FSRG
HONG KONG GREEN FINANCE SERIES

Green Bonds
Green and Sustainability Linked Loans
Green Mortgages and Mortgage Backed Securitisation

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FSRG Briefs
Hong Kong Green Finance Series

- ***Green Bonds***
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Green Bonds

As an international financial hub, Hong Kong aims to participate actively in the global transition towards a low carbon and sustainable economy. For many years, sustainability issues have been an important aspect of the political and business agenda in Hong Kong. In delivering the United Nations Sustainable Development Goals, and elevating Hong Kong's status as a leading centre of green finance, the financial sector plays a critical role in allocating capital to sustainable economic activities.

Overview

According to the Climate Bonds Initiative (CBI), the global green bonds market reached over US$$2.2 trillion in 2023 to date[1]. While green bonds are yet to constitute a significant proportion of capital raising activities, making up only 1.5% of the total bond market[2] – the five year average annual growth rate of ESG bond issuance during the period 2014-2019 exceeded 50%, compared to around 3-4% annual growth for overall bond issuance over the same period[3]. In this regard, the green bond market exhibits clear growth potential.

What is a Green Bond ?

As a subset of the green, social, sustainability, transition bonds, and sustainability linked debt instruments (ie. GSS+), green bonds are a financing instrument in which proceeds will be used to finance or refinance green projects with environmental benefits. A green bond is differentiated from a regular bond by the commitment of the issuer to earmark the proceeds and use them for environmentally friendly projects. As more and more investors seek to hedge against climate related risks and satisfy responsible investment mandates, green bonds have become the "poster child" of sustainable financing.

Green bonds are recognised as a win win innovation in the sustainable finance market, creating benefits to both issuers and investors.

For issuers, green bonds generally enjoy:

1) A lower cost of borrowing (aka "greenium") and more government subsidies to cover their expenses on bond issuance and external review services. The cost advantage is prominent when the green bond has received independent verification or certification. The Greenium may also incentivize other meaningful green investments.[4]

2) Better corporate image which might result in higher share price, if the green bond is verified or certified, again reflecting the importance of transparency.

3) Diversification of investor base: issuers tend to attract a wider pool of international investors.

4) Positive impact on brand development: the market may respond positively to the issuer's efforts to reach Net Zero targets.

[1] Climate Bond Initiative. (2022). https://www.climatebonds.net/

[2] King D, Clatworthy R, Collins L, Palmucci F. (2021). The green bond market. Is the fixed Income fulcrum tilting Green?

[3] Hong Kong Institute for Monetary and Financial Research. (2020).

[4] https://www.federalreserve.gov/econres/ifdp/the-green-corporate-bond-issuance-premium.htm

Green bonds are equally welcomed by investors, especially in Hong Kong where there is a high level of trust in transparency and disclosure standards.

For investors,

1) There is growing evidence that ESG investments may outperform their counterparts and be more resilient in adverse market conditions.

2) Providing investors with an opportunity to reflect their ESG values in their investment decisions.

3) Satisfying ESG requirements and green investment mandates.

4) Offering diversification benefits from the perspective of portfolio optimization. Use of proceeds reporting also enhances risk assessment

Principles and Standards

Green Bond Principles

The green bond market to date is largely regulatory light but best practice driven. Issuers are encouraged to follow Green Bond Principles (GBP) put out by ICMA, with four parameters: Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds and Reporting.

Climate Bonds Standard and Certification Scheme

The Climate Bonds Initiative provides green definitions and standards – that are sector specific, science based, widely supported – for certification purposes.

Market Landscape Around the World

Financial institutions in the European Union (EU) pioneered the development of green bonds. The United States (US) has also seen particular efforts from corporates in a bid to meet their own environmental and net zero targets.

European Union

The European green bond market is dominated by the European Investment Bank (EIB) and the European Commission. Owned by the 27 Member States of the EU, the EIB effectively created the market in 2007 with the issuance of its first Climate Awareness Bond. Fuelled by regulatory development and sustained investor demand, the EU has become the global leader in green bonds, with a total issuance of US$265 billion in 2021[5].

