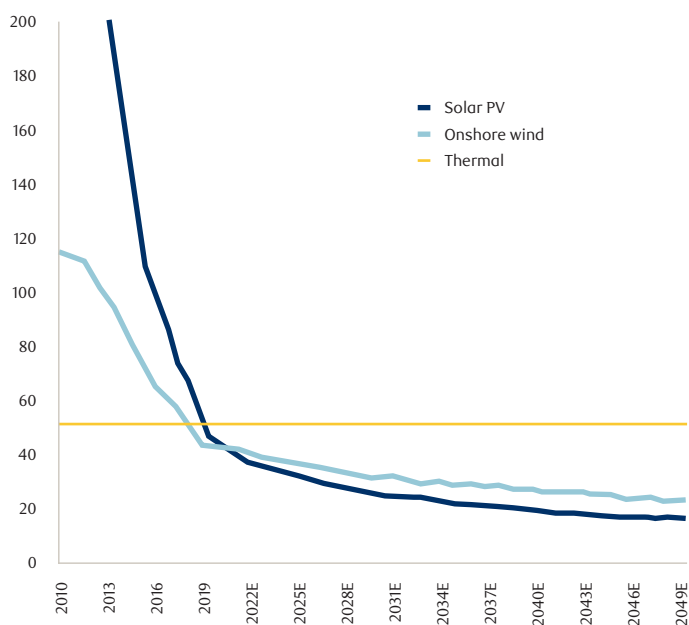
10 Bernstein research estimates, March 2020

11 McKinsey Global Institute, November 2020

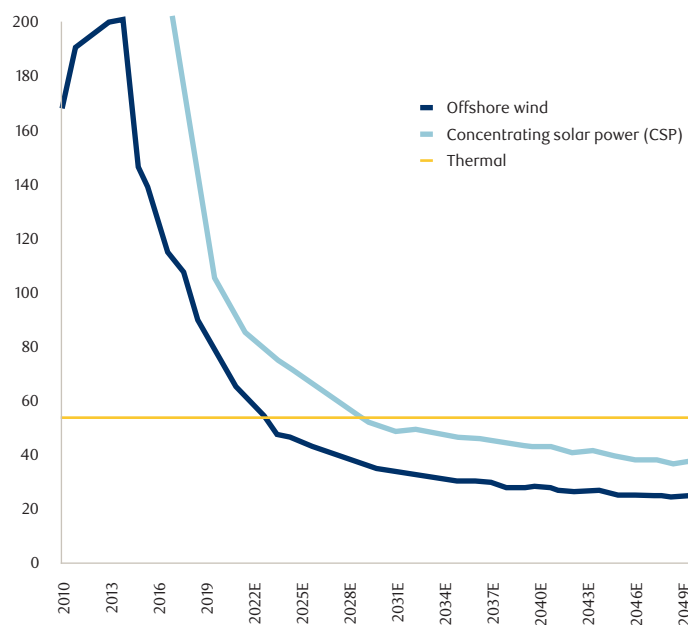
12 Levelised cost of energy (LCOE) represents the average revenue per unit of electricity generated that would be required to recover the costs of building and operating a generating plant during an assumed financial life and duty cycle. LCOE is often cited as a convenient summary measure of the overall competitiveness of different generating technologies. Source: U.S. Energy Information Administration.

Fig. 11: Case study – cost per MWh of solar and wind, compared to thermal

Global avg.LCOE: solar PV and onshore wind (\$/MWh)



Global avg.LCOE: offshore wind and CSP (\$/MWh)



Source: Bernstein Research. Bernstein proprietary global renewables LCOE model, 2020..

Why invest in Asian decarbonisation?

The need for change usually brings with it opportunity. From an investment perspective, we believe the shift towards low carbon and clean energy makes an attractive proposition for equity investors.

Firstly, ESG factors is rapidly becoming one of the most visible and durable megatrends shaping how companies and economies will look in the near future. Investing in this major disruption through leading renewable companies provides unique opportunities to build on both sustainability and capital appreciation. This could also help manage the risk of traditional carbon-intensive businesses getting marginalised as the transition to a lower-carbon economy occurs.

Even within renewables, there are both growth and yield investment opportunities, allowing for a diversified approach. Hydro tends to offer stable and consistent cash yields with low correlation to markets. Solar and wind have higher capex needs but offer more upside from top-line growth and technology improvements. All in all, these companies have outperformed the regional benchmarks significantly and we expect this to continue.

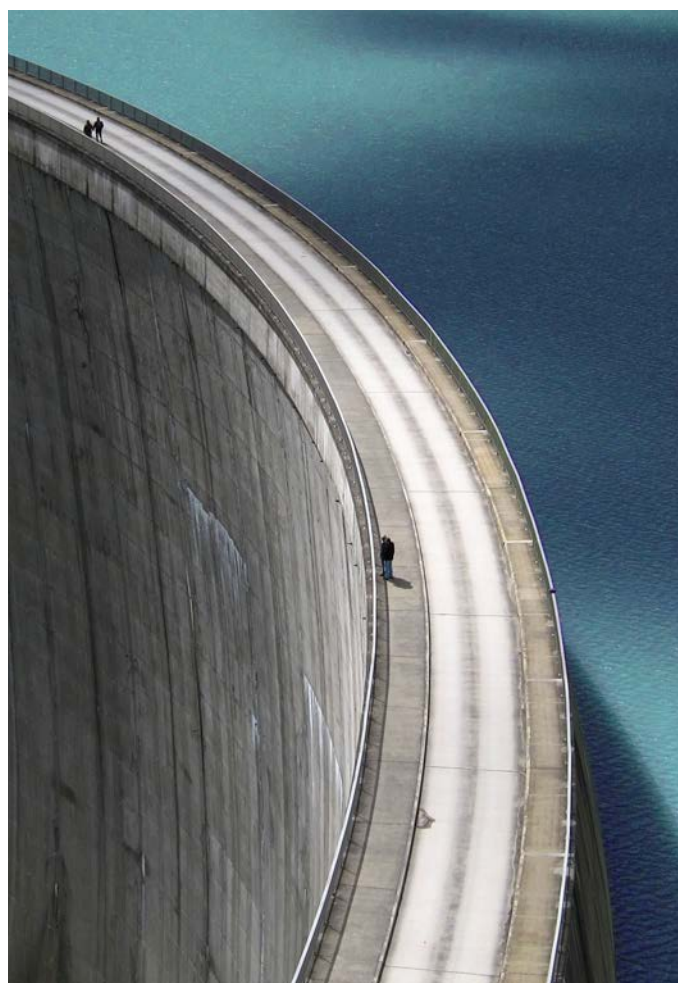
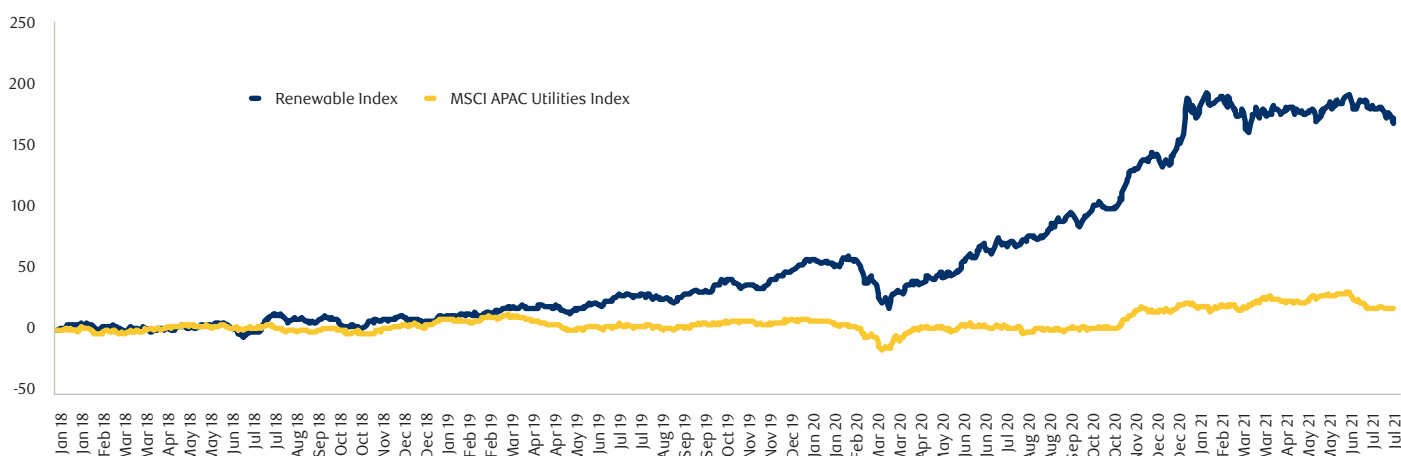


Fig. 12: Renewables sub-index outperforms broader utilities sector index in Asia

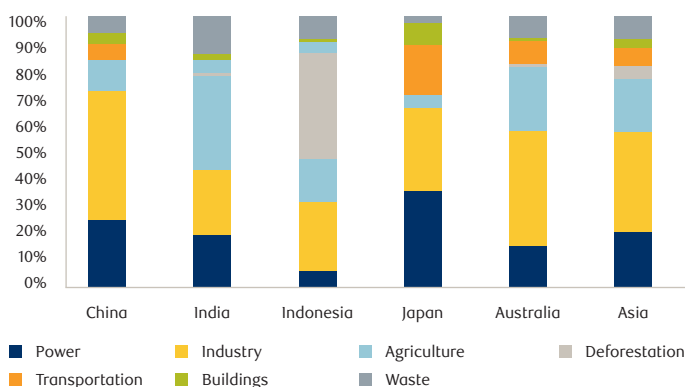


Source: Bloomberg, 5 July 2021. Data from Jan 2018 to June 2021. Renewable sub-index composition: Chubu Electric Power Co; China Longyuan Power Group Corp; Adani Green Energy; Meridian Energy; China Yangtze Power; Mercury NZ Ltd; Energy Absolute PCL; Sichuan Chuantou Energy Co.

Renewables and decarbonisation as investment opportunities

We selected the companies within the MSCI AC Asia Pacific Utilities Index that have more than 60% of revenues from renewable power sources to create a renewable power sub-index. The total return of the renewables sub-index has outperformed the broader utilities index by 164% since 2018, thanks to both robust revenue growth and strong investor interest.

