Responsible Investment

As a major global asset owner and manager, the HKMA plays a pivotal role in fostering green and sustainable finance development, in support of the global climate change agenda. The HKMA has been an early mover in responsible investment. Since 2015, it has been spearheading investments in green and sustainable assets, requiring its external managers to adopt the *Principles of Responsible Ownership* promulgated by the Securities and Futures Commission, and integrating environmental, social and governance factors into the management of the Exchange Fund.

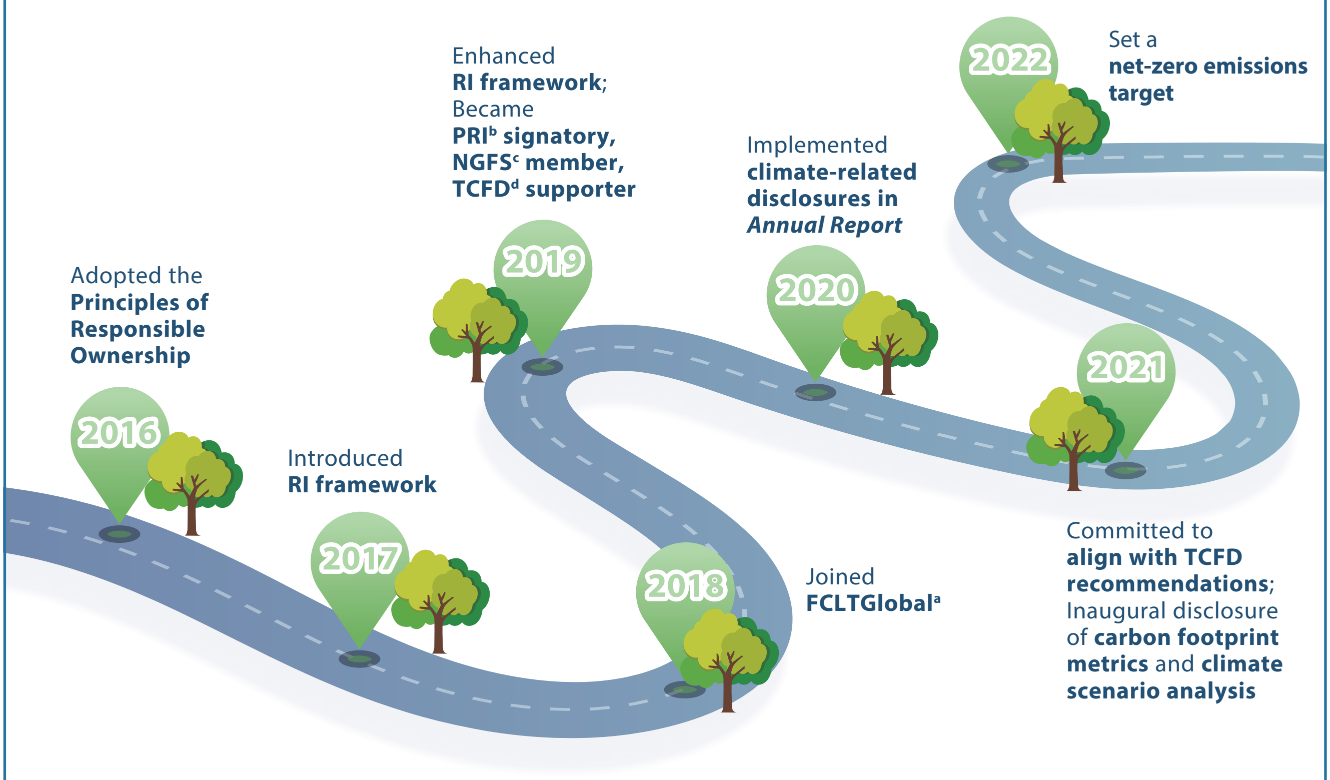
Responsible Investment

Overview

Investing prudently under the principle of "capital preservation first while maintaining long-term growth"[1], the HKMA believes that giving due attention to environmental, social and governance (ESG) factors can unlock the long-term sustainable value and mitigate the associated risks of an investment. In the face of mounting challenges posed by climate change, the HKMA continues to step up its responsible investment (RI) momentum, notably by setting a 2050 net-zero emissions target in 2022, and refining its associated risk management efforts with an aim to bolster portfolio resilience and enhance long-term risk-adjusted returns for the Exchange Fund.