United States

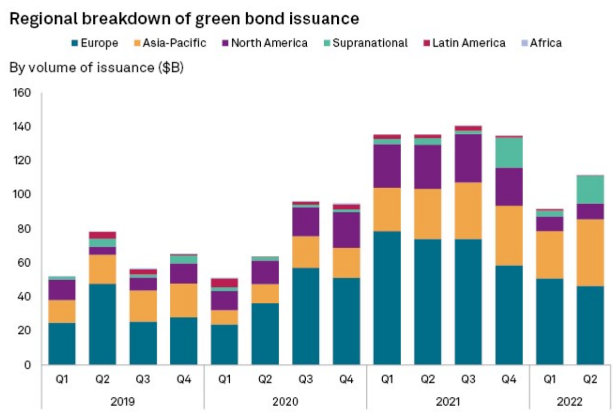
In 2021, the US accounted for around 16 percent of the total US$500 billion's worth of green bonds

[5] https://www.statista.com/statistics/1078071/green-bonds-issuance-value-europe/

world wide[6]. Compared to 2019 and 2020, the value of green bonds issued in 2021 increased significantly by 60%. As opposed to the more regulatory driven green bond markets in its EU peers, corporates play a bigger role in the US. For instance, Apple has allocated more than half of its green bond spend, totalling US$2.8 billion, and will continue to invest in green technology and projects that address carbon emissions.

Asia Pacific

In recent years, the world started to see a more balanced landscape across the world[7], with record growth of green bonds in China and more market participants in the Asia Pacific (APAC) region.



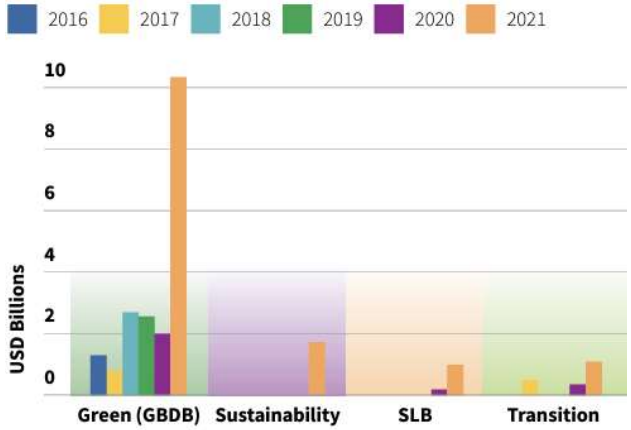
For instance, in early 2023, India issued its first sovereign green bond, joining other sovereign issuers headed by Hong Kong at US$9.8 billion, followed by Indonesia (US$5.4 billion), Singapore (US $1.7 billion) and South Korea (US$$0.8 billion).

The East West divergence is expected to narrow, as APAC governments make efforts to catch up competitively in the green and sustainable finance market.

Source: S&P Global (2022)

"Momentum in the green bond market in APAC has been especially strong in Asia in recent years, driven by national regulatory development and net zero targets. While this strong growth is positive, greater convergence of green bond standards in the region will be critical to maintaining an upward trajectory."
Alexandra Tracy, President, Hoi Ping Ventures

[6] https://www.statista.com/topics/9223/green-bonds-market-in-the-us/#topicOverview
[7] https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/europe-s-dominance-in-green-bond-market-fades-amid-record-growth-in-china-71321575



Source: Climate Bond Initiative (2022)

GSS+ debt originating from Hong Kong quadrupled YoY to reach USD57bn in 2021

Instrument type	Issuance volume in 2021 (USD bn)
Bonds	31.3
Loans	25.4
Total	**56.6**

Source: Climate Bond Initiative (2022)

In Hong Kong, the cumulative amount of green debt issuance reached US$20 billion as of July 2022. In 2021 alone, issuance of green debt instruments reached US$10.4 billion, which was a four time increase year on year (YoY)[8]. It marked the highest growth since the beginning of the dataset in 2016. Over the five years from 2016-2021, Hong Kong's labelled green debt market grew 6.5 times YoY to US$19 billion.