Fig. 13: Greenhouse gas emissions breakdown comparison by country, Asia Pacific, 2016



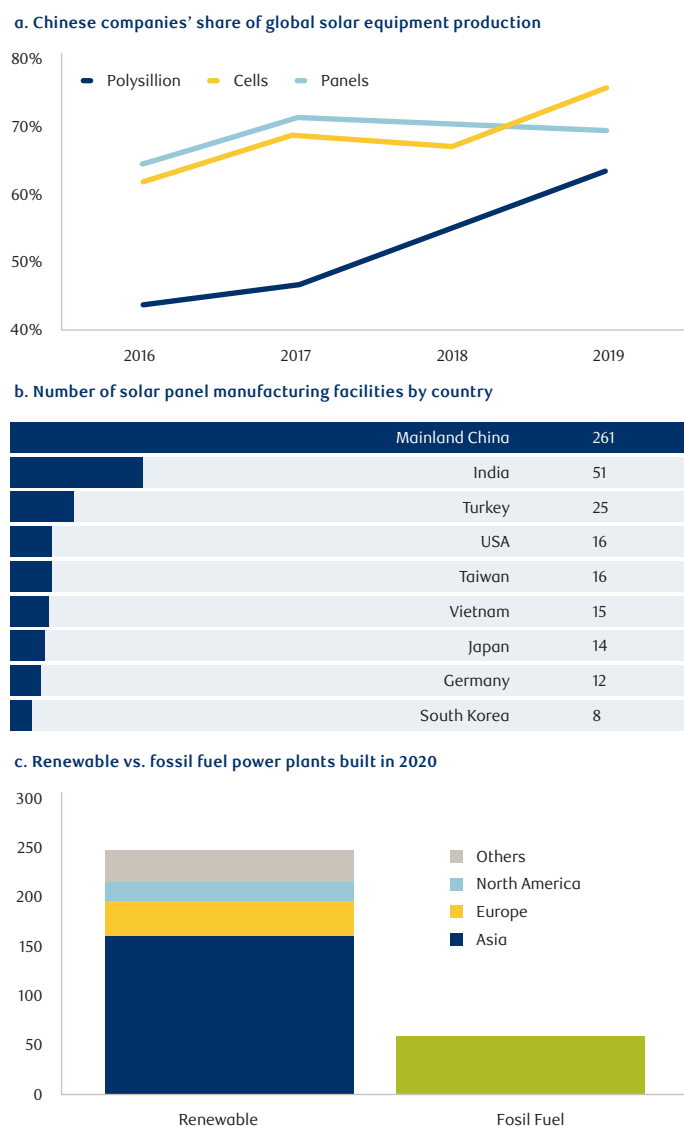
Source: McKinsey Global Institute. Climate Risk and Response in Asia, November 2020. Top 5 countries shown.

13 McKinsey Global Institute. Climate Risk and Response in Asia, November 2020.
 14 EA, Global Energy Review: CO₂ Emissions in 2020. March, 2021.
 15 Bernstein estimates, 2020.

How to capture decarbonisation investment opportunities

Every country within Asia has a different greenhouse gas emissions profile, hence the need for each to have its own strategy and timeline. However, the broader investment opportunities can be summarised according to the four major sources of emission:

1. Power
 2. Industry
 3. Agriculture and deforestation
 4. Transportation and buildings
1. Power, renewables to replace coal-powered energy:
 - Asia’s power sector causes over 20% of regional greenhouse gas emissions and around 90% of Asian power emissions come from coal (compared to 70% globally).¹³
 - As the largest emitter in Asia,¹⁴ China’s government has supported rapid clean-energy development, turning the country into the world’s largest producer of renewable energy, with development supported by state-backed banks providing friendly financing terms.
 - With renewable power facilities rolling out across the country, Chinese renewable energy is expected to grow at an 11% compound annual growth rate between 2019–2030 and make up 35% of the total power sector (rising from 15% in 2020).¹⁵ Two-thirds of renewable power built in 2020 was constructed in Asia.

Fig. 14: Asia is leading investment on a global scale

Source: A. BloombergNEF, September 2020. Source: B. BloombergNEF, Data as at June 2021. Source: C. IRENA, BloombergNEF, 2021.

2. Industry, technological breakthrough and process innovation:

- The industrial sector is the largest producer of greenhouse gases in Asia, accounting for over a third of the region's annual emissions. Steel and cement are the two highest emitting sub-sectors; Asia accounts for some 80% of global CO₂ emissions from steel and cement.¹⁶
- Japan has increased production using scrap electric arc furnaces (EAF) to reduce CO₂ emissions. Hydrogen-based steel production using an EAF, along with carbon capture and storage facilities, has also been developed.

- The commercialisation of new technologies is considered part of a long-term solution for the large-scale decarbonisation of the steel industry.

3. Agriculture and deforestation, low-carbon farming and sustainable forestry:

- Agriculture and deforestation account for nearly 24% of greenhouse gas emissions in Asia. Methane emissions from Asian agriculture account for almost 20% of the global total.¹⁷
- Education and policy will play a major role. The growing middle class may be inclined to shift to an animal protein-based diet but awareness and availability of plant-based proteins is increasing. Improving farming practices and reducing deforestation can also make a significant difference.

4. Transportation and buildings, electrification:

- Transportation and buildings account for 10% of GHG emissions in Asia.¹⁸ Technological advancements in electric and fuel cell vehicles are tackling the issue in transportation.
- China has the largest demand for electric vehicle (EV) batteries and controls 80% of the world's raw material refining, 77% of the world's cell capacity and 60% of the world's component manufacturing.¹⁹
- Japan and South Korea rank second and third for EV battery demand and both countries are leaders in electric and fuel cell battery technologies and component manufacturing.²⁰
- In buildings, space and water heating are the primary emissions contributors. Electrifying these two processes would be the primary decarbonisation driver in Asia.

Our investment strategy

Decarbonisation is creating exciting investment opportunities in Asia. Renewable power capacity is estimated to grow beyond a 10% compound annual growth rate over the next decade and EV sales growth at c.20-30% per year until 2025.²¹

¹⁶ McKinsey Global Institute. Climate Risk and Response in Asia, November 2020.

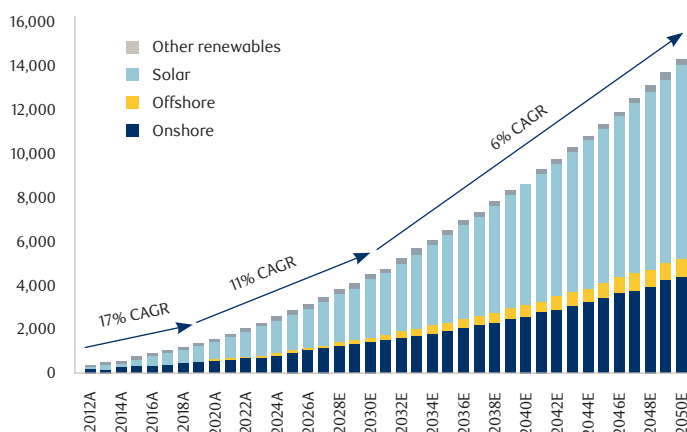
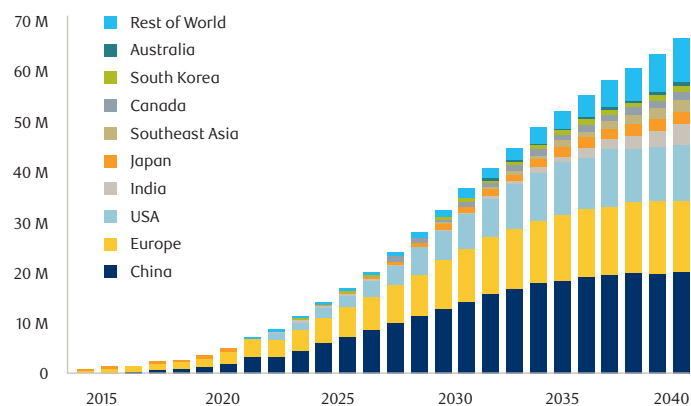
¹⁷ McKinsey Global Institute. Climate Risk and Response in Asia, November 2020.

¹⁸ McKinsey Global Institute. Climate Risk and Response in Asia, November 2020.

¹⁹ BloombergNEF: China Dominates the Lithium-ion Battery Supply Chain, but Europe is on the Rise. September 2020.

²⁰ BloombergNEF: China Dominates the Lithium-ion Battery Supply Chain, but Europe is on the Rise. September 2020.

²¹ Bernstein Research estimate 2020.

Fig. 15: Renewable power and EV penetration are long-term themes ripe for investment**a. World renewable capacity (GW) by type****b. Global passenger EV sales outlook by market**

Source: IEA, BNEF, and Bernstein estimates and analysis, 2020. Note: EVs include battery-electric and plug-in hybrid electric vehicles. Europe includes the EU, the U.K. and EFTA countries.

We believe clean power and the electrification of transportation will be solid investment themes for the coming 5-10 years. In contrast, opportunities in the industrial sector and farming still appear to be in the early stages; higher costs and unclear government policy targets make these more long-dated themes that may develop at a slower pace.

Within the theme, we look for quality businesses with strong management teams, just as we would with any other investment. Vertically-integrated supply chains, strong technological leadership and cost advantages compared to industry peers are examples of competitive edges in these sectors. Strong balance sheets and cash flow, a track record of good capital allocation and return on invested capital are considerations when we assess management teams.

In terms of risks to our investment outlook, political and policy risks are key. A major change of government policy could put the industry's growth at risk as many initiatives depend on government budgets and policy support. Technological innovation is another factor to consider. The energy transition industry is in a period of rapid growth with a high risk of disruption in the form of new technologies and competitive pressure. Technologies that appear attractive today could be replaced by discoveries in the future that have the potential to make the former less profitable or obsolete.

In summary, Asia is a critical part of the global decarbonisation initiative, both in terms of its exposure and its role in driving change. Strong willingness from

governments helps to reduce uncertainty, while disruptive companies are leading the world in technological innovation and investment. We believe investors will benefit from investing in select future winners in Asia's decarbonisation efforts, both from a sustainability perspective and for capital appreciation.



Key sustainability issues for Chinese consumers

Chinese consumers demonstrate a strong level of consciousness around ESG issues and social concerns regarding income inequality, health and the elderly as they report being willing to pay more for environmentally-friendly goods.

CLSA, the Asian broker group, published the findings of a large scale survey of 2,400 Chinese consumers: the results are incorporated into this report. The survey canvassed Chinese people from different age groups, income levels and locations, shedding light on what ESG means to them.

Implications for stakeholders

The survey highlighted that the Chinese government has broad support from the general population for ESG-related policy drives. Corporates need to be aware of ESG risks in order to maintain their brand equity. If there are higher costs associated with achieving ESG goals, consumers are on the whole willing to pay extra for products they view as being sustainable. Institutional investors have support from retail investors in their push for better corporate governance, boding well for responsible investing in China.

