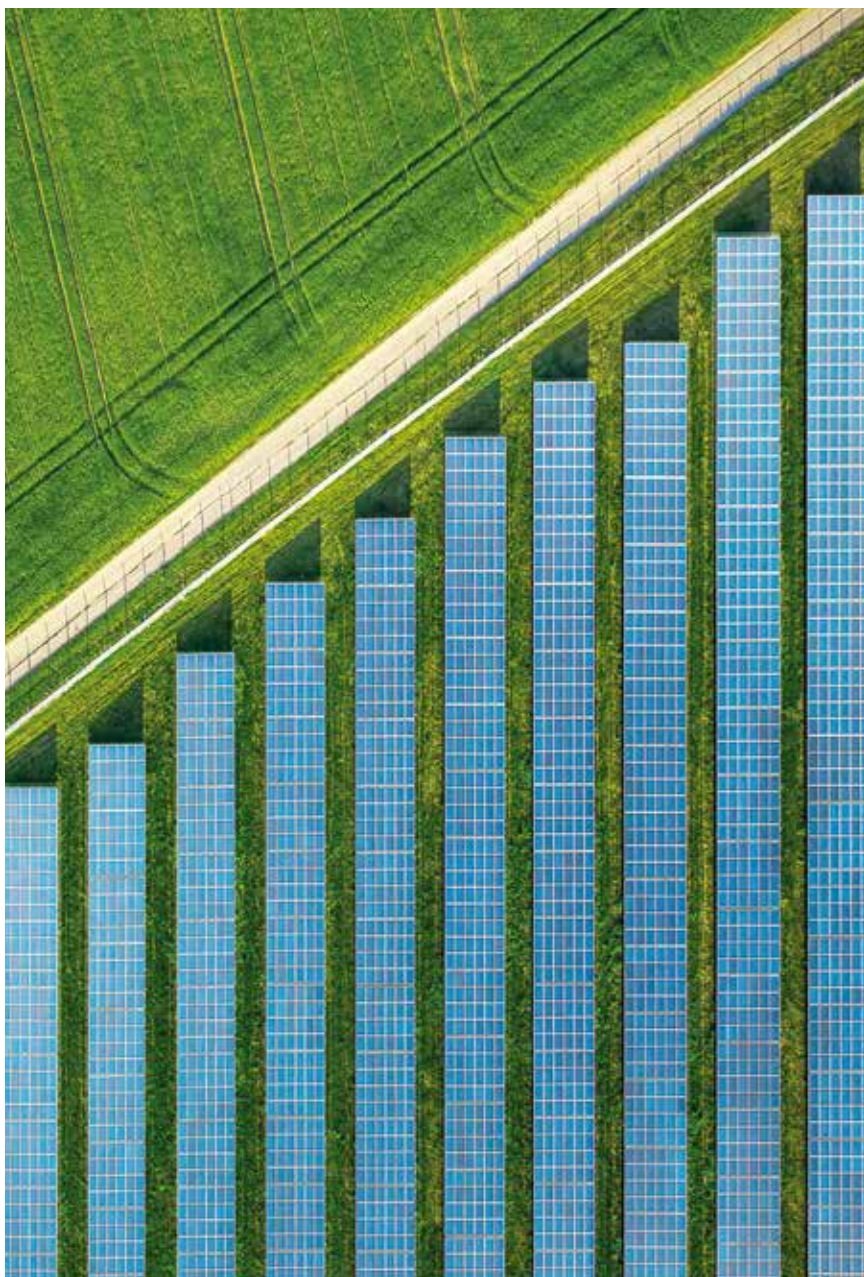


# Green & Sustainable Finance

From vision to market practice



綠色及可持續金融  
從願景到市場實踐

Edited by HKEX 香港交易所主編

VOLUME 1 上冊

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VOLUME 2 下冊

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## Foreword

# Green and sustainable finance: Evolving and mainstreaming

Hurricanes, floods, droughts, bushfires... the increasing frequency of extreme weather events around the world points to the devastating effects of the climate crisis and the need for immediate global action.

In recent years, global and regional leaders have made commitments to tackle climate change. Asia's three biggest economies, China, Japan and Korea, which together emit around one third of all global carbon emissions (according to 2018 data compiled by the International Energy Agency), have made some brave carbon neutrality commitments. In late 2020, Chinese President Xi Jinping said the country aims to peak carbon emissions before 2030 and achieve carbon neutrality before 2060. The Hong Kong Special Administrative Region (HKSAR) government has also committed to carbon neutrality by 2050. And many other nations, though not all, have made similar pledges.