US$$31.3 billion of GSS+ bonds were issued in 2021, making up 45% of the total GSS+ debt totalled US$57 billion. Issuance of GSS+ bonds has again quadrupled from 2020, contributing one third of Asian GSS+ bonds in 2021. This points to increasing adoption of GSS+ bonds as a general corporate purpose green financing tool in Hong Kong.

Policy Driving Market for Green Bonds in Hong Kong

The growth of the green bonds market in Hong Kong has been largely driven by policy initiatives. To support Hong Kong's aspirations to be a regional green finance hub, the government seeks to align regulator standards with international best practice, such as that developed by the International Capital Market Association (ICMA). Meanwhile, it attracts more entities and investment by the following:

HKSAR Government Green Bond Programme (GGBP)	As of 31 July 2022, the HKSAR government has issued almost US$10 billion worth of green bonds under the GGBP. The proceeds are allocated to its Capital Works Reserve Fund whose scope and borrowing ceiling were expanded to HK$200 billion in July 2021, allowing a wider variety of green projects to benefit, including but not limited to public works projects. In early January 2023, there was a further successful offering of US$5.75 billion worth of green bonds. This was the first triple currency offering in Asia and by far the largest ESG bond issuance in Asia, attracting over US$36 billion equivalent in orders. Hong Kong sees continued strong demand from global institutional investors for green bonds, despite recent market volatility. Demand from retail investors looks equally promising. An inaugural retail green bond launched by the government in May 2022 attracted subscription capital of HKD$20 billion.

[4] Climate Bond Initiative. (2022). chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.climatebonds.net/files/reports/cbi_hk_briefing_2021.pdf

The Green and Sustainable Finance Cross Agency Steering Group	The Steering Group aims to coordinate the management of climate and environmental risks to the financial sector and support the government's climate strategies. The more time sensitive movements would be the potential adoption of climate related disclosures according to the Taskforce on Climate Related Financial Disclosures framework by 2025. The Steering Group is also working towards a green classification framework which facilitates easy navigation among the Common Ground Taxonomies, China and the European Union's taxonomies. This is an essential milestone to creating a common language that may be useful for market integration.

Role of Hong Kong in the China market

On regional front, while being the gateway to China, Hong Kong can leverage the green finance opportunities presented by the development of the Guangdong-Hong Kong-Macao Greater Bay Area and China's Belt and Road Initiative. Building on its traditional assets – long established financial and professional services for investment, as well as huge capital and talent pools - Hong Kong is also developing an ecosystem for verification and certification, to enhance the quality of ESG information disclosure and converge towards international standards.

There are particular opportunities to tap China's enormous investor base for green bond offerings in Hong Kong. For example, January's sovereign green bond offering doubled the size of its RMB tranche to RMB10 billion to cater for Mainland investor demand and attract increased participation through Southbound Trading under Hong Kong Exchange's (HKEx) Bond Connect programme. This allowed Hong Kong to access investors who had not participated in the government's previous green bond issuances, and reinforced Hong Kong's status as a leading offshore RMB centre.

Future Development and Outlook

To keep pace with the global trend and nurture uptake of the local market, Hong Kong expects to develop a robust ecosystem for sustainable growth and create a fast growing green bond segment within the overall bond market. At the same time, the Hong Kong GSS+ market expanded into new types of thematic debt, such as sustainability linked debt, to offer greater flexibility. The market continues to expect burgeoning growth in transition finance products to attain a general performance target. While HKEx is already the most popular listing venue for China's offshore green bonds, more effort is needed to harmonize taxonomies and facilitate cross border investment to allow global investors to participate in China's decarbonization efforts.

"Hong Kong is becoming a place of choice for both global issuers and investors seeking diversification. In addition to being a leading offshore Renminbi centre, Hong Kong is also rapidly gaining credibility as a green finance hub."
Alexandra Tracy, President, Hoi Ping Ventures

Green and Sustainability Linked Loans

Following the release of the Paris Agreement, both Hong Kong and China have set ambitious climate targets to limit the increase of the global average temperature. As set out in Hong Kong's Climate action plan, the government aims to lower emissions 36% 2030 and achieve carbon neutrality by 2050[9]. To this end, Hong Kong has continued to expand its sustainable finance products offerings, issuing US$31.3 billion in 2021 (including green bonds and loans), which represented a quadrupling of the total amount of green and sustainable debt from 2020[10].

