Responsible Investment

As a major global asset owner and manager, the HKMA is pioneering the development of green and sustainable finance. Grounded in its experiences that demonstrate the feasibility of aligning financial performance with positive impact, the HKMA upholds responsible investment in managing the Exchange Fund, prioritising sustainable assets and mandating active ownership by its external managers.

Responsible Investment

Overview

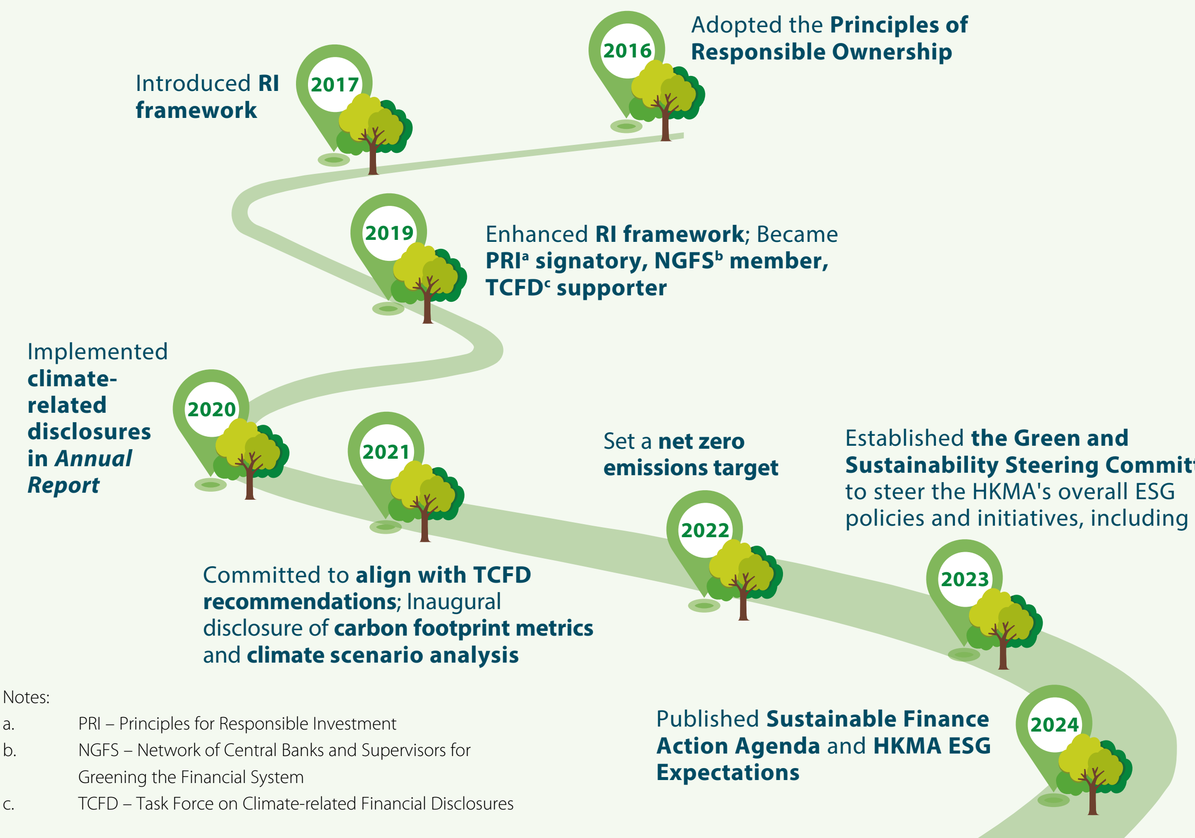
Investing prudently under the principle of "capital preservation first while maintaining long-term growth"[1], the HKMA believes that giving due attention to environmental, social and governance (ESG) factors can help mitigate the associated risks and unlock the long-term sustainable value of investments.

As a steadfast signatory of the Principles for Responsible Investment (PRI), the HKMA is dedicated to advancing its responsible investment (RI) initiatives. We place a strong emphasis on sustainability, particularly the pressing issue of climate change, with the aim to bolster resilience and enhance long-term risk-adjusted returns of the Exchange Fund. We continue to actively explore tools to channel capital towards sustainable investments across asset classes, underpinned by a disciplined approach to integrating ESG factors (Figure 1).

Leveraging its role as a major investor, the HKMA contributes to advancing the ecosystem for green and sustainable finance. In September, the HKMA published the HKMA ESG Expectations and made the document available to investment counterparties through the annual ESG Workshop and the HKMA website. We partner with like-minded investors, regulators and international organisations to develop industry-wide practices and promote adoption of RI across the financial and central banking sectors. Through these collaborative efforts, we strive to foster a future where finance and sustainability can go hand in hand.