Environment: reducing pollution is the top priority, consumers are willing to pay more

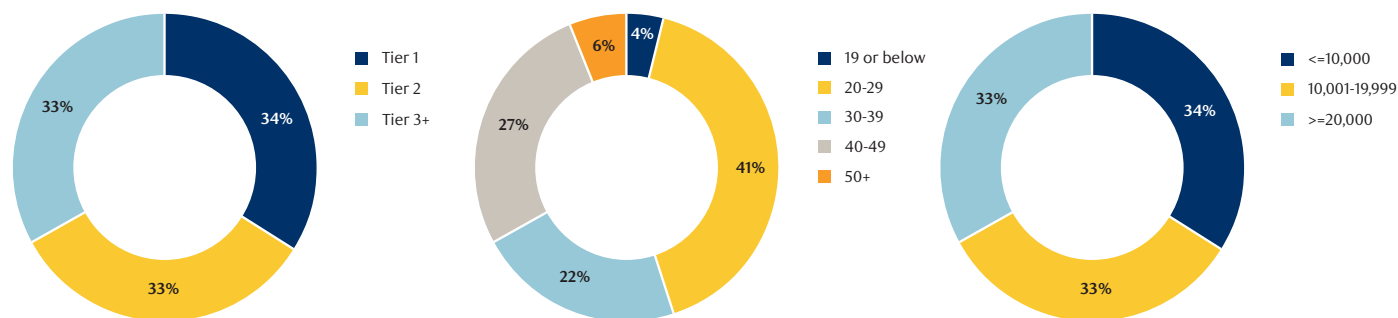
According to the survey, concerns about environmental issues such as climate change and pollution have

Executive summary

- The survey shows that Chinese consumers have strong awareness of environmental and social issues.
- Environmental concerns around climate change have increased over the past two years, with preferences for green transportation, organic food and environmentally-friendly housing.
- Social concerns are around income inequality, health and care for the elderly.
- Only 35% of survey respondents are aware of corporate governance, while 69% of respondents are aware of ESG and sustainable investing.

increased over the past two years. This has led to a change in consumption habits. Consumers are willing to pay more for sustainable products. In addition, Chinese consumers are demanding that the government takes an active role in addressing climate change issues.

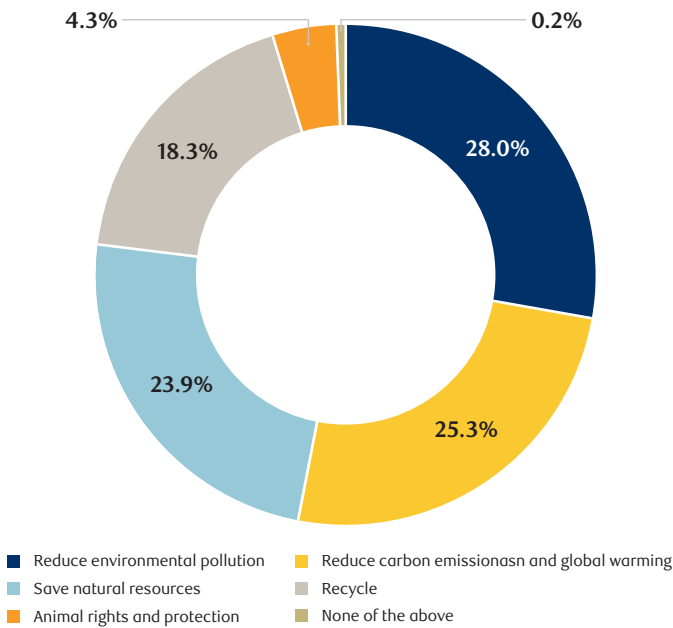
Fig. 16: City tier distribution / Age Mix / Income distribution (in CNY)



Source: CLSA China Reality Research, February 2021 China consumer survey.

Chinese consumers are already taking action to address climate change. The survey highlighted that 77% will buy environmentally friendly goods and services, and 57% will use electric bikes and vehicles.

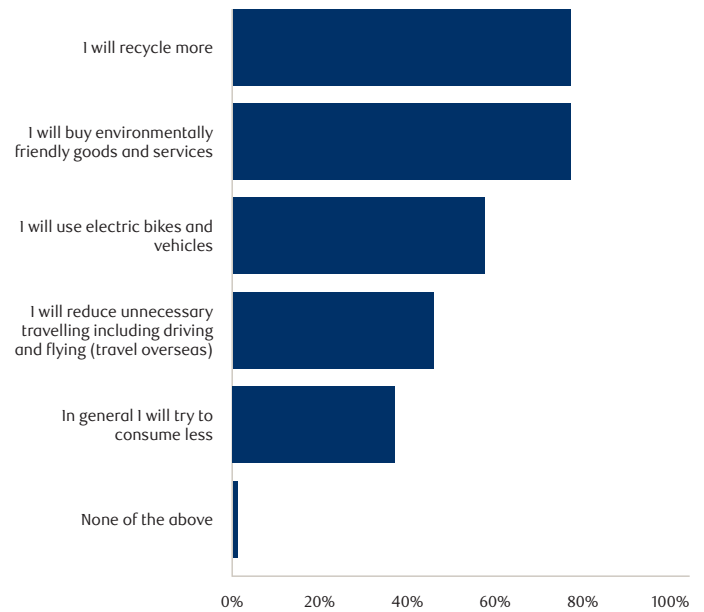
Fig. 17: Which sustainable development topic are you most interested in?



Source: CLSA China Reality Research, February 2021 China consumer survey.

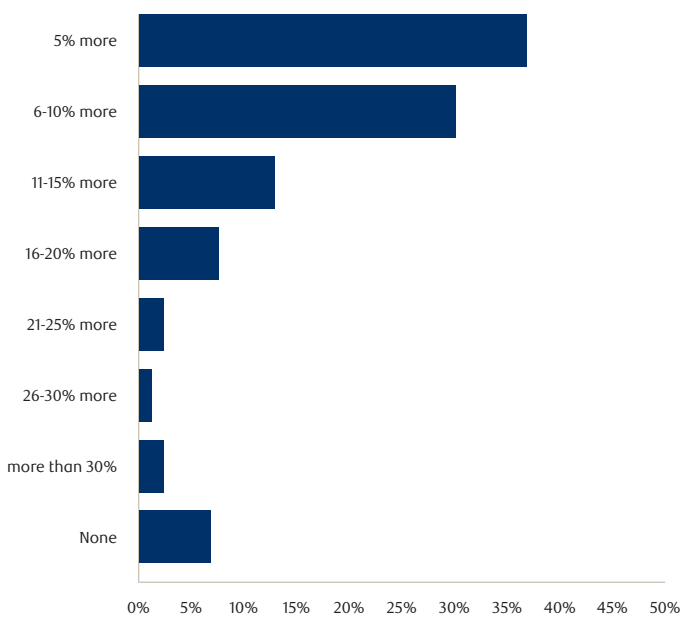
In terms of the price premium that consumers are willing to pay for environmentally-friendly services and goods, 67% put the figure in the 5 to 10% range, with 20% willing to add 11 to 20%.

Fig. 18: What kind of actions will you take in order to help?



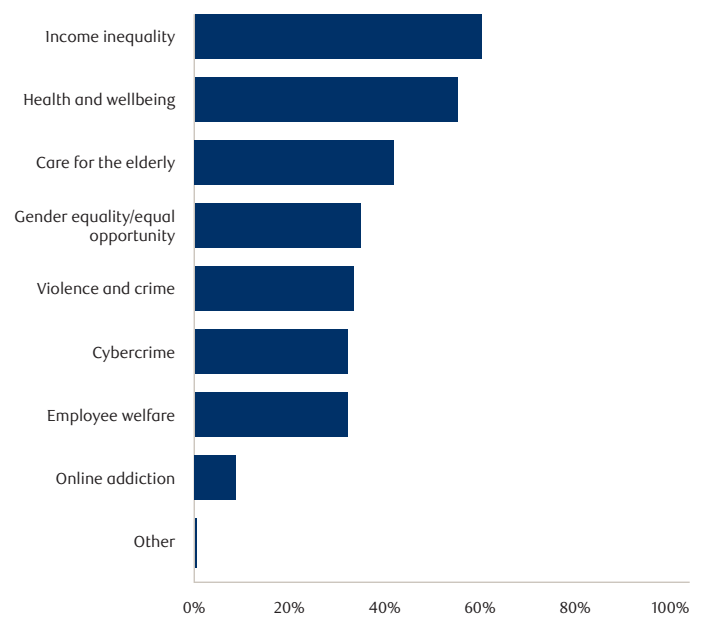
Source: CLSA China Reality Research, February 2021 China consumer survey.

Fig. 19: How much extra cost are you willing to pay for a product if it is organic or environmentally friendly?



Source: CLSA China Reality Research, February 2021 China consumer survey.

Fig. 20: What are the three most important social issues that need to be addressed by the government?

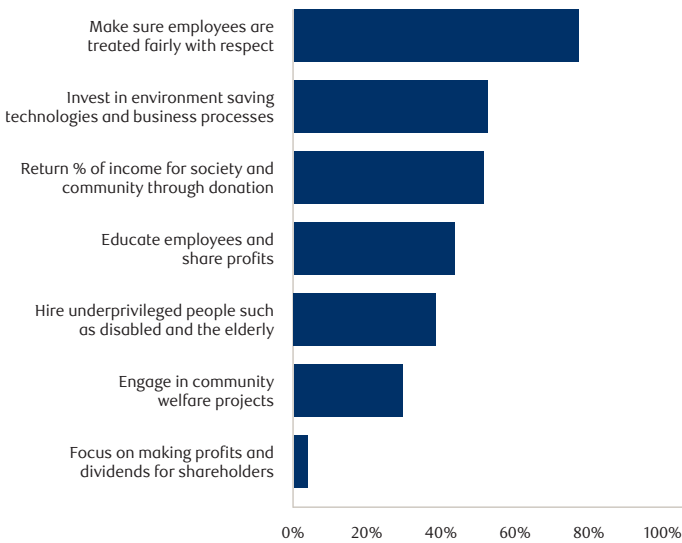


Source: CLSA China Reality Research, February 2021 China consumer survey.