Under the government's Green and Sustainable Finance Grant Scheme, the private sector has issued HK$150 million through 170 different green and sustainable instruments. While not as large a segment as green bonds, green loans remain an important part of Hong Kong's multipronged strategy for promoting green finance.

What are Green Loans ?

Green loans are any type of loan instrument, including term loans and revolving credit facilities, made to finance or refinance new and/or existing eligible environmental or 'green' projects. Similar to the structure of green bonds, the proceeds of a green loan are required to be earmarked for a specific use, which may be verified by external review.

For example, The Climate Bonds Initiative's (CBI) Certification Scheme[11] requires that proceeds are allocated to assets and projects that meet specific environmental indicators, metrics, and targets. It also requires verification of allocation of proceeds and ongoing monitoring by approved verifiers to confirm that these continue to be met through the life of the loan.

The first CBI certified green loan was a GBP80 million credit facility for an upgrade of commercial buildings, taken out in 2016. To date, US$254 billion of bonds and loans have been certified under the CBI Certification Scheme. (The exact amount may be higher as many loans are noted as "confidential").

Green loans are sometimes included in overall green financing programmes which comprise a mix of bonds, loans, and other funding, such as the programme put in place by Contact Energy (New Zealand) to finance its geothermal operations[12].

While corporates are by far the most prevalent borrower type for green loans and private placements, governments have also used such instruments. For example, Ghana's government agreed to a sovereign green loan to raise funding for its Water for All policy programme in September 2020.

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[9] https://www.hk2050isnow.org/resource/towards-a-better-hong-kong-pathways-to-net-zero-carbon-emissions-by-2050/

[10] https://www.info.gov.hk/gia/general/202202/23/P2022022200567.htm

[11] https://www.climatebonds.net/certification

[12] https://contact.co.nz/aboutus/sustainability/financial-sustainability

What are Sustainability Linked Loans ?

Unlike green loans, sustainability linked loans (SSLs) are not conditional upon use of proceeds, but are instead linked to predetermined Sustainability Performance Targets (SPTs) and associated Key Performance Indicators (KPIs) or third party environmental, social and governance (ESG) scores/ratings. As a result, issuers who are unable to issue a use of proceeds instrument because they do not have sufficient capital associated with a green project or lack the capacity to implement effective tracking or the reporting practices required, can still tap into the sustainable debt market by issuing SSLs.[13]

	Green loans	Sustainability linked loans
Aim	To facilitate and support environmentally sustainable economic activity.	To facilitate and support environmentally and socially sustainable economic activity.
Definition	Loan instruments made available exclusively to finance or refinance new or existing "green projects".	Loan instruments and/or contingent facilities (such as bonding lines, guarantee lines or letters of credit) which incentivise the borrower's achievement of ambitious, predetermined sustainability performance objectives.
Restrictions on purpose	The fundamental feature is the utilisation of the loan for "green projects". The Green Loan Principles set out a non-exhaustive list of 10 categories of green projects, including renewable energy, energy efficiency and pollution prevention and control. Loan proceeds should be credited to a dedicated account or otherwise tracked.	No specific requirement for use of proceeds – loan could be for a borrower's general corporate purposes.
Impact on pricing of borrower performance	No pricing impact is contemplated in the Green Loan Principles. There are facilities which have been split into tranches for green purposes and for other purposes where the green tranche attracts lower pricing.	The hallmark of a sustainability linked loan is that the borrower's performance against predetermined sustainability objectives affects the interest rate, incentivising improved performance over time. The Sustainability Linked Loan Principles set out a non-exhaustive list of 10 common categories of objectives, including reduced greenhouse gas emissions, reduced water consumption and the amount of renewable energy generated or used by the borrower.
Review/reporting	Borrowers should maintain records of the use of green loan proceeds, including a list of the green projects to which the proceeds have been allocated together with a description of the project, amount allocated and the expected impact. External review is recommended but not required.	The need for external review of the borrower's performance against its predetermined sustainability objectives is decided on a case by case basis. For public companies, public disclosures may be sufficient to verify performance for the purposes of the loan.