The Sustainable Finance Action Agenda (Action Agenda), published by the HKMA in October, further reinforces its commitment to investing in a sustainable future by achieving net zero emissions[2] for the Exchange Fund's Investment Portfolio (IP) by 2050 and mobilising its counterparties to support the transition to a low-carbon economy.

Figure 1 The Exchange Fund's journey of responsible investment



Notes:
a. PRI – Principles for Responsible Investment
b. NGFS – Network of Central Banks and Supervisors for Greening the Financial System
c. TCFD – Task Force on Climate-related Financial Disclosures

[1] Refer to the *Reserves Management* chapter of our *Annual Report 2024* for more details.
[2] Carbon emissions according to the Greenhouse Gas Protocol (https://ghgprotocol.org/).

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 has underpinned an RI approach that dovetails with the investment objectives of the Exchange Fund.

The Exchange Fund's guiding principle of RI:

> *"Priority will generally be given to ESG investments if the long-term risk-adjusted return is comparable to other investments."*

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 implementation through reporting by the EFIO's Sustainable Investing (SI) team at each meeting. As illustrated in Figure 2, the EFIO ESG Committee, chaired by the Chief Strategy Officer (CSO), co-ordinates and oversees all ESG-related efforts within the EFIO. Initiatives and progress discussed at quarterly EFIO ESG Committee meetings are reported to the Chief Executive Officer (CEO) of the EFIO.

Furthermore, the Green and Sustainability Steering Committee, chaired by the Chief Executive of the HKMA and attended by the CEO and CSO of the EFIO, convenes regularly to provide guidance on the HKMA's ESG policies and initiatives across various functions, including those of the EFIO, in alignment with the HKMA's overall ESG goals.

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

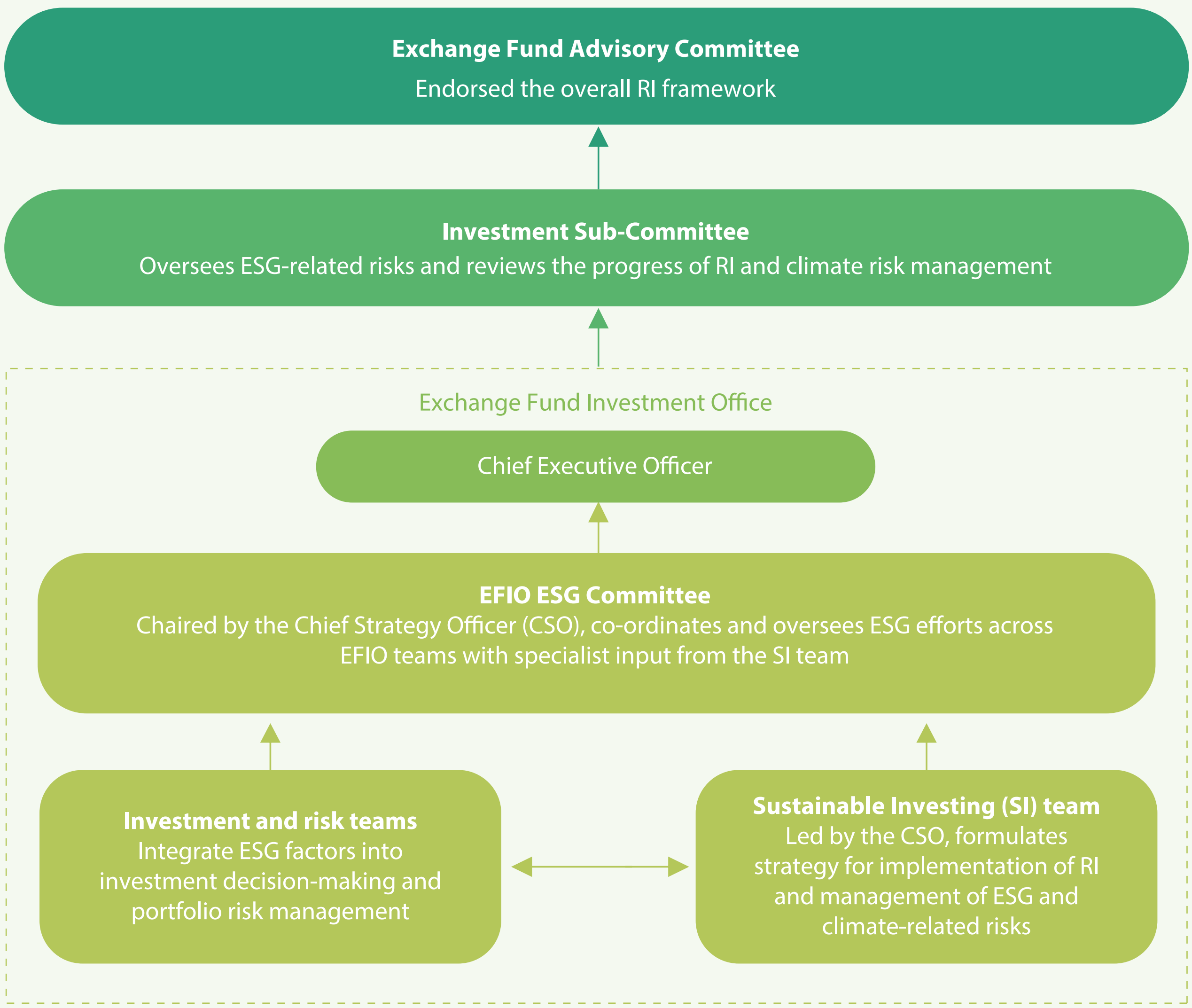
The SI team works closely with different teams within the EFIO on ESG integration, and assists the EFIO's senior executives in managing ESG, especially climate-related risks and opportunities across a broad range of investments:

- **Public investments** – The Credit, Rules and Compliance Committee, composed of EFIO's senior executives, reviews the incorporation of ESG factors into the credit risk model with the SI team's input, and monitors the ESG profile of fixed income portfolios based on regular reporting by the Risk and Compliance Department. In addition, the SI team participates in the selection, appointment and monitoring of external managers by bringing in an ESG perspective (see the *Advocating active ownership* subsection under the *Risk management* section on page 39).

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

Responsible Investment

Figure 2 The governance structure for RI of the EFIO



Responsible Investment

Strategies

The HKMA recognises that the physical and transition risks[3] from climate change, along with related opportunities, can affect the long-term financial performance of the Exchange Fund's investments.

The *Emissions Gap Report 2024*[4] by the United Nations (UN) Environment Programme projected a global average temperature rise of 2.6–3.1°C above pre-industrial levels unless there is a massive global mobilisation to rapidly cut greenhouse gas (GHG) emissions. The unpredictability of policy shifts, technological developments and behavioural changes to address the temperature rise could amplify transition risks that may result in increased market volatility affecting asset valuations. Simultaneously, the increasing occurrence and severity of extreme weather events have become evident, posing additional risks of physical damage and financial losses to investments.

Amid these challenges, the pivot towards sustainable solutions by governments and industries also presents investment opportunities in low-carbon solutions, emerging technologies and sustainable infrastructure, which may offer attractive long-term prospects.

Emphasis on climate change for responsible investment

Believing that investing for a sustainable future dovetails with the investment objectives of the Exchange Fund, the HKMA has placed particular emphasis on climate-related factors for ESG integration. It has set a target of achieving net zero emissions by 2050 for the IP of the Exchange Fund. The HKMA is advancing its ongoing efforts through a disciplined three-pronged approach to progress towards achieving the target (see Figure 3).

Figure 3 The HKMA's three-pronged approach to RI

In 2024, the HKMA announced the Action Agenda, which, among other items, reinforced the Exchange Fund's commitments and efforts related to climate transition (see Figure 4).

In support of the transition to a low-carbon economy, the HKMA prioritises proactive engagement over exclusion or divestment from its permissible investments.

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3 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.

4 UN Environment Programme, 2024. *Emissions Gap Report 2024: No more hot air... please!* (https://www.unep.org/resources/emissions-gap-report-2024).

Responsible Investment

Figure 4

Sustainable Finance Action Agenda

Investing in a sustainable future

Goal 3 Achieve net zero emissions for the Investment Portfolio of the Exchange Fund by 2050

- Actively expand the scope and variety of its sustainable investments, particularly those supporting the theme of climate transition across public and private markets
- Incorporate ESG factors, with a specific focus on climate change and forward-looking transition considerations, into every investment decision
- Set clear ESG expectations in line with international standards and best practices, and require adherence from all external managers, direct investee companies and trade counterparties
- Endeavour to reduce weighted average carbon intensity (WACI) of its public equity holdings by 67% by 2030 from the 2017 level

Goal 4 Support transition in the region through investment

- Continue to engage with external managers to optimise opportunities driving the transition
- Continue to actively seek and prioritise sound investment opportunities that foster Asia's transition and generate positive global impacts

First, maintaining a diversified and resilient portfolio is crucial to achieving the primary investment objectives of the Exchange Fund. Outright exclusion of sectors or industries could shrink the investible universe, potentially impacting investment risks and returns. By taking an inclusive approach, the HKMA can capture opportunities to invest in companies undergoing transition, including those from heavy-emitting industries that possess strong technology and governance to navigate through the evolving global climate trend.

Second, addressing climate change requires the transition of core "brown" industries. Excluding and divesting from these industries alone would not solve the carbon emissions problem. Instead, the HKMA supports these industries through strategic capital and active ownership to drive their transition to sustainable and low-carbon practices, resulting in positive changes both for the industries themselves and the global community.