Social concerns: income inequality, health and the elderly

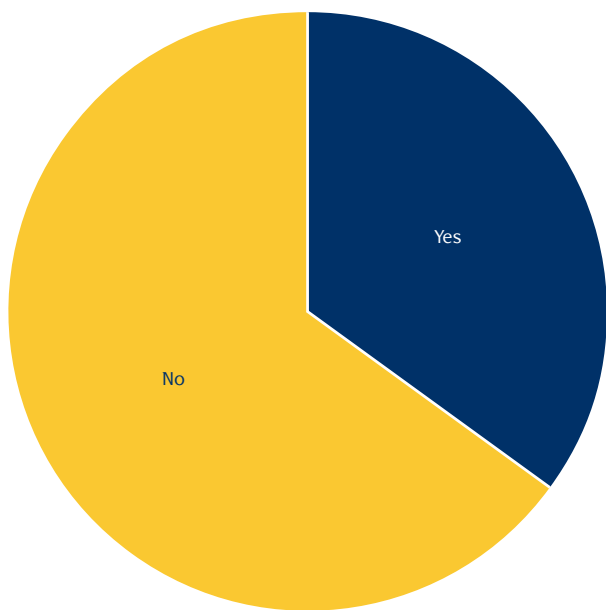
Participants were asked what they thought were the most important social issues to be addressed by government policies.

Fig. 21: What are the top three things companies need to do to be socially responsible?



Source: CLSA China Reality Research, February 2021 China consumer survey.

Fig. 22: Are you aware of the concept of corporate governance?



Source: CLSA China Reality Research, February 2021 China consumer survey.

They chose income inequality (61%), health and wellbeing (56%) and care for the elderly (42%) as the top three.

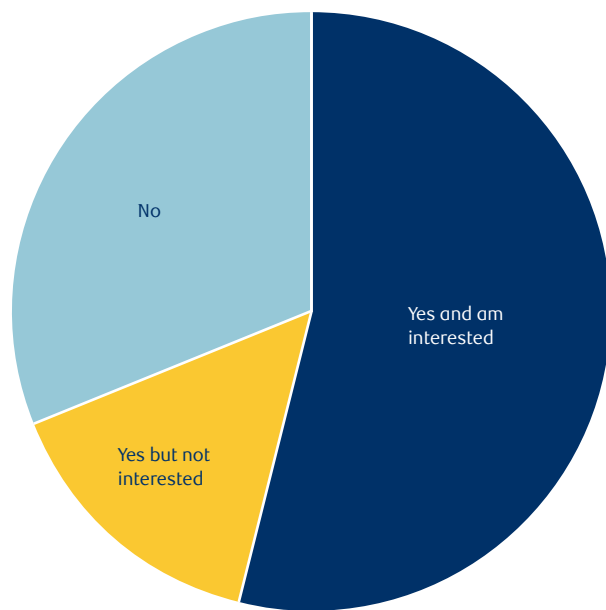
Participants were also asked what companies should be doing to prioritise social issues. Respondents chose “treating employees fairly and with respect” as the top priority, followed by investing in environment-saving technologies and business processes, and returning a percentage of income to society and the community through donations.

Corporate governance: lower awareness compared to the environmental and social pillars

65% of respondents answered that they were not familiar with the concept of governance. That said, awareness of the term ESG, or sustainable investing, was higher than for governance, with 69% of respondents answering that they were aware of ESG investing.

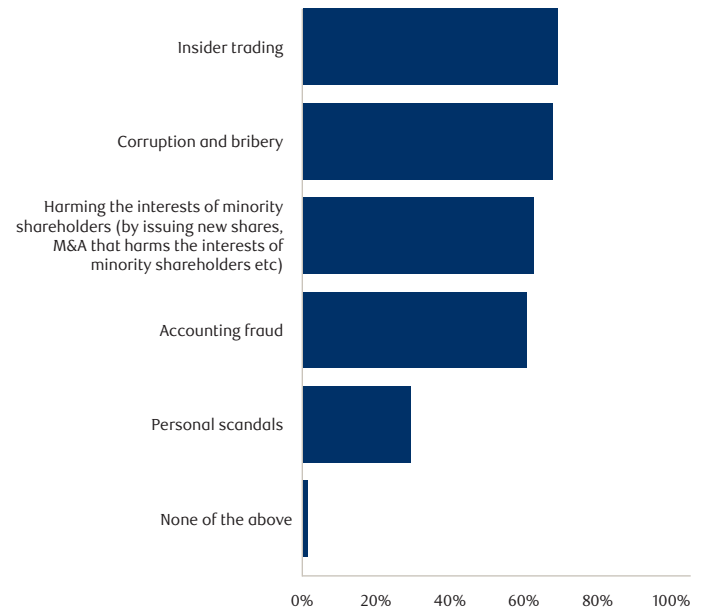
Although 65% of respondents said that they were not aware of corporate governance, governance-related concerns do have a significant impact on their buying decisions. 70% of the respondents would boycott a company’s products or services if management were involved in insider trading, followed by corruption and bribery (68%) and the harm of minority shareholder interests (63%).

Fig. 23: Are you aware of ESG or sustainable investing?



Source: CLSA China Reality Research, February 2021 China consumer survey.

Fig. 24: Which of the following problems in a company's management would lead you to stop buying its products or services?



Source: CLSA China Reality Research, February 2021 China consumer survey.

Conclusion

The survey highlights a strong level of consciousness around ESG issues among typical Chinese consumers. These issues are already feeding into responsible investing strategies. The results reveal a number of implications for stakeholders in ESG. They highlight that the government and its regulators need to take action in response to the demands of the general population.

Chinese consumers are environmentally and socially aware, and are willing to pay more for environmentally-friendly goods.

The results also suggest that corporates need to be vigilant in managing ESG risks, in order to maintain brand equity and attract consumers. While corporate governance awareness has room to improve, investors will boycott a company if management was involved in insider trading or corruption.

“The government and its regulators need to take action in response to the demands of the general population.”

Japan's green journey

Japan's competitive edge in renewable technologies can help it overcome the unique challenges it faces in its transition to a net-zero carbon economy.

In 2020, Japan announced its plan to achieve carbon neutrality by 2050. As the world's fifth-biggest greenhouse gas emitter, the government set a goal to reduce emissions by 46% from 2013 levels by 2030.²²

The Green Growth Strategy aims to create a positive cycle of economic growth and environmental protection. It sets goals in 14 fields with high growth potential (Fig. 25), identifies current challenges and outlines action plans to solve them, including budgets, taxes and regulatory reforms.

We expect increased investment by government, businesses and households to change Japan's energy mix in the coming years. The government estimates total investment at about 290 trillion yen (USD2.5 trillion), providing employment opportunities for about 18 million people (14% of the population).²³

Japan's emission profile

The power sector is Japan's biggest source of emissions, accounting for 37% of carbon emissions in 2018 (Fig. 27). Japan's dependence on fossil-fuelled power generation increased after the Fukushima nuclear power plant accident in 2011. Since then, nuclear power's contribution to Japan's annual electricity supply has decreased from 30% to less than 7%. Coal power now accounts for 30% of the energy mix, a 5% increase from 2010.²⁴

The country's power sector is more dependent on fossil fuels than other developed economies, due to Japan's lower renewables potential. For instance, its deep coastal waters make it difficult to install offshore wind turbines, and its mountainous terrain limits open space for onshore wind and solar farms.

²² <https://thediplomat.com/2021/11/japan-pledges-support-for-asia-wide-decarbonization/>

²³ <https://sponsored.bloomberg.com/article/jco/charting-the-path-to-net-zero-with-japanese-innovations>

²⁴ https://www.meti.go.jp/english/policy/energy_environment/global_warming/ggs2050/index.html

Fig. 25: 14 growth sectors specified by Japan's Green Growth Strategy

Energy-related Industries	Transportation/ Manufacturing-related Industries	Home/Office related Industries
Offshore Wind/Solar/Geothermal Power	Automobile/Battery	Semiconductor/Information and Communication
Hydrogen/Fuel Ammonia	Shipping	Logistics, People Flow, and Civil Engineering Infrastructure
Next-generation Heat Energy	Food, Agriculture, Forestry and Fisheries	Aircraft
Nuclear	Carbon Recycling/Material	Housing and Building Next generation Power Management
		Resource Circulation-related
		Lifestyle-related

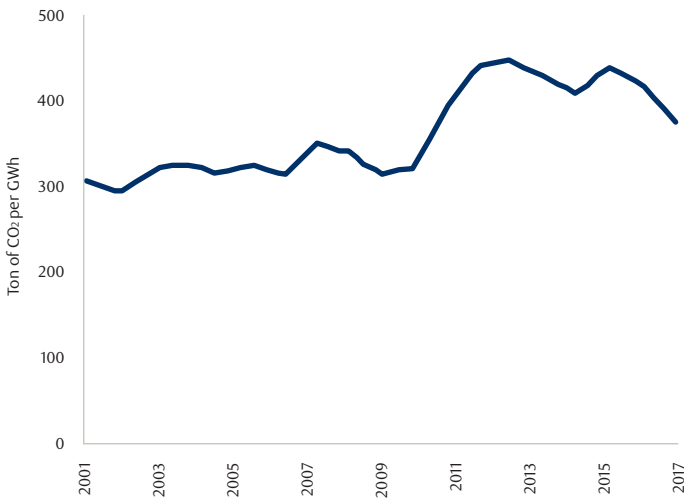
Source: Bloomberg, Walk the Talk to Green: Finance, Innovation, and Sustainability from Japan. Data as at 2021.

Fig. 26: Investment in Japan's Green Strategy

Private sector	2021-2023	2021-2030
Chemical	7.0	14.6
Oil and coal products	2.2	31.6
Primary metals	0.1	2.1
Machinery	10.9	36.2
Electronic components	1.6	6.6
Electric machinery	7.6	25.4
Autos & auto parts	10.3	48.2
Other products	2.7	4.4
Utility	8.5	29.2
Wholesale and retail	0.3	1.0
Transportation	1.6	5.8
Real estate	0.5	3.7
Total amount of private Capex	53.2	208.8
Housing investment	1.3	7.3
Total	54.5	216.0

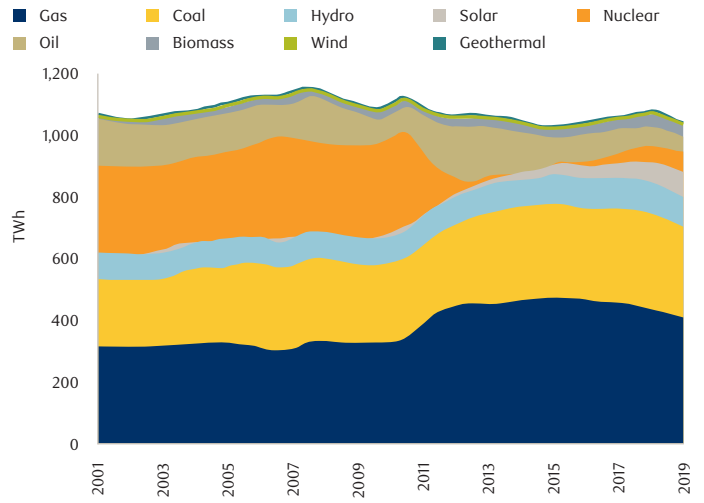
Source: METI, MoE, MLIT, Cabinet Office, J.P Morgan estimate. Data as at 2021.