The HKMA also actively participates in building the ecosystem for green and sustainable finance. It partners with like-minded investors and regulators to promote RI and collaborates with international organisations to develop ESG standards in investment. Transparency of climate-related information is central to the management of climate risks. Fulfilling its commitments to supporting the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) Glasgow Declaration at the 2021 United Nations Climate Change Conference and greening the global financial system, the HKMA aligns its climate-related disclosure for the Exchange Fund with recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD).

The Exchange Fund's journey of responsible investment



Notes:
a. FCLTGlobal – Focusing Capital on the Long Term
b. PRI – Principles for Responsible Investment
c. NGFS – Network of Central Banks and Supervision for Greening the Financial System
d. TCFD – Task Force on Climate-related Financial Disclosures

[1] Refer to the *Reserves Management* chapter of the *Annual Report 2022* for more details.

Responsible Investment

Governance

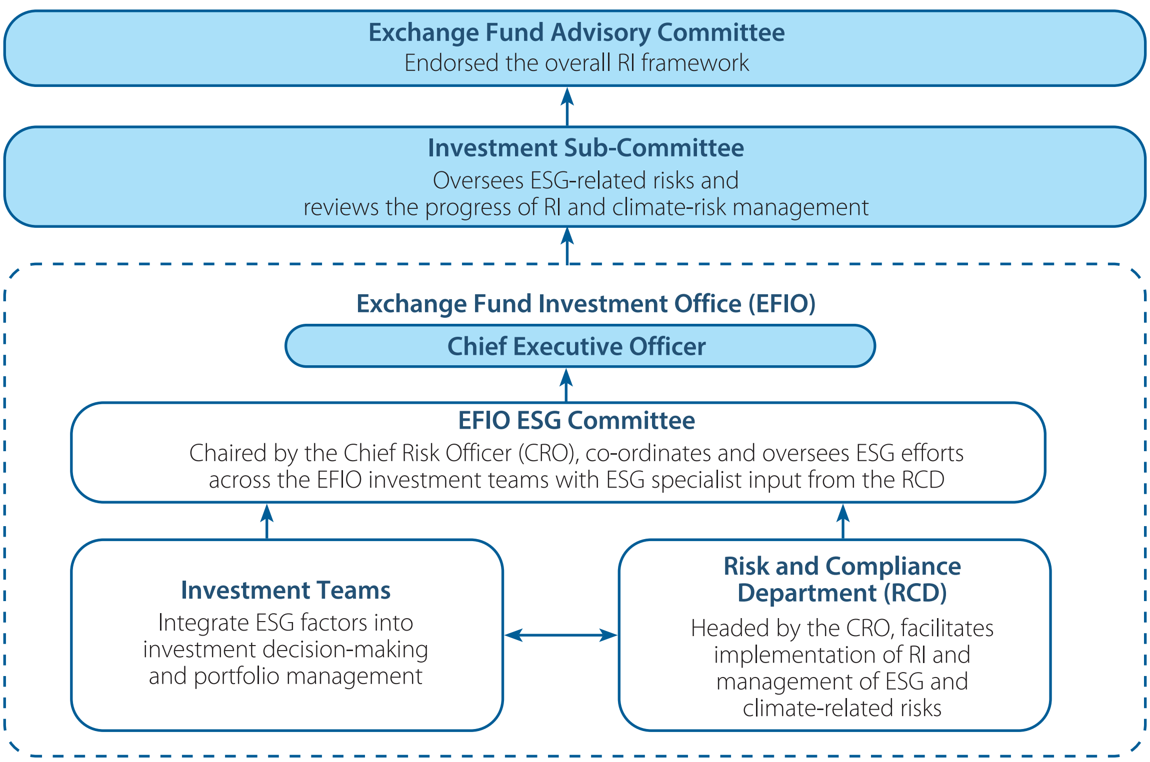
The Exchange Fund Advisory Committee (EFAC), chaired by the Financial Secretary, endorsed the RI framework and the guiding principle for implementation by the Exchange Fund Investment Office (EFIO) in managing the Exchange Fund. The overarching guiding principle that prioritises ESG investments with comparable long-term risk-adjusted returns, has underpinned an RI approach that dovetails with the investment objectives of the Exchange Fund.

More details about the HKMA's RI framework are available on the HKMA website:

The oversight of ESG and climate-related risks associated with the Exchange Fund's investments is exercised by the EFAC's Investment Sub-Committee (ISC) chaired by the Chief Executive of the HKMA. The ISC reviews the RI framework and risk management approach, and monitors the progress of ESG integration and the Exchange Fund's ESG profile through reporting by the EFIO's Risk and Compliance Department (RCD) at each meeting.