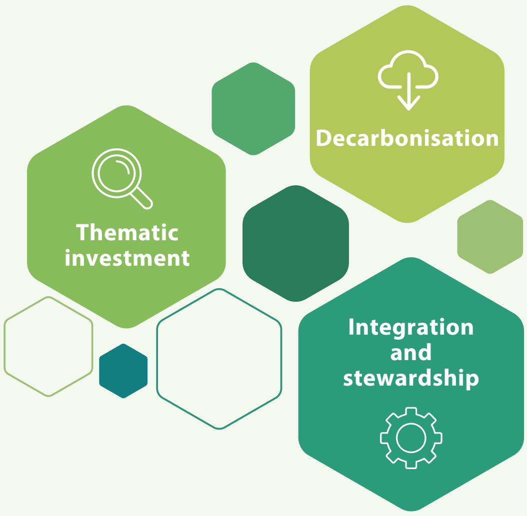
Responsible Investment

A holistic strategy for sustainable transition

Net zero investment approaches have evolved from a preference for green or low-carbon assets to encompass those with credible transition prospects driving a comprehensive decarbonisation across the entire economy. As a global asset owner, the HKMA acknowledges that achieving long-term portfolio resilience requires not only adjustments within the portfolio but also a transition in the broader economy.

While there is no single perfect solution, the HKMA refined its RI strategy in 2024, adopting a holistic and multifaceted approach to pursue transition outcomes supporting both the Exchange Fund's and global net zero goals.

The strategy will employ a combination of top-down and bottom-up tools, including the fundamental integration of ESG factors and stewardship, portfolio decarbonisation tilts and thematic investments aligned with net zero pathways across asset classes. In public markets, this may involve tilting the portfolio towards ESG leaders or climate solution providers, alongside stewardship to drive corporate transition. In private markets, greater emphasis may be placed on investments that facilitate the transition.



Responsible Investment

Pursuing sustainable investments

Through the integration of ESG factors into investment decisions, the HKMA continues to seek opportunities that can promote the climate transition while enhancing long-term resilience of the Exchange Fund's portfolios. Sustainable investments across different asset classes constitute over 10% of the Exchange Fund's IP, with comparable financial performances against respective portfolio benchmarks (Figure 5).

Investment highlights in 2024:

- **Public investments** – The HKMA launched an active global public equities mandate focused on sustainability and climate transition, and extended the application of bespoke low-carbon equity indices to two additional externally managed portfolios. It also continues to seek attractive green, social and sustainability (GSS) bonds that offer competitive returns while financing sustainable projects (see the *Enhancing sustainability through GSS bonds* for case studies).

- **Private investments** – The HKMA strives to construct a resilient Long-Term Growth Portfolio (LTGP) by seizing opportunities aligned with climate and energy transition themes. Leveraging its vast network and expertise, the HKMA proactively sourced and vetted opportunities that could accelerate energy transition, including through the formation of strategic partnerships with multinational organisations (see the *Joining forces to tackle climate challenges in Asia and beyond* for examples).

Figure 5 Ongoing initiatives in pursuing ESG investments

Public equities:
- Passive mandate using an ESG index as the benchmark
- Decarbonisation overlay strategy using bespoke methodologies for non-ESG benchmarked passive and active quantitative mandates
- Active governance-themed mandate
- Active ESG mandate focusing on sustainability and climate transition themes

Private assets:
- Projects with sustainable features such as renewable energy infrastructure, and buildings and warehouses with green accreditations
- Funds that focus on energy transition and decarbonisation globally, in Asia and the Global South

Fixed income:
- Green, social and sustainability bonds
- Green bond fund managed by an international organisation
- Managed Co-Lending Portfolio Program (MCPP) run by the International Finance Corporation (IFC) with a focus on sustainable projects in emerging markets
- MCPP One Planet focusing on climate-smart investments aligned with the Paris Agreement in emerging markets

Responsible Investment

Enhancing sustainability through GSS bonds

Case 1 Innovative transformation of sewage treatment plants

The HKMA invested in a green bond issued by a quasi-government organisation. Funding from this green bond has been allocated to several projects, including the upgrading of ageing equipment at various sewage treatment plants. These enhancements encompass improvements to monitoring and control systems as well as pumps, aimed at producing positive environmental benefits from wastewater management, waste reduction and recycling.

Besides continuous wastewater and sludge treatment, these plants achieve a remarkable sludge recycling rate of 100%, by composting or repurposing dehydrated sludge to produce fertiliser, charcoal, cement and other construction materials. The plants also harness digester gas generated during the sludge treatment process to power boilers and generate electricity.