Fig. 27: Historical CO₂ emissions intensity for power



Source: Japan Ministry of Economy, Trade and Industry. Data as at 2020.

Fig. 28: Historical annual power generation in Japan



Source: Japan Ministry of Economy, Trade and Industry. Data as at 2019.

As a result, offshore wind is seen as key to reducing dependence on fossil fuels, along with hydrogen, ammonia and carbon capture and storage (CCS).

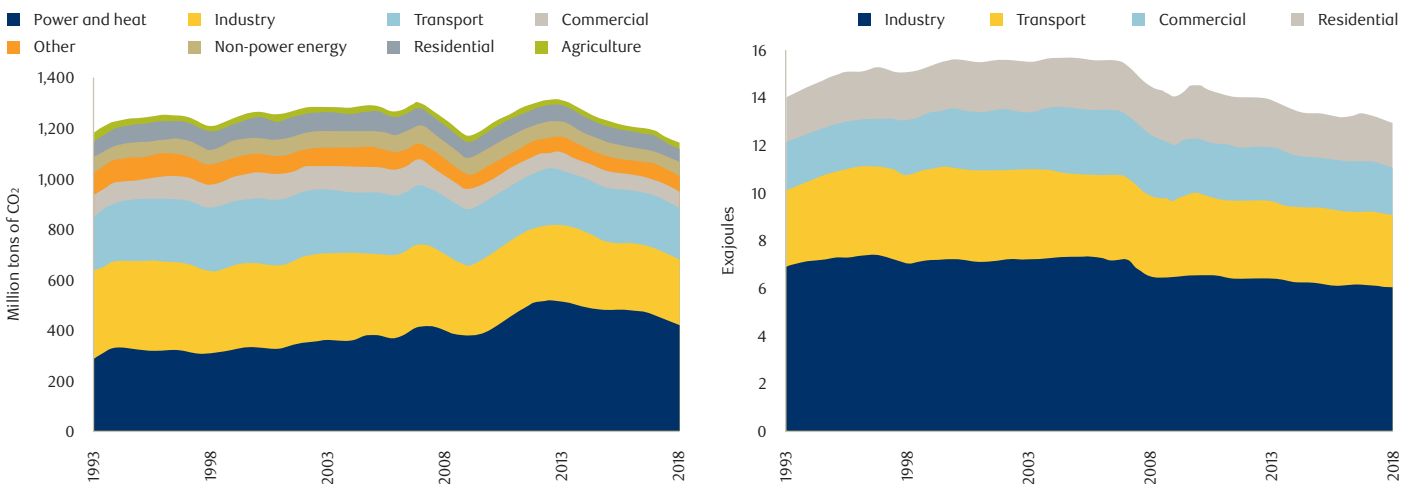
According to the government’s energy plan, renewable energy should make up more than a third of the nation’s power generation by 2030.²⁵ Nuclear power will more than double, while liquefied natural gas is slated to fall roughly 50% by the end of the decade. The use of coal should also fall by about 40%.

Industry accounts for 23% of Japan’s total emissions, the second biggest source of emissions. The iron and steel sector is the largest emitter, accounting for over half of industrial emissions. Steel production emissions have declined by 8% since peaking in 2013, due to improved energy efficiency and the use of electric arc furnaces. Companies are now seeking to commercialise technologies such as CCS and hydrogen to further reduce emissions.²⁶

²⁵ <https://www.bnef.com/login?r=%2Finsights%2F24563%2Fview>

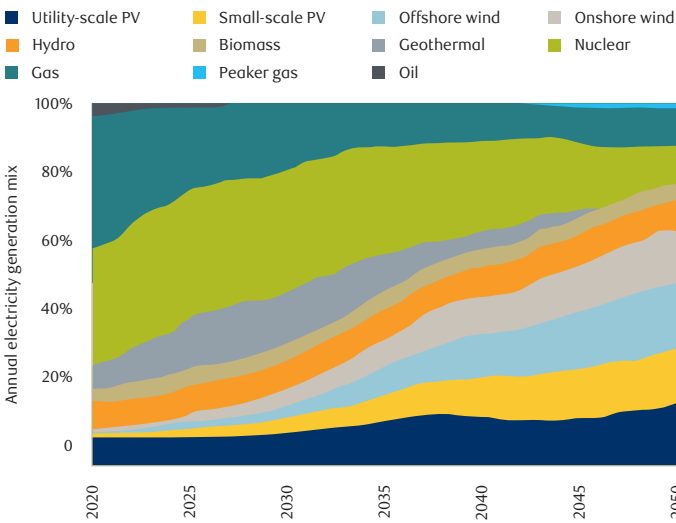
²⁶ <https://www.bloomberg.com/news/articles/2020-12-15/japan-to-lift-offshore-wind-capacity-fourfold-in-decade-to-2040?sref=WvIXLrW0>

Fig. 29: Japan’s CO₂ emissions & final energy consumption by sector



Source: Emissions data from Japan National Institute of Environmental Studies; final energy consumptions data from Japan Ministry of Economy Trade and Industry. Data as at 2019.

Fig. 30: BNEF's Japan electricity outlook



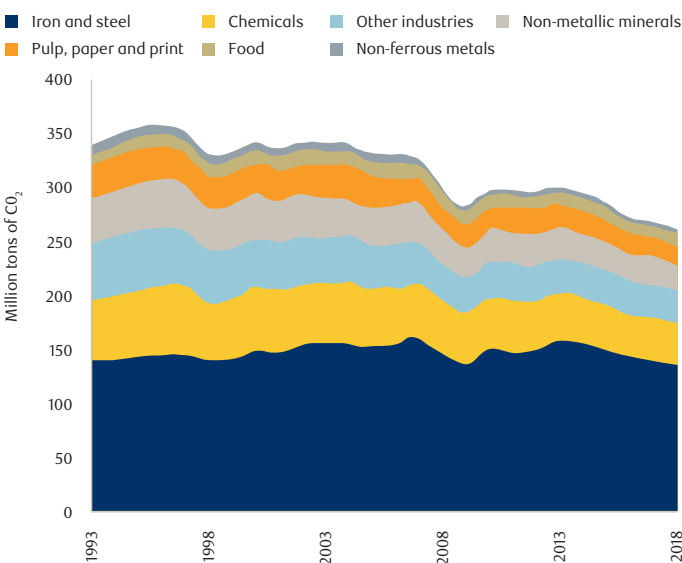
Source: BloombergNEF New Energy Outlook 2019, Japan Ministry of the Environment. Note: the BNEF 2050 outlook values refer to the capacity values under the economic transition scenario. Data as at 2019.

Fig. 31: Japan's forecast

Energy	FY2030 (revised)	FY2030 (previous)	FY2019
Renewables	36%-38%	22%-24%	18%
LNG	20%	27%	37%
Coal	19%	26%	32%
Oil	2%	3%	7%
Nuclear	20%-22%	20%-22%	6%
Hydrogen/Ammonia	1%	0%	0%

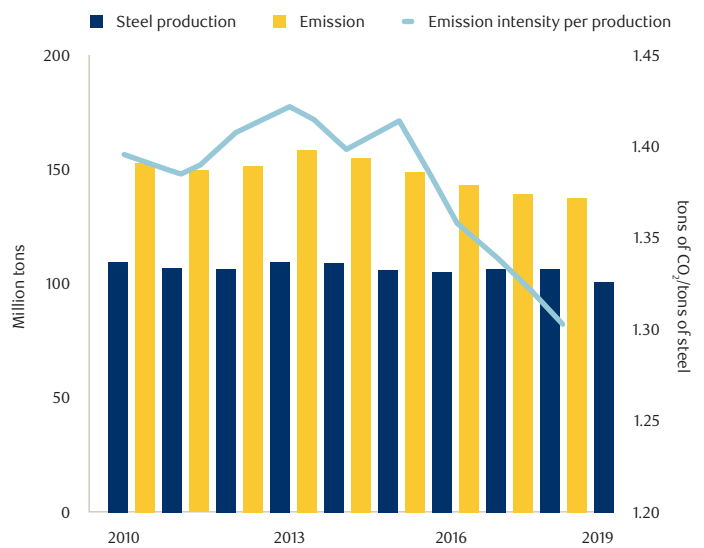
Source: BloombergNEF, Japan Seeks to Aggressively Cut Fossil Fuel, Lift Renewables. Data as at July 22, 2021.

Fig. 32: Japan industry sector emissions



Source: Japan National Institute of Environment Studies. Data as at 2018.

Fig. 33: Emissions intensity of steel production in Japan



Source: Japan National Institute of Environmental Studies, Japan Iron and Steel Federation Note: Emissions data is available to 2018.

Transport accounts for 18% of Japan's carbon emissions, with cars making up 49% of that total. To decarbonise the sector, the Green Growth Strategy called for all new passenger vehicle sales by 2035 to be electric (including hybrids) or fuel-cell vehicles. The aggressive target would provide an economic opportunity for Japanese automakers who are faced with declining domestic demand due to a shrinking population.

Honda announced that it will increase zero-emission vehicle sales to 40% in developed markets including Japan by 2030, while by 2040 it will phase out petrol and diesel vehicle sales everywhere.²⁷ Toyota will launch 15 battery electric models by 2025. The company also set a goal of achieving carbon neutrality for its factories by 2035.

²⁷ <https://sponsored.bloomberg.com/article/jco/5-ways-japan-is-accelerating-global-decarbonization-efforts?sref=WvIXLrwo>

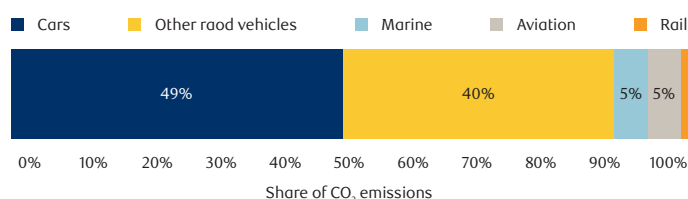
Private sector commitment

Japan’s businesses are increasingly committed to more sustainable practices. More than 50 private Japanese companies have signed the RE100, a global pledge to use 100% renewable electricity (target dates vary by company). After the US, Japan has had the highest number of companies sign the pledge.