As the global community works towards achieving the goals set out in the Paris Agreement and the United Nations Sustainable Development Goals, capital markets have a key role to play in the smooth transition to a low-carbon, climate resilient economy.

Such a transition requires huge investment — USD 90 trillion by 2030 according to the United Nations. It also requires an ever-innovative financial system, a robust ecosystem of Green and Sustainable Finance (GSF) products and services, and a supportive regulatory environment.

The business case for sustainable business practices, and sustainable finance, is becoming stronger day by day. Today, an increasing number of investors are factoring in environment, social and governance (ESG) considerations, driving the growth of ESG investment and providing funds for sustainable development. The number of

signatories to the United Nations-supported Principles for Responsible Investment (PRI) increased from 1,295 institutions in 2016 to 3,513 institutions in 2020, while assets under management increased from USD 86.3 trillion to USD 103.4 trillion.

Many sustainable and green investments have a long-term horizon, and their objectives and revenue structures may be different from those in the traditional economy. To facilitate the growth of GSF we need to promote knowledge sharing, develop a robust product ecosystem, and establish frameworks and standards for market practices.

As the locus of financial market infrastructure, exchanges play an important role in supporting the formation and development of GSF. Hong Kong Exchanges and Clearing Limited (HKEX) functions to promote product innovation, information disclosure, and market liquidity, as well as connecting companies with investors and other stakeholders.

The development of GSF and ESG investment is uneven across global markets. Demand for sustainable investment is skewed, with Europe accounting for 34%-53% of the global total during 2016 to 2020, according to the Global Sustainable Investment Alliance. The world's first green bond was issued in Europe in 2007, but there was not a comprehensive policy framework for green bonds until 2019.

In Asia, the sustainable finance journey is still in its early days. Countries such as China have been driving regional change with strong commitments and innovative solutions. The People's Bank of China estimated that the infrastructure investment required could reach RMB 100 trillion to RMB 200 trillion by 2060. To support these targets, China adopted a top-down approach and was the first economy in the world to develop a comprehensive policy framework for green finance, launched in 2016.

Turning to Hong Kong as an example: As one of the world's leading international financial centres, Hong Kong is strongly positioned to lead Asia's sustainable finance transition. Hong Kong is now the largest asset management market in the region, the largest offshore liquidity pool for Renminbi in the world, and one of the largest capital raising centres in the world. With its world-class business infrastructure, sound regulatory environment, diversified pools of capital, liquidity, investors, financial products, and professional expertise, the Hong Kong market's role as a super-connector between China and the rest of the world will allow it to play a leading role in Asia's, and the globe's, green finance transition.

Following the announcement by the HKSAR government of its carbon-neutrality target, the Cross-Agency Steering Group for Green and Sustainable Finance was established to support these developments. The government had also previously announced a HKD 100 billion green bond programme in 2019, one of the world's largest government issuance schemes.

Looking more broadly, sustainable finance is a key strategic priority in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), with Hong Kong functioning as its international green finance hub. With a population of 86 million, the GBA region represents a new economic powerhouse with a key role to play in GSF. In September 2020, the HKSAR government joined forces with other GBA governments to form the Guangdong-Hong Kong-Macao Greater Bay Area Green Finance Alliance, with the aim to promote research and incubate green investments that will benefit the region.

As a regulator, market operator, and a corporate, HKEX has a critical role to play in the global sustainability journey. The HKEX Group's responsibility as a regional change agent is notable: providing the framework, guidance, transparency and access to resources for the long-term development of a robust sustainable finance ecosystem.

As a regulator with oversight for over 2,500 listed issuers, HKEX supports a framework and guidance for ESG disclosure, application and implementation, through listing rules and market education. As a market operator, the organisation promotes transparency, access to resources, and growth opportunities for issuers and investors, and supports a range of sustainable finance products. HKEX is also a passionate global advocate for GSF, driving market dialogue and policy change to position Hong Kong as a sustainability leader.

As a listed company, HKEX is committed to leading by example as a corporate champion in sustainability. As part of our commitment to accelerating the transition to a net-zero global economy, HKEX has recently joined the Glasgow Financial Alliance for Net Zero (GFANZ) and the Net Zero Financial Service Provider Alliance.

The development of global green finance has come a long way, but there is still much work to be done. Current challenges include the lack of universal classification standards; the availability and quality of ESG data; the diverse business practices of product labelling and potential misconduct such as greenwashing; and the limited spectrum of ESG investment products and risk management tools. HKEX encourages all stakeholders to work together to resolve these challenges for the development of GSF and ESG in the long run.