As illustrated in Figure 1, the EFIO ESG Committee, chaired by the Chief Risk Officer (CRO), is tasked to co-ordinate, oversee and monitor all ESG efforts within the EFIO. Initiatives and progress discussed at each EFIO ESG Committee meeting are reported to the Chief Executive Officer (CEO) of the EFIO.

Figure 1 **The oversight and governance structure for RI**



Responsible Investment

Dedicated teams of the RCD work closely with the EFIO's investment teams on ESG integration, and assist the EFIO's senior management in managing ESG and climate-related risks and opportunities in a broad range of investments:

- **Public investments** – The Credit, Rules and Compliance Committee, composed of the EFIO's senior management, monitors the ESG profile of fixed income portfolios based on regular reports provided by the RCD. In addition, the RCD participates in the selection, appointment and monitoring of external managers of public equities portfolios from an ESG perspective (see *Pursuing active ownership* under *Risk management* section on page 27).

- **Private investments** – The Investment Committee, chaired by the Chief Executive of the HKMA, takes into consideration the RCD's and the private market investment team's assessments of ESG-related issues for each prospective investment.

Strategies

Deepening climate risk assessment

Empirical evidence[2] continues to suggest that the impacts of climate change and associated risks are material. According to the latest report of the United Nations Framework Convention on Climate Change (UNFCCC)[3], even assuming full implementation of the Nationally Determined Contributions announced by various jurisdictions, the estimated global temperature rise will peak at 2.1–2.4°C by 2100, falling behind the Paris Agreement's goal to limit global temperature rise to well below 2°C above pre-industrial levels. Should jurisdictions take more ambitious policy actions to address the temperature gap, asset valuations could face heightened pressure due to the transition risks[4] and market repricing of assets resulting from expectation of future trends, not to mention the inherent physical risks.

In light of the updated global warming trajectory and modelling assumptions, the HKMA leveraged the expertise of an external consultant to further assess the resilience of the Exchange Fund's Investment Portfolio (IP) under a Rapid Transition scenario (Figure 2) in addition to the scenarios assessed in 2021. The Rapid Transition scenario, incorporating higher transition risks over the short, medium and long term, assumes that policy and technology developments would come together to deliver a rapid reduction in emissions and a sudden divestment across multiple assets would materialise to maintain an average temperature increase of 1.5°C by 2100. This is broadly in line with the NGFS-recommended disorderly scenarios for forward-looking climate impact assessment.

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2 Intergovernmental Panel on Climate Change, 2021. *Sixth Assessment Report*.

3 UNFCCC, 2022. *Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat*.

4 Climate risks are widely defined by two dimensions: (i) physical risks, including acute impacts from extreme weather events, causing business disruption and physical damage of assets; and chronic changes of climate patterns that affect operations and productivity; and (ii) transition risks involving possible abrupt devaluation of assets due to the shift towards a low-carbon economy.

Responsible Investment

Figure 2 **Under a Rapid Transition scenario**

- The IP remains resilient over the medium to long term due to a larger allocation to sovereign bonds which are less sensitive to the transition impact.

- Sector exposure is vital. Low carbon electricity and renewable energy assets stand to benefit from the transition.

- A shock to performance may happen especially on public equities in the short term as transition risks and repricing of assets materialise.
- The portfolio will generally face an increasing impact from physical risks that will manifest over time.
- Energy and conventional utilities continue to be the most vulnerable sectors.

Similar to other modelling methodologies, climate scenario analysis also has limitations. The analysis based on sector allocation of market benchmarks at the strategic asset allocation (SAA) level has not considered the effect of active selection of specific securities within a sector. A more in-depth study revealed that the IP's investments in general are better positioned for – or less impacted by – the transition shock than the SAA market benchmarks. This reaffirmed that the HKMA's implementation of RI emphasising on climate change could enhance portfolio resilience.

The climate trajectory remains uncertain and scenario methodologies continue to evolve alongside data quality improvement and policy developments. The HKMA will regularly review the scenarios and enhance its assessment to better ascertain the Exchange Fund's resilience to climate change.