Japanese companies are also leading the world in supporting the Task Force on Climate-related Financial Disclosures (TCFD), an international framework created by the Financial Stability Board (Fig. 35). The TCFD recommends how companies and institutions should disclose their climate-related financial information, including risks and opportunities.

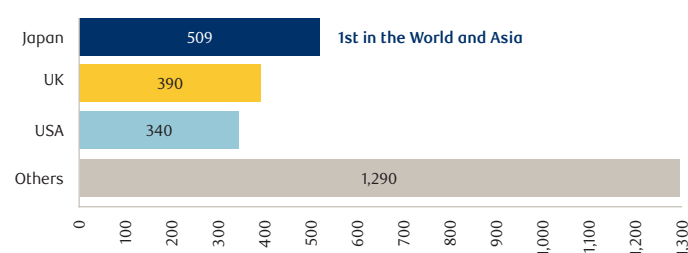
Over 2,500 companies from around the world have embraced the framework, more than 500 of them Japanese. From April 2022, listed companies on the Prime Market of JPX will be required to disclose information based on the TCFD recommendations or an equivalent framework.

Fig. 34: Japan’s transport CO2 emissions in 2018



Source: Japan National Institute of Environmental Studies. Data as at 2018.

Fig. 35: Number of companies supporting then TCFD



Source: Japan National Institute of Environmental Studies. Data as at 2018.

“More than 50 private Japanese companies have signed the RE100.”

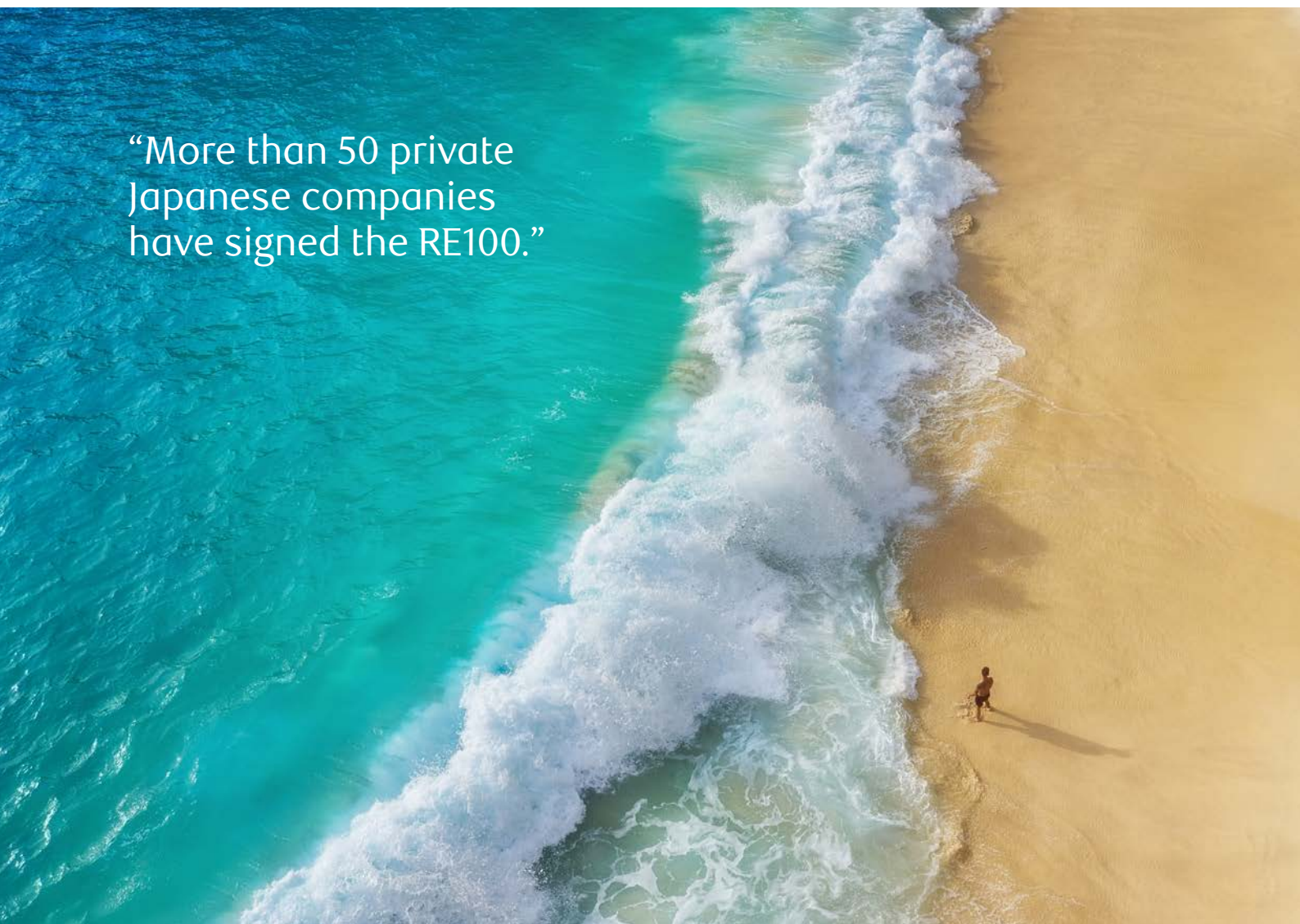
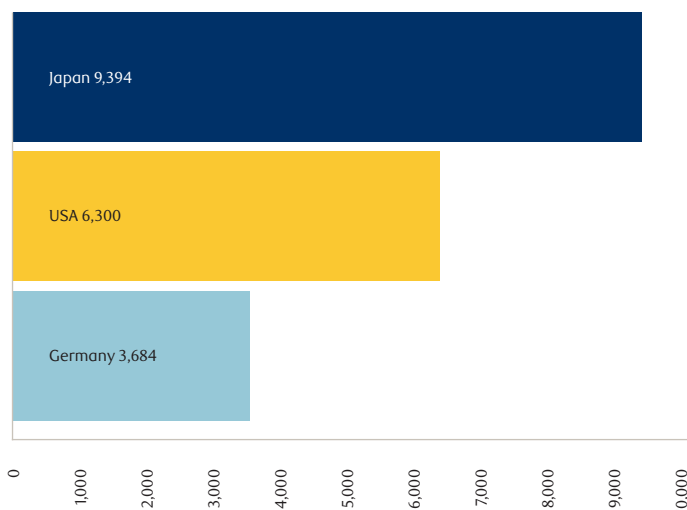


Fig. 36: Total renewable energy patents filings (2010-2019)

Source: BloombergNEF New Energy Outlook 2019, Japan Ministry of the Environment. Note: the BNEF 2050 outlook values refer to the capacity values under the economic transition scenario. Data as at 2019.

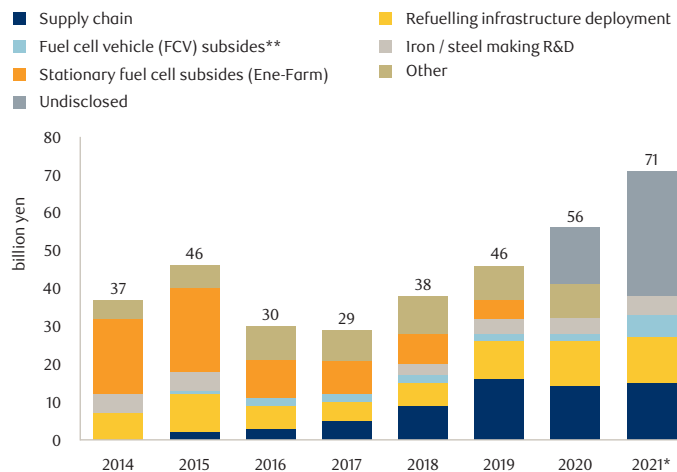
Japan leads on renewable tech

Innovative technologies are vital to achieve the universal goal of net-zero carbon emissions and Japan is leading the field. It has the most renewable energy international patent applications under the Patent Cooperation Treaty (PCT) in the world. Between 2010 and 2019, Japan filed 9,394 patent applications relating to solar, fuel cell, wind and geothermal technologies (Fig. 36). It also leads patent filings for battery technologies, accounting for roughly one-third of the global total in 2018.²⁸

Japan has also been a leader in the race toward a hydrogen economy (Fig. 37). It has 137 hydrogen refuelling stations – the world’s largest network – and has been developing hydrogen mobility for a decade. Japan aims to increase the number of fuel cell vehicles on the road from 3,800 currently to 800,000 by 2030.²⁹

Risks and challenges

Given limited solar and wind capacities in Japan, renewables can ultimately comprise only 60% of its power mix.³⁰ That means it needs to rely on more expensive technologies, such as low-carbon hydrogen and CCS, to decarbonise its power sector. Moreover, its lack of abundant zero-carbon electricity for domestic hydrogen production means higher hydrogen costs. Raising the share of renewable energy in the energy mix will also require

Fig. 37: Japanese government funding exclusively for hydrogen and fuel cells

Source: BloombergNEF based on annual METI budget allocation. Note value include budget exclusively allocated to hydrogen and fuel cells. Years are fiscal years from April to March. *2021 numbers are draft and may change. **FCV subsidies are based on multiplication of FCV sales by subsidy allocation per vehicle; 2020-21 values are based on our FCV sales forecast. Data as at 2021.

a substantial expansion of the power grid and storage capacity, pushing costs higher. In addition, the country’s stance on restarting and expanding nuclear power facilities is still uncertain. Lastly, reducing greenhouse gases in all sectors of the economy will require an increase in energy efficiency through innovation or changes in the industrial structure, which require extensive investments.

Investment implications

Japan’s decarbonisation target provides an opportunity for Japanese companies to get ahead of global competition and develop technologies and business models that can succeed in a decarbonised world. Several businesses have already launched strategies to commercialise new technologies such as hydrogen and CCS. They include Tokyo Gas, the country’s largest city gas company; Eneos, the largest integrated oil company; and Nippon Steel, the largest steel producer.

Japan’s auto and tech industry, including companies such as Toyota and Toshiba, will benefit through accelerated demand for products such as battery electric vehicles and electrolysers.

28 <https://www.bnef.com/login?r=%2Finsights%2F26773%2Fview>

29 <https://www.bnef.com/login?r=%2Finsights%2F24555%2Fview>

30 International Energy Agency Japan 2021, March 2021.

ESG case studies

- Asia: Macquarie Group – recognising ESG’s importance to stakeholders
- China: Meituan – helping people eat better, live better
- Japan: Sony Group – initiatives towards a sustainable society



Asia: Macquarie Group

Recognising ESG's importance to stakeholders

Macquarie Group (“Macquarie”) is a global financial services group in fields including asset management, retail and business banking, wealth management, leasing and asset financing, commodity trading, renewables development, capital raising and principal investment.