HKEX has prepared this book to bring together some of the world's leading institutions and experts in the field of GSF, and to introduce a selection of the latest market innovations and practices. We hope that this book will help all market participants, including issuers and investors, to better understand GSF and ESG investment, and implement them more extensively.

## BA Shusong

Chief China Economist  
Hong Kong Exchanges and Clearing Limited

November 2021

## 前言

# 綠色及可持續金融： 不斷演變、漸成主流

颶風、洪水、旱災、山火等極端天氣事件頻頻在全球各地發生，氣候危機的破壞性影響有目共睹，全球採取應對行動實在刻不容緩。

近年來，全球及區內領導人紛紛就應對氣候變化作出承諾。亞洲三大經濟體——中國、日本及韓國——均已果斷作出多項致力達致碳中和的承諾（根據國際能源署編製的 2018 年數據，三國合共佔全球碳排放總量約三分之一）。於 2020 年年底，中國國家主席習近平表示，中國將力爭於 2030 年前實現碳達峰，於 2060 年前實現碳中和。香港特別行政區（香港特區）政府亦承諾於 2050 年前實現碳中和。許多其他（雖非所有）國家亦先後響應支持，相繼作出類似承諾。

隨着全球各國均致力實現《巴黎協定》所訂的目標及《聯合國可持續發展目標》，資本市場對促進經濟順利向低碳、靈活應對氣候變化的模式轉型，亦扮演着重要角色。

這個經濟轉型需要巨額投資——根據聯合國資料，於 2030 年前這方面須耗資 90 萬億美元。這轉型亦需要一個不斷創新的金融體系、蓬勃的綠色及可持續金融產品及服務生態圈，以及相關監管環境的推動支持。

同時，可持續營商實踐與可持續金融對企業的發展亦越見重要。如今，越來越多投資者在作出投資決定前都會考慮環境、社會及管治（**Environment**、**Social**、**Governance**，簡稱 **ESG**）方面的因素，推動了 **ESG** 投資的增長，並為可持續發展提供了資金。聯合國支持的《責任投資原則》的簽署機構數目已由 2016 年的 1,295 家增加至 2020 年的 3,513 家，而其管理的資產總值亦由 86.3 萬億美元增加至 103.4 萬億美元。

許多可持續及綠色投資都具有長遠視野，其目標及收益結構可能有別於傳統經濟。為促進綠色及可持續金融的發展，我們需要推廣知識共享、建立強大的產品生態圈，以及制定有關市場常規的框架及標準。

作為金融市場基建的核心，一眾交易所在支持綠色及可持續金融的創設與發展方面發揮着重要作用。香港交易及結算所有限公司（「香港交易所」）亦一直致力促進產品創新、提升信息披露及市場流動性，並充當上市公司與投資者及其他持份者之間的橋樑。

環顧全球，國際市場在發展綠色及可持續金融與 ESG 投資方面的步伐並不一致，各國對可持續投資的需求各有不同。根據全球可持續投資聯盟的數據，歐洲於 2016 年至 2020 年期間佔全球可持續投資總值的 34% 至 53%；2007 年全球首隻綠色債券亦是於歐洲發行，但直至 2019 年才見其有針對綠色債券的全面政策框架。

在亞洲，可持續金融仍處於初步發展階段。包括中國在內等多個國家一直透過堅定承諾及創新解決方案推動區內變革。據中國人民銀行估計，到 2060 年，可持續金融所需投入的基建投資將會達人民幣 100 萬億元至 200 萬億元。中國採取了自上而下的方式實踐可持續發展的目標，於 2016 年推出全面的綠色金融政策框架，亦成為了全球首個制定相關政策框架的經濟體。

以香港為例：香港作為全球領先的國際金融中心之一，在引領亞洲進行可持續金融轉型負起舉足輕重的責任。香港現為區內最大的資產管理市場、擁有全球最大的離岸人民幣資金池，以及是全球最大的集資中心之一。憑藉其世界一流的商業基礎設施、完善的監管環境、多元化的資本供應、流動性、投資者、金融產品及專業人才，香港市場能作為超級連繫人，緊密連接中國與世界各地，帶領亞洲以至全球進行綠色金融轉型。

在香港特區政府公佈其碳中和目標後，「綠色和可持續金融跨機構督導小組」正式成立，以支持相關發展。香港特區政府早於 2019 年已公佈一項涉及 1,000 億港元的綠色債券計劃，是全球最大的政府發行計劃之一。