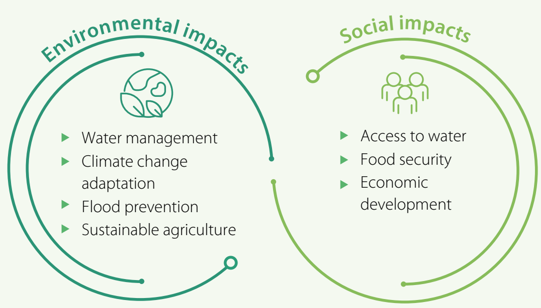
Case 2 Rehabilitating a canal system to transform arid lands

The HKMA invested in a green bond issued by a multi-development bank, which financed various projects, including the rehabilitation of a national canal system. As one of the country's largest irrigation systems, the canal was designed to divert surplus water from rivers to arid regions.

The project focuses on rehabilitating the deteriorating canal lining to prevent seepage, conserve water, enhance water usage efficiency and enable the reclamation of waterlogged areas. Additionally, it introduces capacity building measures for local stakeholders to promote the adoption and optimal use of modern irrigation techniques, such as micro-irrigation and sustainable farm practices.

By expanding irrigation to additional land and increasing the availability of drinking water, the project is expected to create positive social impacts, improving the quality of life of local communities and supporting the development of the agriculture industry.

Creating a dual impact through the canal rehabilitation project



Responsible Investment

Joining forces to tackle climate challenges in Asia and beyond

Formation of strategic partnerships

Climate change is a paramount challenge of our era, with Asia playing an important role in combating this global challenge. Accounting for half of the world's GHG emissions, Asia's dense population and geographical susceptibility to extreme weather necessitate immediate action to combat these challenges.

Tackling these issues demands sustained dedication and collective effort over an extended period; it cannot be achieved alone. In 2024, the HKMA collaborated with several multilateral organisations, including the Asian Development Bank, Asian Infrastructure Investment Bank and the IFC, to form a strategic partnership, serving as both an example and a call to action for investors and stakeholders to unite against the pressing issue of climate change in Asia. The partners will make collective investments in sectors that contribute to achieving net zero emissions in the region, including renewable energy infrastructure, energy solutions and sustainable transportation. Notably, the Actis Asia Climate Transition Fund, announced in November, is one of the earliest collaborative efforts under this strategic partnership.

Mr Howard Lee, CEO of EFIO (third from right); and Mr Samson Wong, Chief Investment Officer (Private Markets) of EFIO (third from left), announce the strategic partnership at the Asia Climate Investment Seminar

Anchor capital catalysing climate investment

The HKMA has been exploring innovative solutions in climate transition by collaborating with general partners (GPs) of the LTGP to establish transition-themed funds in Asia, where product availability has been limited.

Proactively, the HKMA requested dedicated investment products, assessed frameworks for evaluating eligible projects and provided essential anchoring funds to facilitate execution.

This collaboration not only led to the successful launch of a dedicated Asian climate strategy but also spurred a GP to uncover a robust pipeline, culminating in the development of a global iteration of the climate strategy, which has been well received by investors. Ultimately, the initiative expanded the investment universe supporting the transition, reinforcing the HKMA's commitment to driving sustainable capital flows through collective efforts.

Responsible Investment

Building the ecosystem

The green and sustainable finance ecosystem is the cornerstone of future global sustainability. The HKMA proactively collaborates with like-minded investors and counterparties to promote RI and strengthen the industry's capacity.

HKMA ESG Workshop

In 2024, the HKMA successfully organised its sixth annual ESG Workshop, hosting over 90 investment professionals from the EFIO and its counterparties. Gathering asset managers from both public and private markets for the first time, the workshop facilitated engaging panel discussions on the current sentiments, challenges and opportunities in RI. It also featured the launch of the inaugural version of the HKMA ESG Expectations document, which establishes a framework for engagement and dialogue with the HKMA's investment counterparties, aimed at promoting best practices in sustainable investing (see the *Advocating active ownership* subsection under the *Risk management* section on page 39 for details).

Mr Howard Lee, CEO of EFIO, delivers remarks at the HKMA ESG Workshop 2024

Collaboration with international organisations

Internationally, the HKMA remained at the forefront of promoting industry-wide ESG investment standards and practices in 2024:

- At the platform of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), the HKMA is co-chairing with the European Central Bank the new subgroup on transition planning for central banks for 2024–2026, under the Workstream "Net Zero for Central Banks".

- The HKMA participated in various industry forums and media interviews, sharing its experiences in RI and advocating for the adoption of sustainable investment practices. The number of speaking engagements increased notably compared to the previous year, significantly enhancing the HKMA's outreach.

Mr Leong Cheung, CSO of EFIO, speaks at an international conference on institutional investment

Mr Leong Cheung, CSO of EFIO, interviewed by the RTHK programme "Vibrant Hong Kong"

Responsible Investment

Assessing portfolio climate resilience

The HKMA utilised scenarios (see Figure 6) developed by an external consultant to assess the resilience of the Exchange Fund's IP against potential vulnerabilities and opportunities arising from different states of climate change.