Macquarie recognises the importance of sound ESG practices as part of its responsibility to stakeholders.

It has been recognised as a leader in environmental and social financing. It has over 12,000 Megawatts and £10 billion of renewable energy assets in operation or under management, and over 12% of total funded loan equity investments exposed to renewable energy.³¹

Macquarie's ESG approach is structured around eight focus areas:

1. Managing environmental and social risk (ESR)
2. Business conduct and ethics
3. People and workplace
4. Sustainability in direct operations
5. Environmental and social financing
6. Client experience
7. Community
8. Climate change

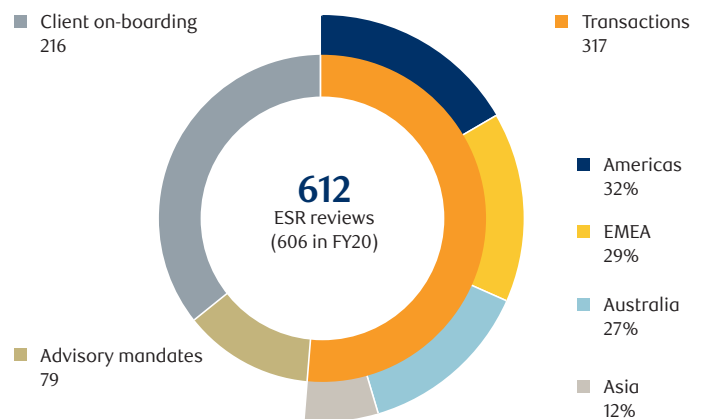
1. Managing environmental and social risk (ESR)

Macquarie recognises that failure to manage ESG risks could affect communities, the environment and other external parties, and expose the organisation to commercial, reputational and regulatory impacts.

Macquarie has an ESR policy which provides escalated decision-making and approval processes, alongside the credit approval process, for material environmental and social risks. Transactions with material environmental and social risks are referred to the chief risk officer and may be escalated to the Executive Committee or Macquarie Board. Fig. 38 provides details on transactions that have been referred to the chief risk officer.

³¹ Macquarie Group Annual report 2021.

Fig. 38: ESR Policy referrals



Source: Macquarie Group ESG report 2021.

2. Business conduct and ethics

The company is committed to conducting business in accordance with all applicable laws and regulations and in a way that enhances its reputation in the market. Macquarie has established, and is focused on maintaining, an effective risk culture that drives good conduct. This is supported by a framework of policies, controls, processes and reporting mechanisms to manage compliance, legal, reputation and operational risks.

3. People and workplace

Macquarie recognises that its most important assets are its employees. Its focus is on attracting, engaging, developing and retaining talented individuals, providing opportunities for career-long learning and development, and providing safe workplaces within an inclusive culture that values diversity.

Fig. 39: The proportion of women employed globally at Macquarie over the last five years.

As at 31 March	2017	2018	2019	2020	2021
Board of Directors	33.3%	30.0%	36.4%	36.4%	45.5%
Executive Committee	25.0%	25.0%	25.0%	27.3%	27.3%
Division Head	21.6%	23.5%	23.9%	24.6%	23.0%
Senior Executive	15.6%	17.2%	19.1%	19.9%	20.5%
Macquarie Workforce	39.2%	39.8%	40.1%	41.0%	42.0%

Source: Macquarie Group diversity and inclusion report 2021.

4. Sustainability in direct operations

Since 2010, Macquarie has reduced its energy use and maintained its carbon neutral commitment. The company has taken steps to reduce resource consumption, which include energy efficiency measures, data centre virtualisation, waste recycling and water management programmes across its global operations.

5. Environmental and social financing

The company has seen growth in demand for environmental and social finance, often associated with infrastructure and energy. This is driven largely by the global energy transition and areas such as transport and mobility, digital infrastructure, housing and healthcare. Social needs in these fields are seeing client demands for capital, innovative financing solutions and support for new technologies. Macquarie continues to support its clients in their efforts to manage and respond to sustainability challenges and capitalise on emerging opportunities.

6. Client experience

Macquarie relies on building and maintaining enduring relationships with its co-investors and its corporate, institutional, government and retail clients across all businesses. Macquarie Bank Limited subscribes to the Banking Code of Practice (the Code).

The Code is an industry code of conduct developed by the Australian Banking Association (ABA), which sets standards of good banking conduct for banks, their staff and their representatives. The Code applies to banking products and services for consumer and small business customers, and their guarantors.

7. Community

The Macquarie Group Foundation is the philanthropic arm of Macquarie Group. The foundation provides support to hundreds of community organisations globally each year through financial support, volunteering and skills sharing, predominantly in the locations in which Macquarie operates.

8. Climate change

For almost two decades, Macquarie has worked with governments and clients to drive the energy transition and advance practical solutions to climate challenges. It has built market-leading capabilities in investing directly in climate mitigation and adaptation infrastructure, and in supporting clients and portfolio companies to decarbonise their activities. It now has over 50 gigawatts (GW) of green energy projects in development, construction or operation, and has \$A63b invested and arranged in green energy since 2010.³²

In summary, we find Macquarie group to be a company that recognises the importance of sound ESG practices as part of its responsibility to clients, shareholders, communities and the environment in which the company operates. The company has clear and regular dialogues with stakeholders and is constantly evolving its ESG approach.

³² Macquarie Group ESG report 2021.



China: Meituan

Helping people eat better, live better


Meituan is China's leading e-commerce platform for services. Its business revolves around the 'Food+ Platform' strategy, and is centered on "eating" at its core.

Meituan operates several well-known mobile apps in China. Its business comprises over 200 service categories, including catering, on-demand delivery, car-hailing, bike-sharing, hotel and travel booking, movie ticketing, and other entertainment and lifestyle services, covering over 2,800 cities and counties across China.

Meituan is a good example of an e-commerce company creating more value for society and investing in technology to better fulfill its social responsibilities. It is well regarded for its efforts to fulfill its social responsibilities and to

promote innovation. As a representative of the internet industry, the company won the award for the National Advanced Group for Poverty Alleviation in 2021. The development of a social responsibility system plays an important role in Meituan's overall strategic planning.

The company is committed to sharing its social responsibility philosophy across the whole ecosystem to promote the development and progress of all stakeholders, to create value for users, the industry and society.



"Creating more opportunities for employment and for new businesses to flourish."

The following content highlights several initiatives that Meituan has taken to achieve its sustainability goals.

Expanding digital inclusiveness: accessibility to smaller cities and senior citizens

Meituan is committed to expanding digital inclusiveness in China. Initiatives it has taken include accelerating senior-friendly modifications. In 2021, the company's car hailing business made modifications to better serve its elderly clientele.

Training the elderly to use smart phones

Meituan has sponsored and cooperated with local Chinese universities for the elderly to carry out training on smartphone use. It has also sent volunteers to teach elderly people how to use online shopping and utility payments and to show health codes. There is strong demand from elderly people to use digital services, but often they need training.

Expanding into lower-tier markets to benefit more people

Meituan has expanded its business categories and service scope to include smaller towns, boosting county-level economic development and introducing convenient lifestyle services to remote villages. In 2020 Meituan launched Meituan Select, a new community e-commerce business, allowing households to select fresh and affordable fruits and vegetables while lowering the threshold for use of internet services. By the end of 2020, Meituan Select had covered over 2,000 county-level

administrative areas. In addition, the company's newly-launched shared electric mopeds, which allow journeys of 1-10 kilometres, extend the transport options of residents in third- and fourth-tier cities and towns, helping to make up for lack of local public transportation.

Anti-waste measures in the restaurant industry: smaller cities and senior citizens

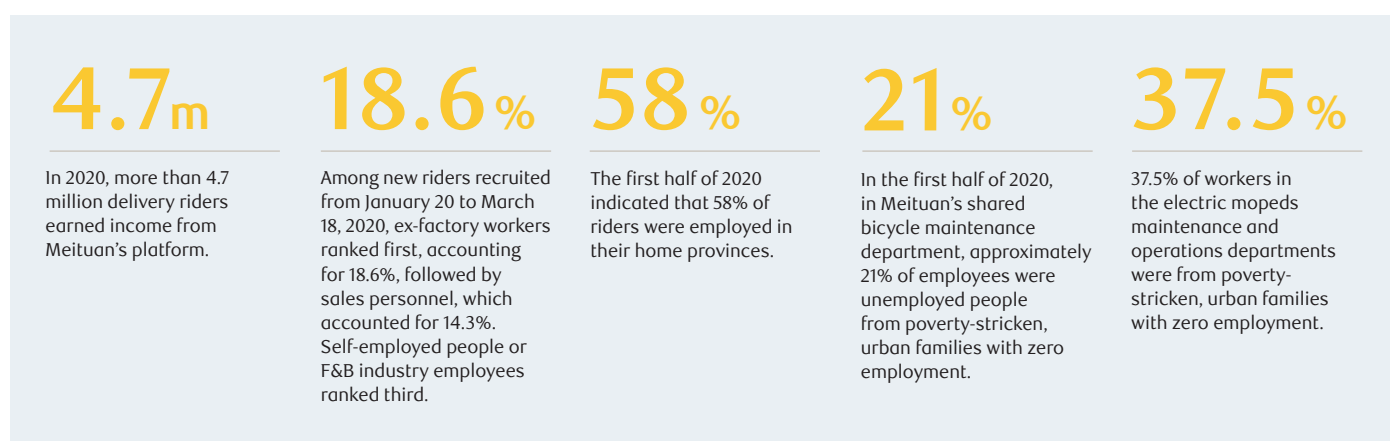
To advocate "practising thrift and opposing waste", Meituan's meal options now include single-person meal sets and smaller portions. Meituan partners with industry associations and catering businesses to promote anti-waste measures in the catering industry.

Improving employment and fostering new jobs

The spread of the COVID-19 pandemic presented severe challenges to China's labour market. The flexible employment of delivery riders made the industry both a pipeline and a pool for employment, providing job opportunities for significant groups of people such as migrant workers.

At the same time, new business models and occupations in the field of lifestyle services boomed, creating more opportunities for employment and for new businesses to start and flourish. We find Meituan to be a company that is committed to promoting the development and progress of all stakeholders. The company aims to accelerate the digital upgrade of the service industry for both suppliers and end consumers.