Responsible Investment

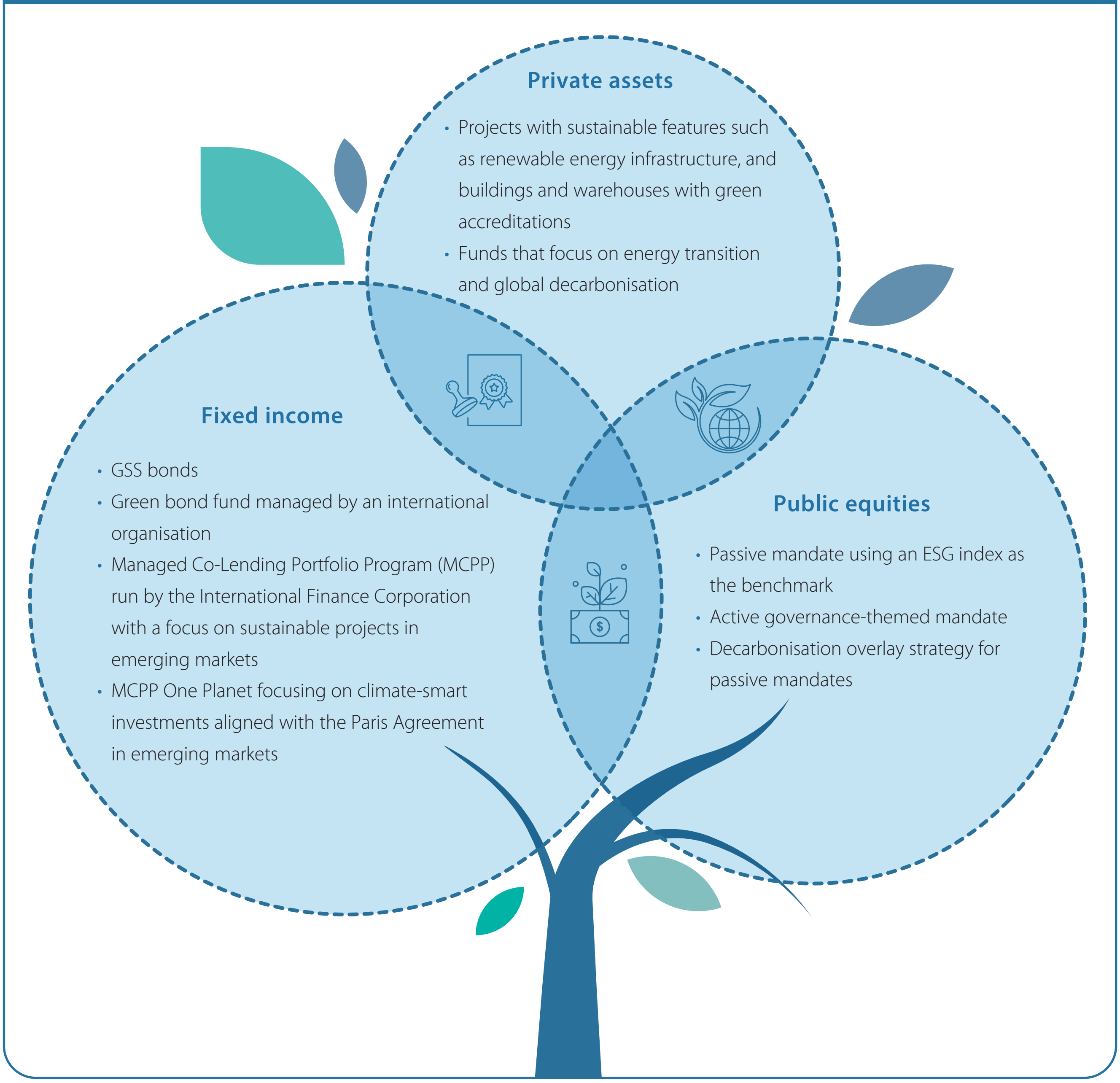
Growing ESG and green assets

As a long-term investor, the HKMA fully recognises the risks and opportunities that climate change can bring about. The HKMA seeks to further expand its sustainable investments and capture opportunities that target climate transition, mitigate climate risks and enhance long-term portfolio returns.

During 2022, the HKMA continued the positive momentum and increased its holdings of green, social and sustainability (GSS) bonds by an additional 50%. For public equities investments, it has funded a governance-themed active equities mandate and embarked on a decarbonisation overlay strategy for passive equities mandates, where the portfolios will be tilted in favour of lower carbon-emitting companies. Further, the HKMA is exploring with general partners (GPs) of the Exchange Fund's Long Term Growth Portfolio (LTGP) on establishing dedicated private equities mandates to promote green and sustainable development in the Asian region (Figure 3).