Source: Linklaters

A borrower may also choose to arrange an SLL to highlight to lenders its green or social commitments and reinforce its sustainability strategy. Use of SLLs has been more prominent in hard to abate sectors (such as industrials and materials) due to their ability to function as a transition finance instrument, whereas the utilities sector typically uses green instruments.

SLLs are typically structured by linking performance against stipulated targets to a margin ratchet, such as a pricing lever, which rewards/penalises borrowers for reaching/missing these targets. The methodology for linking financing cost to KPIs is not currently standardised and the number of KPIs referenced will vary, but typically includes more than one and can amount to four or five.

Green and Sustainable Linked Loan Standards

Green loan standards have evolved over time. The Equator Principles (EPs) have long been used by financial institutions for managing ESG risks in the project finance market. The 10 EPs serve as a common baseline and risk management framework to identify, assess, and manage E and S risks in project finance. In general, the EPs seek to avoid negative impacts on ecosystems and communities were possible and be reduced, mitigated, or compensated when unavoidable.

The United Nations Principles for Responsible Investment has also influenced the incorporation of ESG issues into investment analysis and ownership policies and the disclosure of ESG issues while the shift to embed climate risk have also given rise to the Taskforce on Climate Related Financial Disclosures (TCFD) recommendations. First published in 2017, the TCFD recommendations are widely applicable and are structured around four major areas: governance, strategy, risk management, and metrics and targets. While compliance is currently voluntary, there is the potential for them to become mandatory: listed issuers in Hong Kong must be aligned by 2025, for example.

In addition to these voluntary principles, minimum standards for green loans have been developed by the Loan Market Association (LMA), the Asia Pacific Loan Market Association (APLMA) and the Loan Syndications and Trading Association (LSTA) with the support of the International Capital

[13] https://lpscdn.linklaters.com/-/media/files/thoughtleadership/green-finance/linklaters_the-rise-of-green-loans-and-sustainability-linked-lending-where-are-we-now_may-2020

Market Association (ICMA). First launched in 2018, and last updated in June 2022, the Green Loan Principles are similar in scope to ICMA's own Green Bond Principles[14] and contain four core recommendations:

1. **Use of proceeds** – funding for an asset or project which addresses climate change through mitigation or adaptation.
2. **Process for project evaluation and selection** – a borrower must communicate its environmental sustainability objectives and the process by which it has determined that its project is eligible.
3. **Management of proceeds** – proceeds from a loan should be credited to a dedicated account and tracked by the borrower for the designated purpose.
4. **Reporting** – annual information on the use of proceeds and material developments thereafter.

LMA, LSTA and APLMA have developed the Sustainability Linked Loan Principles (SLLP)[15], adapted from the ICMA Sustainability Linked Bond Principles. SLLP guidance covers the following components:

1. **Selection of KPIs** – KPIs should be relevant, core and material to the borrower's overall sustainability strategy as well as being capable of benchmarking to regulatory standards, taxonomies or goals set in international agreements such as the Paris Agreement or the United Nations Sustainable Development Goals.
2. **Calibration of SPTs (target setting)** – appropriately ambitious SPTs should be set, ideally in consultation with a sustainability coordinator. Alternatively, an external ESG rating could serve as a KPI for an SLL. Ideally, KPIs will already have featured in a company's sustainability reporting but, in recognition of the relatively short life of many private companies, a lack of history is not a barrier to accessing SLLs.
3. **Loan characteristics** – Pricing of the loan is linked to whether predefined SPT(s) are met. For example, the margin under the relevant loan agreement may be reduced where the borrower satisfies a predetermined SPT, as measured by the predetermined KPIs, or vice versa.
4. **Review** – While there is no accepted methodology for reporting, borrowers are encouraged to provide details of their methodology, calculation and assumptions to lenders and to report at least annually, ideally via a sustainability report.
5. **Verification** – Third party review and verification of KPIs to determine if performance triggers changes under the loan terms is encouraged. At the very least, an external opinion at the outset to confirm alignment of SLL with core components of the SLLP is recommended.