- **Rapid Transition:** This scenario features an abrupt pricing-in of transition risks, accompanied by disruptive sentiment shocks in the very near future. It is to be driven by ambitious global policies aimed at limiting global warming to 1.5°C by the end of the century.

- **Orderly Transition:** This scenario envisions a collaborative effort to limit global warming to less than 2°C by the end of the century through systemic policy implementation.

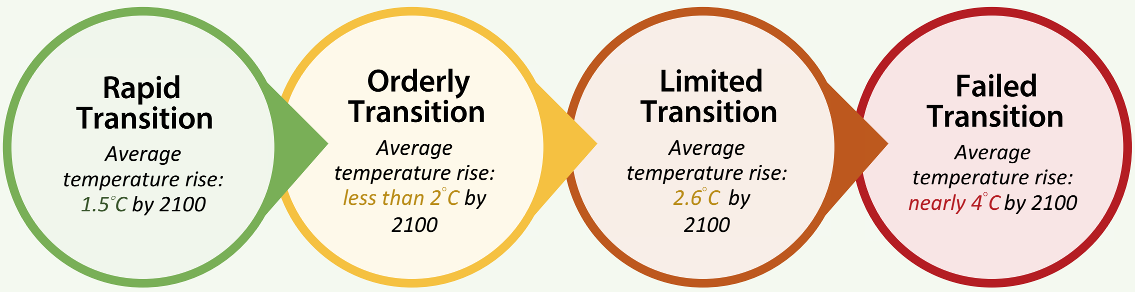
- **Limited Transition:** Introduced in 2024, this scenario assumes that policymakers will partially implement their Nationally Determined Contributions. Consequently, the world is expected to fall short of meeting the Paris Agreement goals, despite certain efforts towards decarbonisation.

- **Failed Transition:** This scenario assumes that no new additional climate policies will be enacted, leading to severe physical risks and a temperature increase of nearly 4°C by the end of the century.

The analysis assesses the impact of varying levels of physical and transition risks on the IP's investment returns across short, medium and long term horizons. In the short term, transition risk is likely to dominate, especially in the Rapid Transition scenario that assumes sudden asset repricing. In the medium term, both transition and physical risks can influence returns, with physical damage shocks being more pronounced in the Limited and Failed transition scenarios. Over the long term, physical risk is expected to be the primary driver of climate impacts, particularly in the Limited and Failed Transition scenarios.

Overall, the IP demonstrates resilience across all four scenarios, with modest impacts on annualised returns in the short, medium and long term. The IP is positioned to withstand extreme situations, including the rapid pricing-in of transition risks in the Rapid Transition scenario and the prolonged severe physical damages modelled in the Failed Transition scenario.

Figure 6 Applying a range of scenarios for analysing climate risks



Responsible Investment

Figure 7 Highlights of the climate scenario analysis

- A successful transition is an imperative: In the long term, achieving a successful transition, as opposed to scenarios with higher temperature outcomes, results in positive projected returns by mitigating physical damages.

- Sector exposure is key. Low carbon electricity and renewable energy assets are poised to benefit from the transition to a low-carbon economy.

- Public equities are more vulnerable to climate risks. A short-term performance shock may occur in the Rapid Transition scenario due to aggressive asset repricing, although the likelihood of this happening is relatively low.
- Conventional fuels and utilities continue to be the most negatively impacted in the transition.

While scenario analysis provides a comprehensive simulation of climate-related uncertainties, it has its limitations. In addition to the inherent challenges of modelling the multifaceted uncertainties of climate change, the analysis focuses on sector allocation of market benchmarks at the strategic asset allocation (SAA) level, without considering the active selection of specific securities within those sectors. An in-depth examination reveals that the IP's investments are generally better positioned for – or less affected by – shocks compared to the SAA market benchmarks, reaffirming the HKMA's commitment to RI in enhancing portfolio resilience.

Nonetheless, the potential negative impacts on investment returns underscore the need for continuous monitoring and management of climate risks and opportunities. The finding that avoiding scenarios with severe physical risks aligns with the financial interest of long-term investors further emphasises the importance of the HKMA's stewardship efforts in advocating for a successful transition.

Strengthening internal capacity

Developing internal capacity is crucial for the further progress in RI. The HKMA seeks to enhance its research efforts further and interact with fellow investors, industry-leading experts and international organisations to keep abreast of the latest ESG developments.

In addition to staff undertaking sustainability-related courses and acquiring relevant certifications, the HKMA actively participated in conferences and seminars organised by esteemed international organisations such as the PRI, NGFS, fellow central banks and investment counterparties. The events provided opportunities for the HKMA to engage with international investors, exchanging insights and best practices on ESG implementation.

To facilitate internal knowledge sharing, every EFIO ESG Committee meeting includes a standing agenda item comprising a discussion about ESG news and the market landscape (see the *Governance* section above). Furthermore, sustainability and green finance-related topics were frequently featured in the HKMA's internal training programmes, aiming to equip staff members with the necessary knowledge to navigate the complexities of ESG considerations.