Figure 3

Ongoing initiatives in expanding ESG investments



Exercising responsible investment in private market investments

Case: Infrastructure project embracing nature conservation

The HKMA has an investment in a pan-African wind farm operator, which accords high priority to social and biodiversity considerations, in addition to producing clean energy. Prior to the arrival of wind farms, local villagers used toxic food traps to deter predators from harming their livestock, but this had inadvertently killed off certain endangered species of vultures.

To help local villagers protect their livestock, which represent a significant portion of their wealth, the investee company builds livestock shelters as an extension of the wind farm installation, protecting livestock from falling prey to natural predators. Further, the wind farm operator engages an on-site bird monitoring team to warn of any appearance of vultures attracted by the occasional carcasses left over by predators, such that the wind turbines can be shut down to avoid striking the vultures.

The minimisation of livestock being killed by predators creates a win-win situation: preserving the villagers' livelihood, and at the same time reducing vulture deaths caused by the wind turbines, which in turn preserves an endangered species.

Case: ESG improvements throughout the supply chain

Good ESG practices can expand revenue sources of corporations by creating more business opportunities as illustrated by this example involving a supply chain operation. An investee company, which is a Mainland integrated logistics warehouse operator dedicated to cold chain, medical, chemical and high-end consumer sectors, faces increasing demand for higher ESG operational standards. The growing ESG requirements emanate mainly from calls by multinational corporations (MNC) for their service providers to meet higher decarbonisation targets in line with the Paris Agreement. In response, the company has engaged an external ESG consultant to help devise a three-year ESG plan to reduce its carbon emissions intensity by 50% by 2030.

The comprehensive decarbonisation plan led to major achievements, which in 2021 alone included:

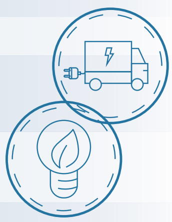
(a) adoption of 17 new energy trucks;

(b) increased usage of biomass diesel to approximately 12%;

(c) mileage savings of 10 million kilometres annually through application of an intelligent route planning system;

(d) avoidance of 150 tons of paper upon migration to electronic delivery processes and new freight recognition technologies; and

(e) annual savings of 29,000 kWh electricity upon application of light-emitting diode (LED) lights in warehouses.



These ESG initiatives have earned the company a "Low Carbon and Green Management Case Award" from the China Federation of Logistics and Procurement. Given the achievements and recognition, the investee company is able to win new business opportunities from many consumers and chemical MNCs that accord priority to ESG practices.

Responsible Investment

Building the ecosystem

The growth of ESG investments goes hand in hand with the development of the green and sustainable finance ecosystem. The HKMA proactively engages with like-minded investors and counterparties to promote RI and build capacity for the industry. In 2022, the HKMA successfully hosted its fourth annual ESG Workshop with nine participating private market institutions comprising GPs, limited partners and corporates, sharing good ESG practices and promoting sustainable investment opportunities in the Asia Pacific and the Guangdong-Hong Kong-Macao Greater Bay Area. In respect of the public market, the HKMA has urged its counterparties, primarily investment banks, to expand their ESG manpower and research capabilities, especially in Hong Kong.

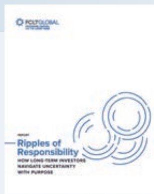
Mr Howard Lee, CEO of EFIO, delivers opening remarks at the HKMA ESG Workshop 2022

Collaborating with international organisations

Internationally, the HKMA plays an active role in formulating industry-wide ESG investment standards and practices:

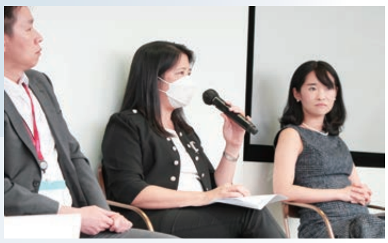
- As one of the earliest central bank signatories of the *Principles for Responsible Investment* (PRI), the HKMA participated in joint signatories' efforts co-ordinated by the PRI to develop the standard RI due diligence questionnaire (DDQ) for private equities and venture capital investments[5,6], helping private market investors conduct ESG assessment of GPs and prospective investments.

- The HKMA has served as members of numerous working groups supporting the FCLTGlobal's research work that aims to identify market leading practices for long-term investment mandates, decarbonising of private equity assets, and its application to long-term investors[7].



- Demonstrating its commitment to good ESG practices as a member of the NGFS and a supporter of the TCFD, the HKMA contributed to the NGFS' *Guide on climate-related disclosure for central banks*[8]. It is also leading a sub-working group under the NGFS' workstream of "Net Zero for Central Bank" tasked to formulate sustainable and responsible investment approach for the central banking community.