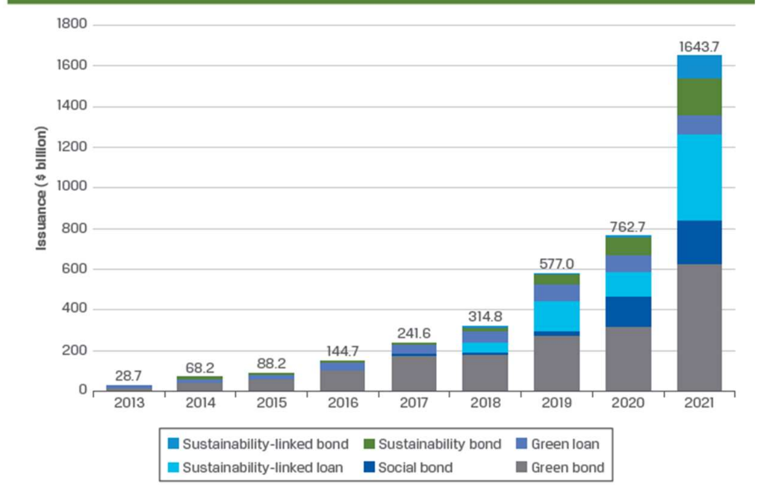
"Robust international standards have existed for green loans since 2018, and the Asia Pacific Loan Market Association has since put in place principles for SLLs. While the details of the standards vary in different markets, the central tenets behind all the principles are consistency, clarity and accountability"
Leonie Kelly, Director, Head of Sustainable Investment Consulting, Ogier

[14] https://www.lsta.org/content/green-loan-principles/
[15] https://www.lsta.org/content/sustainability-linked-loan-principles-sllp/

Green and Sustainability Linked Loan Market

SLLs have gained considerable traction in the market since their 2017 market debut. Issuance grew 244% between 2020 and 2021[16], making SSLs the second largest asset class within sustainable debt after green bonds, with a total issuance of US$747 billion.

Exhibit 26: Global Sustainable Debt Issuance, 2013–2021 (US$ billions)

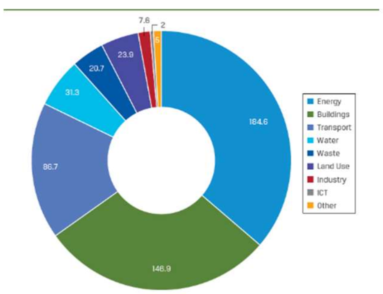


Source: BloombergNEF, "Sustainable Debt Issuance Breezed Past $1.6 Trillion in 2021" (2022). https://about.bnef.com/blog/sustainable-debt-issuance-breezed-past-1-6-trillion-in-2021/.

The rapid growth seen in SSLs versus green loans can most likely be explained by the increased flexibility they offer, as borrowers are not restricted to invest in only green projects.

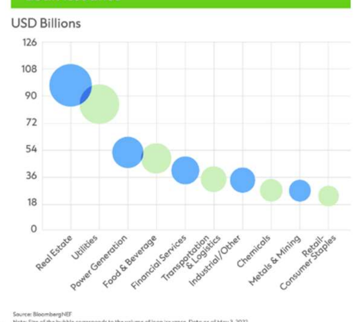
As SSLs are KPI based, they can be used to address a broad range of concerns. As of 2021, the most common KPI was the reduction of greenhouse gas emissions with around US$96.5 billion worth of SLLs tied to such commitments[17]. In total, environmental concerns accounted for nearly US$140 billion of SLL volume in the first half of 2021, with renewable energy, waste and water being common KPI focus areas. Social KPIs accounted for US$44.3 billion and while governance KPIs made up US$20.5 billion during the same period. CBI reports that for the first half of 2022 GSS+ volumes reached USD417.8bn, which represents a year on year (YoY) decrease of 27% against the first half of 2021.

In general, SSLs are more evenly distributed[18] across industry sectors than green loans[19]. This can be attributed to both their broader appeal and their application in hard to abate sectors such as metals and mining. As of 2021, real estate was the largest sector in the SSL market, while energy was the largest for green bonds and loans. Companies in the transportation and logistics, industry and chemicals sectors were also significant users of SSLs.