宏觀來看，可持續金融是粵港澳大灣區的關鍵戰略重點，當中香港肩負國際綠色金融樞紐的角色。粵港澳大灣區人口達 8,600 萬，具備龐大的經濟發展潛力，並有能力在推動綠色及可持續金融發展方面發揮重要角色。2020 年 9 月，香港特區政府與其他大灣區政府攜手成立「粵港澳大灣區綠色金融聯盟」，旨在推動研究及培育有利區內發展的綠色投資。

作為同時是監管者及市場營運機構的一家企業，香港交易所在全球可持續發展進程中任重道遠。香港交易所集團對推動區內變革也起着顯著作用：為長遠發展穩健的可持續金融生態圈提供框架、指引、透明度及資源渠道。

作為逾 2,500 家上市發行人的前線監管者，香港交易所一直透過《上市規則》及市場教育，為 ESG 的信息披露、應用及實施提供框架及指引。作為市場營運機構，香港交易所為發行人及投資者提供透明度、資源渠道及增長機會，並支持推出一系列可持續金融產品。除

此之外，香港交易所亦積極向全球推廣綠色及可持續金融，推動市場對話及政策改變，將香港定位為可持續發展的領導者。

作為上市公司，香港交易所致力以身作則，作為可持續發展的企業模範。為表我們對推動全球向淨零經濟轉型的決心，我們最近更加入了「格拉斯哥淨零金融聯盟」（Glasgow Financial Alliance for Net Zero）及「淨零金融服務提供者聯盟」（Net Zero Financial Services Provider Alliance）。

全球綠色金融發展雖有長足進展，但仍要在多方面繼續努力，凝聚更多力量以取得成績。當前的挑戰包括缺乏統一分類標準；ESG 數據不齊備及質量參差；產品標籤的商業常規迥異及潛在不當行為（如漂綠）；ESG 投資產品以及風險管理工具不夠多元廣泛。香港交易所鼓勵所有持份者共同努力，齊心克服這些挑戰，令綠色及可持續金融與 ESG 的發展走得更前、走得更遠。

本書由香港交易所編製，集合綠色及可持續金融領域內的一些全球領先機構與專家的真知灼見，同時介紹了一些最新的市場創新及慣例。希望本書能有助所有市場參與者，包括發行人和投資者，更深入了解並全面實踐綠色及可持續金融與 ESG 投資。

## 巴曙松

香港交易所 首席中國經濟學家

2021 年 11 月

## Afterword

# Capital markets, the net-zero transition, and Hong Kong's role as a change agent

At least USD 90 trillion is required to drive the transition to a net-zero global economy, and capital markets have a key role to play, according to the United Nations (UN).

And we need global action now. An August 2021 report by the Intergovernmental Panel on Climate Change (IPCC) detailing the current pace of global warming was described as a “code red for humanity” by Antonio Guterres, the Secretary-General of the UN.

The IPCC report shows that global greenhouse gas emissions will only fall 1% by 2030 based on current commitments. According to the UN Net Zero Coalition, we need at least a 45% reduction by 2030 to limit global warming to 1.5°C and there is no shortcut to reaching our sustainability goals.

Related large-scale investments are required; and this book sets out some broad analysis of the various roles that exchanges and various parties can play in mobilising green and sustainable finance (GSF) to drive the world's net-zero transition.

The book has examined the global GSF ecosystem and used China as a case-study to take an in-depth look at how it is developing GSF to achieve its climate goals, what opportunities exist in China's green and sustainable investment market, and how the Hong Kong Special Administrative Region (HKSAR) can grow as a sustainable finance hub.

The book also charted the rise of green and sustainable financial instruments, as well as exploring advances in financial technology that measures issuers' environment, social

and governance (ESG) performance; and the role of exchanges in developing and strengthening the broader GSF ecosystem.

Sitting at the heart of Asia's capital markets, Hong Kong Exchanges and Clearing Limited (HKEX) sees itself as a change agent and has a critical role to play in this sustainability journey as a regulator, market operator, and corporate. As part of the Green & Sustainable Finance Cross-Agency Steering Group, HKEX also works closely with the HKSAR government and financial regulators to accelerate the growth of sustainable finance in Hong Kong and the Guangdong-Hong Kong-Macao Greater Bay Area.

New GSF products and asset classes have emerged in the past few years, and we will undoubtedly see more in the future. New policies and market initiatives are being released nearly every day to ensure that GSF and ESG investments contribute to our planet. This book provides a variety of perspectives on GSF that are certainly not exhaustive and we welcome your feedback.

I would like to thank my HKEX colleagues across all departments for their support in creating this book. My thanks also go to our publisher, The Commercial Press (H.K.) Limited, and the various sustainable associations and professionals from market institutions for their notable contributions.