- The HKMA continued to participate in various industry forums and speaking engagements to share insights on RI and climate change strategies.



Ms Grace Lau (middle), CRO of EFIO, speaks at a sharing session on ESG investment opportunities

[5] PRI, 2021. *Responsible Investment DDQ for Private Equities Limited Partners*. (https://www.unpri.org/private-equity/responsible-investment-ddq-for-private-equity-limited-partners/8730.article#downloads)

[6] PRI, 2022. *Responsible Investment DDQ for Venture Capital Limited Partners*. (https://www.unpri.org/private-equity/responsible-investment-ddq-for-venture-capital-limited-partners/10635.article#downloads)

[7] FCLTGlobal, 2021. *Ripples of Responsibility: How Long-term Investors Navigate Uncertainty with Purpose*. (https://www.fcltglobal.org/resource/ripples-of-responsibility)

[8] NGFS, 2021. *Guide on climate-related disclosure for central banks*. (https://www.ngfs.net/en/guide-climate-related-disclosure-central-banks)

Responsible Investment

Strengthening internal capacity

Building internal capacity is essential to moving ahead on the ESG journey. Apart from encouraging staff to take sustainability-related courses and obtain relevant certifications, the HKMA has also gained knowledge and practical experiences from the 2021 external consultancy exercise that advised on leading industry practices of portfolio climate transition. In another initiative, the HKMA has extended the use of ESG data from a reputable external data provider to supplement its ongoing portfolio analysis, in order to help build a more ESG-resilient Exchange Fund going forward.

The HKMA seeks to upgrade its research efforts further and interact with fellow investors, industry-leading experts and international organisations to keep abreast of ESG developments. Meanwhile, to facilitate internal knowledge sharing, ESG news and recent developments are discussed as a standing agenda item at every EFIO ESG Committee meeting (see *Governance* section on page 21).

Risk management

Integrating ESG factors in credit analysis

To preserve long-term portfolio value, climate risk management has been an integral part of the HKMA's investment processes for all asset classes. For instance, ESG factors are incorporated in the credit risk model for fixed income portfolios, with regular monitoring of portfolio ESG scores based on external ratings assessed by reputable data providers.

Pursuing active ownership

The HKMA attaches high importance to good ESG integration and stewardship practices for its public equities investments. ESG considerations are embedded in the selection, appointment and monitoring of its suite of external managers, who are expected to discharge active ownership responsibilities and exercise shareholder rights in underlying companies on the HKMA's behalf, with a view to enhancing the long-term sustainable value of its investments.

Since the adoption of the *Principles of Responsible Ownership*[9] in 2016, the HKMA has seen advancement in its managers' ESG integration practices. To keep up with the development, the HKMA is refining its manager engagement focus from general ESG control-centric to a risk-based approach that addresses assets and portfolios in the Exchange Fund which are exposed to higher ESG and climate risks.

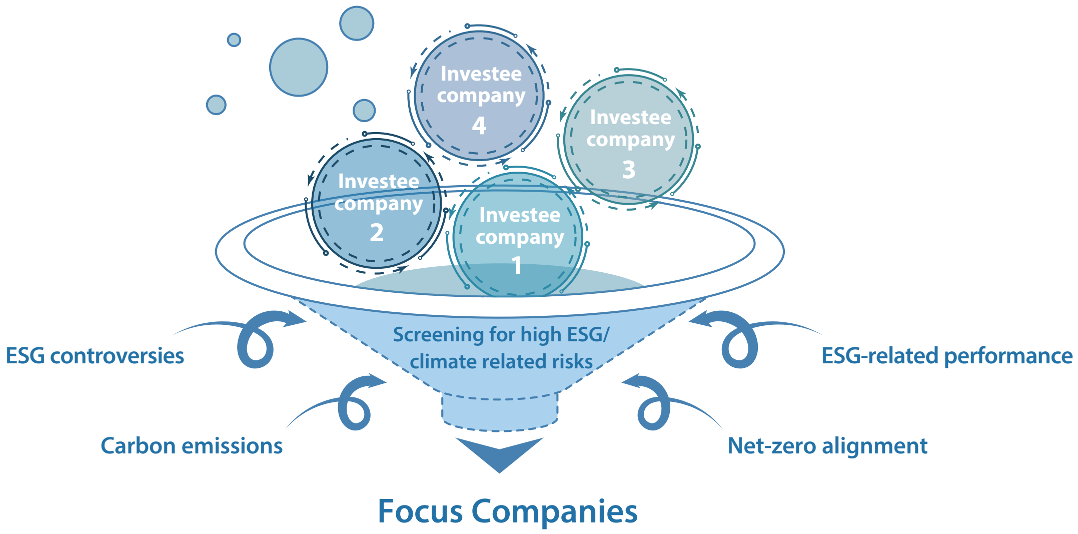
9 These voluntary principles, promulgated by the Securities and Futures Commission, aim to provide guidance to assist investors to determine how best to meet their ownership responsibilities.