Fig. 40: Meituan's positive impact on employment



Japan: Sony Group

Initiatives towards a sustainable society

Sony Group (Sony) is a major technology company with business lines across consumer and professional electronic products, video gaming and semiconductors. Through Sony Entertainment, the company is also one of the largest music and film producers.

Sony is able to combine innovation and growth, while being concerned with the environment, society and corporate governance.

Sony has been consistently ranked highly by leading ESG institutions for its efforts to promote sustainability. Sony was chosen for inclusion in the MSCI ESG leaders index, as well as the FTSE4GOOD Index series.

Sony has received high external evaluations by UK-based CDP (Carbon Disclosure Project, www.cdp.net) which focuses on climate change, as well as Ethisphere Institute, a US-based organisation focused on ethical business practices. Sony is also highly regarded by MSCI ESG.

Sony considers nine categories as key to its long-term sustainability: technology, employees, corporate governance, ethics and compliance, respect for human rights, responsible supply chain, quality and customer service, environment and community engagement.

Sony uses its intelligent vision sensors with built-in artificial intelligence to adjust power use according to the surroundings, and to power down when appropriate.

Employee initiatives: Promoting greater opportunities for women

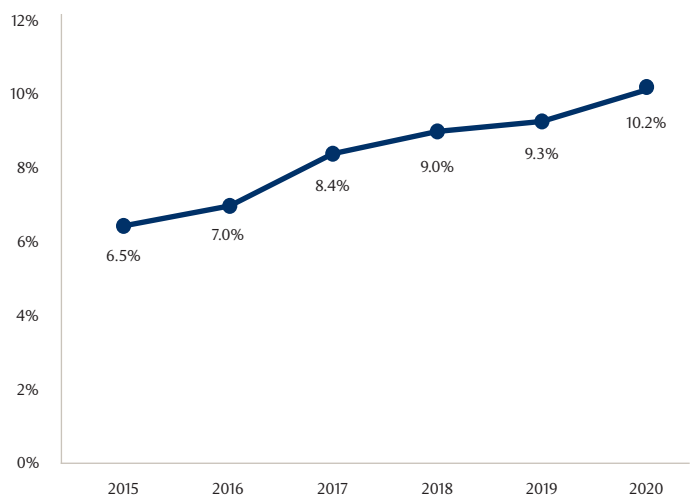
Sony embraces diversity and the working contributions of women, who accounted for 35.4% of the workforce and held 28.4% of management positions at the end of fiscal 2020. In Japan, Sony set a target for women to hold 10% of management positions by 2020, and pursued initiatives to actively hire, develop, and promote women. Sony achieved this target and women currently hold 10.2% of management positions.

Environment: Tackling Climate Change

Sony established an environmental plan named “road to zero” which sets the goal of reducing their environmental footprint by 2050. This involves reducing greenhouse gas emissions from electricity usage. By 2020, 5% of the company’s electricity usage came from renewable electricity and this is expected to rise to 30% by 2030.

In addition to reducing power consumption for the production of products, Sony has also incorporated substantial power reduction technologies into the design of its products, including TVs and game consoles. Sony uses its intelligent vision sensors with built in Artificial intelligence to adjust power usage according to the surrounding and power down when appropriate.

Fig. 42: Women in Management Positions at Sony Group in Japan



Source: Sony Group Sustainability Report 2021.

Responsible supply chain: Sony supply chain code of conduct

In recent years, stakeholders have become increasingly concerned about manufacturers’ responsibilities in relation to the product supply chain. This covers issues related to human rights, labour conditions, health and safety, and environmental protection, not only at businesses’ own production sites, but also at the sites of subcontractors and parts suppliers.

Conduct at Sony production sites is guided by the code issued by the Responsible Business Alliance (RBA*1), which Sony joined when the alliance was established in 2004. All Sony electronics manufacturing sites are involved in efforts to ensure compliance with the RBA Code of Conduct, which represents industry best practices. This code is revised and enhanced periodically, helping to ensure Sony meets industry best practices.

We find Sony group to be a company that considers the impacts of business activities on the interests of its stakeholders: shareholders, customers, employees, suppliers, business partners, local communities and the global environment.



Sony also engages in dialogue with stakeholders to build trust and get input. Based on these principles, we believe Sony will be able to create sustainable social and economic value over the longer term.

Fig. 43: Issues covered in the Sony supply chain code of conduct

A. Labour	B. Health and Safety	C. Environmental	D. Ethics	E. Management Systems
<ol style="list-style-type: none"> 1. Freely chosen employment 2. Young workers 3. Working hours 4. Wages and benefits 5. Humane treatment 6. Non-discrimination/ non-harassment 7. Freedom of association 	<ol style="list-style-type: none"> 1. Occupational safety 2. Emergency preparedness 3. Occupational injury and illness 4. Industrial hygiene 5. Physically demanding work 6. Machine safeguarding 7. Sanitation, food, and housing 8. Health and safety communication 	<ol style="list-style-type: none"> 1. Environmental permits and reporting 2. Pollution prevention and resource reduction 3. Hazardous substances 4. Solid waste 5. Air emissions 6. Materials restrictions 7. Water management 8. Energy consumption and greenhouse gas emissions 	<ol style="list-style-type: none"> 1. Business integrity 2. No improper advantage 3. Disclosure of information 4. Intellectual property 5. Fair business, advertising and competition 6. Protection of identity and non-retaliation 7. Responsible sourcing of minerals 8. Privacy 	<ol style="list-style-type: none"> 1. Company commitment 2. Management accountability and responsibility 3. Legal and customer requirements 4. Risk assessment and risk management 5. Improvement objectives 6. Training 7. Communication 8. Worker feedback, participation, and grievance 9. Audits and assessments 10. Corrective action process 11. Documentation and records 12. Supplier responsibility

Source: Sony Group Sustainability Report 2021.

Team Profiles

Mayur Nallamala

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Mayur is a Senior Portfolio Manager and the Head of the RBC Asian Equity team at RBC GAM. Prior to joining the firm in 2013, he was a Portfolio Manager at a global asset management firm, responsible for Asia Pacific ex-Japan mandates, managing assets on behalf of sovereign wealth, institutional and retail clients around the world.

Mayur had earlier worked at major brokerage firms in London and Hong Kong, working in derivatives and equity research. He began his career in the investment industry in 1998.

Siguo Chen

Portfolio Manager,
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Siguo is a Portfolio Manager on the RBC Asian Equity team at RBC GAM. She is the lead manager for the team's China Strategy and is also the team's healthcare specialist.

Prior to joining RBC GAM in 2017, Siguo was a sell-side equity analyst with a multinational investment bank where she specialised in China and Hong Kong consumer sectors and Hong Kong Equity Strategy. She started her career in the investment industry in 2012.

Maya Funaki

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Maya is a Portfolio Manager on the RBC Asian Equity team at RBC GAM. She is the lead manager for the team's Japan Strategy and is also the team's industrials specialist.

Prior to joining the organisation in 2015, Maya had worked as an analyst at a multinational investment bank in the investment banking division. She started her career in the investment industry in 2011.

David Soh

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David is head of research and a portfolio manager on the RBC Asian Equity team at RBC GAM.

Prior to joining the organisation in 2014, David had worked at a multinational investment bank specialising in quantitative investment strategies for Asian equities, having earlier worked as a management consultant at a global consultancy firm. He started his career in the investment industry in 2007.

Derek Au

Portfolio Manager,
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Derek is a Portfolio Manager on the RBC Asian Equity team at RBC GAM. He is the team's consumer, technology and internet specialist.

Derek joined the firm in 2013 as part of a graduate programme that allowed him to work in a variety of roles in Toronto and Hong Kong, across fixed income, Canadian equities and Asian equities. Prior to this, he had earlier worked at a global accounting firm, where he was responsible for the financial advisory and audit of publicly listed corporations in Toronto.

David Huo, CFA

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David is a Portfolio Manager on the RBC Asian Equity team at RBC GAM. He is the team's technology and communications specialist.

He has worked in a variety of roles in both Toronto and Hong Kong since joining the organisation in 1993, ranging from Research Analyst to Director of Global Equity Research.

Chris Lai, CFA

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Chris is a Portfolio Manager on the RBC Asian Equity team at RBC GAM. He is the team's financials specialist. Prior to joining the organisation in 2015, Chris was a sell-side equity analyst at a multinational investment bank where he specialized in the financial sector across Asia.

He had earlier worked at a major financial services holding company in a number of sales and risk management roles in different parts of the world. Chris started his career in the investment industry in 2012.

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Selina is an Associate Portfolio Manager on the RBC Asian Equity team at RBC GAM. She is the team's commodities, utilities and consumer specialist. Selina joined the organisation in 2018 as a part of a graduate program that allowed her to work in a variety of roles in Toronto and Hong Kong, across North American equities and Asian equities. Prior to this, she had worked at a major Canadian financial institution, gaining experience in corporate banking, credit risk and finance. Selina began her career in the investment industry in 2010.

Qian Yu

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Qian is an Analyst on the RBC Asian Equity team at RBC GAM. In this role, he is responsible for assisting in China equity investment research.

Prior to joining the organisation in 2021, Qian was a sell-side equity analyst with a multinational investment bank in Shanghai where he specialised in the China industrials sector. He started his career in the investment industry in 2017.

Anson Ko

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Anson is an Analyst on the RBC Asian Equity team at RBC GAM. He works closely with the portfolio managers to support bottom-up research across all sectors in the Asia Pacific region.

Prior to joining the organisation in 2021, which is when he started his career in the investment industry, Anson successfully completed internships both with his current team and also sell-side equity research teams at global investment banks.

Owen Ou

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Owen is a Portfolio Engineer on the RBC Asian Equity team at RBC GAM. He is focused on portfolio construction and risk analysis.

Prior to joining the organisation in 2018, Owen was an analytics consultant at a major financial data and software company, specialising in quantitative modelling and portfolio analytics. He started his career in the investment industry in 2014.

Clement Cheng

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Clement is a senior trader and Head of Asian Equity Trading on the RBC Asian Equity team at RBC GAM.

He manages the Hong Kong trading desk and executes trades for the organisation's Asia Pacific, Japan, and China strategies. Prior to joining the firm in 2014, Clement had gained experience at major buy-side and sell-side institutions. He began his career in the investment industry in 2005.

Kathy So

Asian Equity Trader,
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Kathy is a trader on the RBC Asian Equity team at RBC GAM. She joined the organisation as an equity trader in 2016, which is when she started her career in the investment industry, specialising in Asian markets.

Kathy began her career in financial journalism with experience anchoring financial television programmes covering Asia, Europe and U.S. markets

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Publication date: April, 2022

GUKM/22/046/APR23/A



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