Responsible Investment

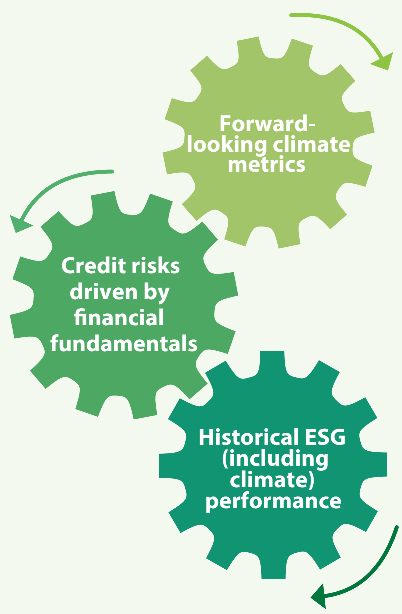
Risk management

Integrating ESG factors in credit analysis

To ensure long-term portfolio resilience, climate risk management is an integral part of the HKMA's investment processes for all asset classes. Specifically, ESG factors have been incorporated in the credit risk model for fixed income portfolios of the Exchange Fund since 2017, with regular monitoring of portfolio ESG profiles (see Figure 8).

Recognising the multifaceted nature of climate change and the importance of future transition potential of investment assets, the HKMA has since 2023 incorporated forward-looking climate factors in the credit risk model, placing additional emphasis on climate-related commitments and transition plans of fixed income issuers.

Figure 8 Factors in credit risk analysis



Advocating active ownership

The HKMA believes in enhancing the long-term sustainable value of investments through stewardship and continuous engagement. It attaches high importance to the ESG and stewardship practices of its suite of external managers, who are entrusted with discharging active ownership responsibilities and exercising shareholder rights on behalf of the HKMA. ESG considerations are integrated into the external manager selection, appointment and monitoring processes to align with the HKMA's commitments.

To enhance transparency regarding the indicators it uses to evaluate the counterparties and service providers, we launched the inaugural HKMA ESG Expectations in 2024, outlining the preferred ESG practices of our counterparties and service providers, including, for example, issuers or counterparties of financial instruments, external managers and GPs.

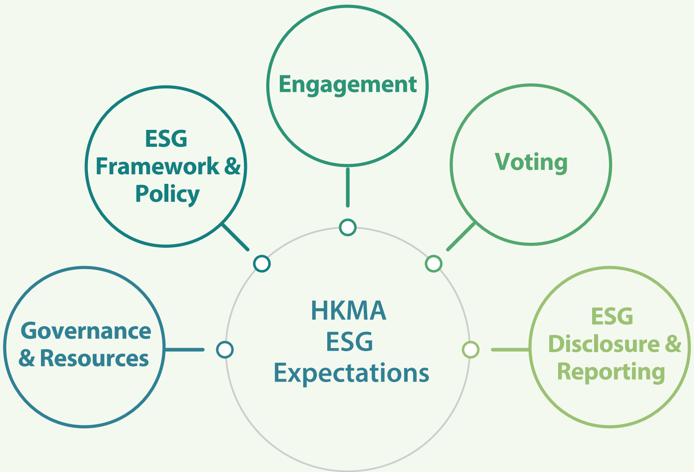
Focusing on climate change and transition, the HKMA ESG Expectations are structured around five key pillars: governance and resources, ESG framework and policy, engagement, voting, and ESG disclosure and reporting (see Figure 9).

The HKMA adopts a pragmatic approach when applying the HKMA ESG Expectations in the selection, appointment and monitoring process, recognising that some expectations may not apply universally to all investments and counterparties within its diversified portfolios. We will regularly review the HKMA ESG Expectations to incorporate the latest international standards and best practices, reinforcing our commitment to continuous advancement in ESG integration.

HKMA ESG Expectations

Responsible Investment

Figure 9 **Five pillars of the HKMA ESG Expectations**



Promoting 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. The HKMA conducts assessment using the HKMA's ESG due diligence questionnaire, which is based on the industry standard developed by the PRI and the Institutional Limited Partners Association[5] and includes the HKMA's proprietary questions. For real estate investments, green accreditation is also a predominant factor in the assessment.

On an ongoing basis, we incorporate ESG integration clauses in the legal documentation and require GPs to report ESG information, including climate risk assessment and metrics like carbon emissions of underlying investments, to promote transparency in the private market sector and facilitate our risk monitoring. To further address the current challenge of ESG data availability and standardisation, we are encouraging our GPs to utilise industry templates, such as those developed by the ESG Data Convergence Initiative[6].

Target and metrics

Targeting net zero emissions

The HKMA has set a target of net zero emissions by 2050 for the IP of the Exchange Fund. This target marks a significant milestone in the HKMA's RI journey.