Responsible Investment

Enhancing the engagement framework

In 2022, the HKMA enhanced its engagement framework for external managers by adopting a risk-based approach, focusing on a manager's justification for investing in companies associated with high ESG or climate-related risks, as well as its engagement work and voting records on these "focus companies". Recognising that the engagement with portfolio companies requires multi-year efforts, the HKMA will monitor managers' active ownership efforts towards the focus companies over time, as successful engagement and positive outcomes may only materialise with continued and determined efforts.

Identifying "focus companies" associated with high ESG or climate-related risks



Pilot engagement

A pilot engagement was conducted using the enhanced framework on selected managers of equities portfolios in emerging markets. Some useful observations and takeaway points were noted:

In general, active managers conducted bottom-up fundamental analysis, including an ESG assessment prior to investing. They also considered the value accretion opportunities from investing in "ESG improvers", i.e. companies with attractive valuation where potential return would get a boost from expected ESG improvement. More importantly, ESG incorporation did not mean compromising on investment return. As demonstrated by one of the active managers, by selecting quality companies during the investment decision-making process, a portfolio's investment return could outperform by more than 10% in 2021, and achieve a better ESG profile over the performance benchmark.

As reported by some active managers, public ESG data for emerging markets could be outdated, and the low availability and poor quality of ESG data highlighted the importance of engagement with companies in these markets. In order to conduct informed ESG assessments of "focus companies" operating in the emerging markets, conversations to better understand the company fundamentals were essential and could not be replaced by the use of public ESG data alone. Active managers also found engagement to be useful for encouraging companies to adopt better ESG practices.

Responsible Investment

Advocating transparency for private investments

The HKMA examines GPs' ESG policies and practices, as a mandatory part of its due diligence work for every investment mandate of the LTGP. Green accreditation is also a predominant factor in real estate investments. On an ongoing basis, the HKMA incorporates ESG integration clauses in the legal documentation and requires GPs to report ESG information, such as climate risk assessment and relevant metrics (including carbon emissions of underlying investments), to promote transparency in the private market sector and facilitate continuous risk monitoring.

Target and metrics

Targeting net-zero emissions

The HKMA believes that investing in a greener future can preserve the portfolio value and enhance the long-term risk-adjusted returns of the Exchange Fund. To reinforce its commitments to supporting the global climate agenda and bolstering portfolio resilience while navigating the transition towards a low-carbon economy, the HKMA has set a target of net-zero emissions by 2050 for the IP of the Exchange Fund. This target marks a key milestone on the HKMA's RI journey and upholds its commitment to align with the TCFD framework.

Guided by the RI framework, the HKMA is stepping up its ongoing efforts on three fronts – integration, active ownership and collaboration, with a clear focus on portfolio decarbonisation and transition. Specific actions include:

- actively seeking opportunities to invest in green and sustainable assets that support the whole-of-economy transition, in line with the guiding principle of RI;
- deepening ESG integration by incorporating climate-related metrics into investment analysis for both public and private market investments;
- appointing external managers and GPs with credible objectives and targets aligned with a net-zero emissions pathway;
- exercising active ownership via external managers to exert influence on investee companies' decarbonisation and transition plans; and
- collaborating with market stakeholders to promote climate-related information reporting.

Practising investment stewardship

In fulfilling the net-zero target, the HKMA prefers a stewardship approach based on engagement and voting over divestment or exclusion in its range of permissible investments.

From an asset manager's lens, the HKMA seeks an investment efficient frontier through a diversified portfolio to achieve the primary investment objectives of the Exchange Fund. Outright exclusion could shrink the investible universe, constraining diversification, and adversely impacting investment risks and returns.

From an active investor's lens, the transitioning of core "brown" industries is essential to meeting the goals of the Paris Agreement. Exclusion and divestment would not solve the carbon emissions problem in the real economy. Rather, it would pass the ownership to another investor who might not prioritise climate risk management, or it might disincentivise businesses in need of strategic capital for implementing transition. Moreover, investors should be able to invest in good performers of different, especially brown, sectors whereby the companies with better technology and corporate governance could not only enhance portfolio returns, but also be influenced through exercising active ownership to make positive changes both for themselves and the world.