The rich array of content in this book shows that capital markets are fast-evolving and that GSF is mainstreaming. It is now up to us, as individuals, businesses, and investors, to invest in the right projects for ourselves, and for the planet.

## Grace HUI

Managing Director, Head of Green and Sustainable Finance, Markets Division  
Hong Kong Exchanges and Clearing Limited

November 2021

## 後記

# 資本市場、淨零轉型及 香港市場推動變革的角色

根據聯合國的資料，推動全球轉型至淨零經濟至少需要 90 萬億美元，故資本市場能發揮關鍵作用。

我們現在就需要全球一起採取行動。政府間氣候變化專門委員會 (Intergovernmental Panel on Climate Change, 簡稱 IPCC) 於 2021 年 8 月發表了報告，詳述當前全球暖化的步伐，聯合國秘書長古特雷斯稱這步伐為「人類的紅色警報」。

根據 IPCC 的這份報告，按照目前各國所作的承諾，全球溫室氣體排放量到 2030 年才將僅下降 1%。然而，根據聯合國淨零聯盟，我們需要於 2030 年前至少減少 45% 的排放量，方有望將全球暖化限制在攝氏 1.5 度，而我們要達致可持續發展目標，實在別無捷徑。

相關的大規模投資自不可少。就此，本書嘗試對交易所及各方在推動綠色及可持續金融來達至全球淨零轉型上可以發揮的各種作用作出廣泛分析。

本書檢視了全球綠色及可持續金融的生態圈，並以中國作為個案研究，細看中國如何發展綠色及可持續金融以實現其氣候目標、中國的綠色及可持續投資市場有何機遇，以及香港特別行政區可如何發展為可持續金融樞紐。

書中亦展示綠色及可持續金融工具冒起的趨勢，又探索金融科技的進步，用以衡量發行人的環境、社會及管治 (Environment、Social、Governance, 簡稱 ESG) 方面的表現；以及交易所在發展並強化更廣泛的綠色及可持續金融生態圈方面的角色。

香港交易及結算所有限公司 (香港交易所) 置身於亞洲資本市場的中心，以推動變革為定位，並同時作為監管機構、市場營運者的一家企業，一直致力協助推動可持續發展的進程。作為「綠色和可持續金融跨機構督導小組」的成員，香港交易所亦與香港特別行政區政府及

各金融監管機構緊密合作，協力加快推進香港及粵港澳大灣區可持續金融的發展。

過去幾年，市場漸漸出現不少新的綠色及可持續金融產品和資產類別，相信未來還會陸續出現更多。全球各地幾乎每天都有新的政策和市場舉措出台，以確保綠色及可持續金融與ESG投資對地球的環境生態有所貢獻。本書嘗試羅列關於綠色及可持續金融的各種觀點，雖不能詳盡無遺，但還望拋磚引玉，聽取你的寶貴意見。

在此感謝香港交易所各科部同事對本書出版的支持，亦感謝出版商商務印書館（香港）有限公司，以及多個可持續發展協會與市場機構的各位專家，對本書所作出的貢獻。

本書的豐富內容從多角度告訴我們：在迅速演變的資本市場中，綠色及可持續金融已漸成主流。我們不論作為個人、企業還是投資者，現在都是時候細加思索，為自己、為地球作出正確的投資。

### 許淑嫻

香港交易所  
市場科董事總經理  
綠色及可持續發展金融主管

2021年11月

## Message from HKEX

As part of our ongoing efforts to support the development of sustainable finance, HKEX has brought together leading experts in the field to publish the “Green & Sustainable Finance (GSF)” book. With unique insights on China and Hong Kong, coupled with global market views, innovations and practices, the book aims to help all market participants get a better understanding of GSF investment.

The book reflects HKEX’s commitment to furthering the development of sustainable markets globally, recognizing the important role we play as a market operator and regulator.

To learn more about the GSF book, please contact [CCEO@HKEX.COM.HK](mailto:CCEO@HKEX.COM.HK).

## 香港交易所致意

為支持可持續金融的發展，香港交易所匯聚行業領先的專家，出版了《綠色及可持續金融》一書。該書以對中國和香港的獨特見解，結合全球市場觀點、創新和實踐，旨在幫助市場參與者提升對綠色及可持續金融與投資的理解。

該書反映了香港交易所對促進全球可持續市場發展的承諾，亦印證香港交易所擔當著市場運營者和監管者的重要角色。

如對該書有任何查詢，請電郵至 [CCEO@HKEX.COM.HK](mailto:CCEO@HKEX.COM.HK)。