To demonstrate accountability for the commitment, we announced as part of the Action Agenda that we will endeavour to reduce the weighted average carbon intensity (WACI)[7] of the Exchange Fund's public equities by 67% from 2017 levels by 2030. The interim milestone is grounded in the latest science from the Intergovernmental Panel on Climate Change and has been reviewed by an external consultant.

However, challenges persist in establishing interim milestones for other asset classes due to limitations in data availability and lack of well-founded net zero pathways. The HKMA will actively monitor market practices to track relevant decarbonisation progress.

Guided by the RI framework and approaches described in the *Strategies* section above, we are steadfastly pursuing our RI efforts to facilitate progress towards the target.

5 PRI, *Limited Partners' Private Equity Responsible Investment Due Diligence Questionnaire* (https://www.unpri.org/download?ac=15124).

6 The ESG Data Convergence Initiative is a collaborative initiative between GPs and limited partners to enhance efficiency of ESG data collection and drive convergence around meaningful ESG metrics for the private markets.

7 WACI is a metric recommended by the Task Force on Climate-Related Financial Disclosures and NGFS. It measures a portfolio's exposure based on Scopes 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.

Responsible Investment

Measuring carbon emissions

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

We continue to monitor the WACI, expressed as tCO_2e[8]/US$ million revenue, for the Exchange Fund's portfolios in line with industry practices. Scope 3 emissions[9] are excluded due to the low data availability and the absence of a consistent calculation methodology at this time, which leads to significant estimations dependent on the methodologies of data providers.

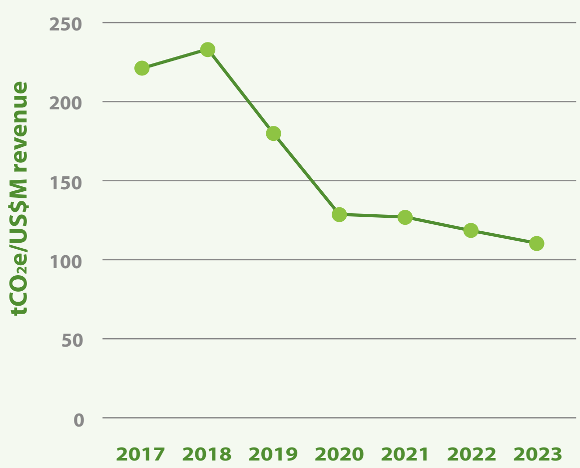
Monitoring of emissions from public equities portfolios takes precedence because of the more reliable measurement and disclosure practices in the market. This focus is in line with results from the climate scenario analysis, which indicate that public equities are more susceptible to climate risks compared to other asset classes within the Exchange Fund.

Chart 1 presents the WACI of the Exchange Fund's public equities portfolios from 2017 to 2023, using methodologies and tools developed by an external data provider. Where reported data were unavailable, the data provider estimated carbon emissions using its proprietary model. Together, the reported and estimated data together covered more than 98% of the asset values of the assessed portfolios in 2023.

As of the end of 2023, the WACI of the public equities portfolios stood at 109 tCO_2e/US$ million revenue, reflecting an 8% reduction compared to 2022 and an overall 50% reduction compared to the 2017 level. This figure remains lower than the market investment benchmark, indicating the Exchange Fund's lower exposure to carbon-intensive assets relative to the broader market.

The pathway to net zero is, however, non-linear. The decarbonisation of the Exchange Fund's portfolios is subject to short-term fluctuations influenced by various factors beyond emissions alone, such as changes in portfolio asset mix, strategies in response to market developments and fluctuations in underlying asset valuations.

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).

8 tCO_2e refers to tonnes of carbon dioxide equivalent.
9 Scope 3 emissions refer to all other indirect emissions that result from the activities of an organisation.

Responsible Investment

Focusing on long-term transition

While the WACI is an important metric for assessing carbon exposure of investment portfolios, it relies on investee companies' disclosures, which are inherently backward-looking, and does not account for future potential for low-carbon transitions.

Importantly, the HKMA's net zero philosophy does not rely on simply excluding heavy emitters; rather, it aims to support a whole-of-economy transition by engaging with companies and funding solutions that facilitate the transition. Therefore, short-term increases in the WACI may occur before positive climate outcomes are realised in the longer run. Overreliance on this single indicator may encourage short-termism, potentially undermining the long-term objective of a comprehensive economic transition.

To complement its analyses, the HKMA has been monitoring several forward-looking metrics. It is observed that a majority of companies within the Exchange Fund's investments already have climate-related targets, with a growing trend towards aligning with a net zero pathway.

As international disclosure standards and collaborative efforts continue to advance, we will remain vigilant in monitoring these developments to identify suitable metrics for enhancing our climate exposure monitoring and reporting.