Responsible Investment

Measuring carbon emissions

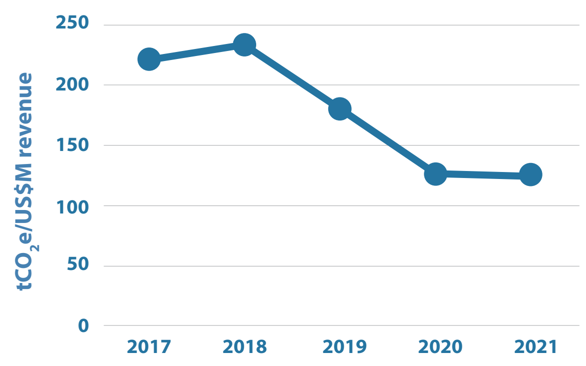
Quantitative measurement is useful for the HKMA's continuous risk monitoring and assessment of measures taken. For climate change, measuring carbon emissions enables the HKMA to understand the climate risk profile of its portfolios, monitor decarbonisation progress and identify the carbon-intensive areas that require further action.

The HKMA continues to measure the weighted average carbon intensity (WACI)[10], expressed as tCO_2e[11]/US$ million revenue, for the Exchange Fund's portfolios in line with industry practice. Scope 3 emissions[12] are excluded due to the high data uncertainty and lack of a consistent methodology for measurement, rendering them prone to double or even multiple counting.

Monitoring of emissions from public equities portfolios is given priority due to the more consistent measurement and disclosure practices in the market. In addition, based on the results of the abovementioned climate scenario analysis, public equities are more susceptible to climate risks than other asset classes of the Exchange Fund.

In Chart 1, the HKMA presents the WACI of the Exchange Fund's public equities portfolios from 2017 to 2021, using methodologies and tools developed by an external data provider. Where reported data were not available, the data provider estimated carbon emissions using its proprietary model. The reported and estimated data together covered more than 97% of the asset values of the assessed portfolios.

Chart 1 **WACI of the Exchange Fund's public equities portfolios**



Sources: MSCI[a] and HKMA calculations

a. Note on use of information on the HKMA website (https://www.hkma.gov.hk/eng/key-functions/reserves-management/responsible-investment/climate-risk).

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10 WACI is a metric recommended by the TCFD and NGFS. It measures a portfolio's exposure based on Scope 1 and 2 emissions relative to gross revenues of underlying investments, weighted by their relative sizes in the portfolio. Scope 1 emissions refer to direct emissions from sources owned or controlled by an organisation. Scope 2 emissions refer to indirect emissions generated from purchased electricity, steam, heating or cooling consumed by an organisation.

11 tCO_2e refers to tonnes of carbon dioxide equivalent.

12 Scope 3 emissions refer to all other indirect emissions that result from the activities of an organisation.

Responsible Investment

The WACI of the public equities portfolios as at the end of 2021 was 126 tCO_2e/US$ million revenue, representing a reduction of 2% compared to 2020 and an overall 43% reduction compared to the 2017 level. This figure is persistently lower than the market investment benchmark, an indication of the Exchange Fund's lower exposure to carbon-intensive assets when compared to the broader market.

The pathway to net-zero is, however, non-linear. Portfolio decarbonisation of the Exchange Fund is subject to short-term fluctuations driven by multiple factors other than emissions, such as changes in portfolio asset mix and strategies in response to market developments, in addition to fluctuations in underlying asset valuations. For instance, the small reduction of WACI during 2021 was affected by post-COVID rebound of global emissions.

While the WACI is widely adopted for assessing portfolios' carbon exposure, its measurement is based on companies' disclosures, which are inherently backward-looking and do not account for companies' future decarbonisation or transition potential. The HKMA envisages that its approach to engage with external managers for long-term changes and transition of portfolio companies, rather than divestment, will result in short-term increases in the WACI before the positive outcomes are materialised. The HKMA believes that, by continuing investment in companies which adopt good ESG practices to align with a credible net-zero pathway, the emissions reduction will pick up in the years to come.

As new disclosure standards promulgated by different jurisdictions and related collaborative efforts continue to enhance emissions measurement methodologies, data availability and quality, the HKMA will continue to closely monitor these developments with the aim of exploring suitable metrics for advancing its climate exposure monitoring and reporting.