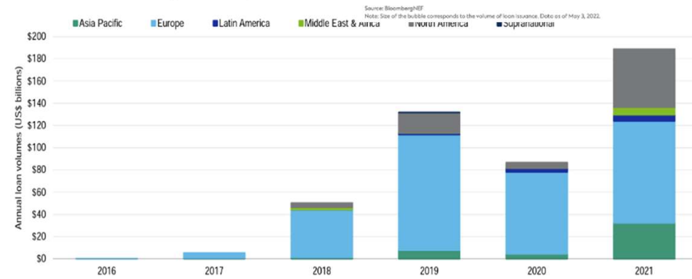


Note: Data cover up to the end of 2021. All debt instruments have been screened in accordance with the Climate Bonds Initiative Green Bond Database Methodology[289] and Social & Sustainability Bond Database Methodology.[290] Definitions of *green* are derived from the Climate

Ten Largest Sectors in Sustainability-Linked Loan Issuance



Annual volumes of sustainability-linked loans, US$ billions



Sources: Moody's ESG Solutions and Environmental Finance Bond Database

Annual aggregate volumes of green and SSLs over recent years have continued to rise annually, (except for 2020 during Covid)[20]. While the market continues to be dominated by Europe, the recent rise in SSLs was primarily driven by the United States. This may indicate a trend in which corporates across the globe are likely to replace old loan facilities with new ones linked to sustainability targets.

[16] BloombergNEF, "Sustainable Debt Issuance Breezed Past $1.6 Trillion in 2021" (2022).
[17] BloombergNEF - 2022
[18] BllombergNEF - 2022
[19] Climate Bond Institute
[20] Moody's, "Sustainable Bonds to Hit Record $1.35 Trillion in 2022, January 2022

United States

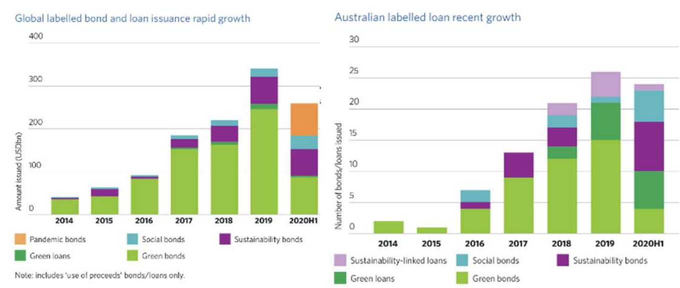
While loan volume is lower in the US, Bloomberg notes a high aggregate value of deals. Many of the larger transactions have been for subsidiaries of European companies that have also agreed sustainability linked loans in their own right.

Europe

European markets currently lead global sustainability linked loan volumes, although their dominance has reduced due to the increase in the US. Activity in Europe has primarily been focused on Spain, France and Italy.

Australia and New Zealand

Australia and New Zealand require significant investments in green infrastructure and assets to transition to a low carbon economy. At this time, the local green loan market is at a nascent stage[21]. However, the green bond market has seen strong demand, suggesting the market for green and SSLs may have similar growth potential.



Source: Climate Bond Institute

Asia Pacific

The first sustainability linked loan in Asia Pacific was signed in early 2018, when Dutch bank ING provided its first Asian sustainability performance linked loan to Wilmar International, a palm oil producer from Singapore. The sustainable dept market continued to grow in 2021, up 76.5% YoY. Thailand also saw large green loans in the building sector, while Vietnam and Malaysia were focused on energy projects such as solar and wind. Green debt was issued in a number of currencies with US$ and SGD being the two most common. In 2021, the share of SGD deals was larger than US$ denominated deals, with the share of local ASEAN currencies rising to 59 percent in 2021. This demonstrates strong growth of green debt in local currencies, led by Singapore, Thailand, and Malaysia.

Hong Kong

Hong Kong has launched a number of measures to foster the green loans market, including the Green and Sustainable Finance Grant Scheme in May 2021. The goal of the scheme is to provide subsidies for eligible issuers to cover expenses related to issuance and external review services for 3 years. Track 1 applies to bond issuers while Track II, which covers external review costs, is applicable to sustainable loan borrowers and covers 100% of expenses up to HK$800,000 per instrument.

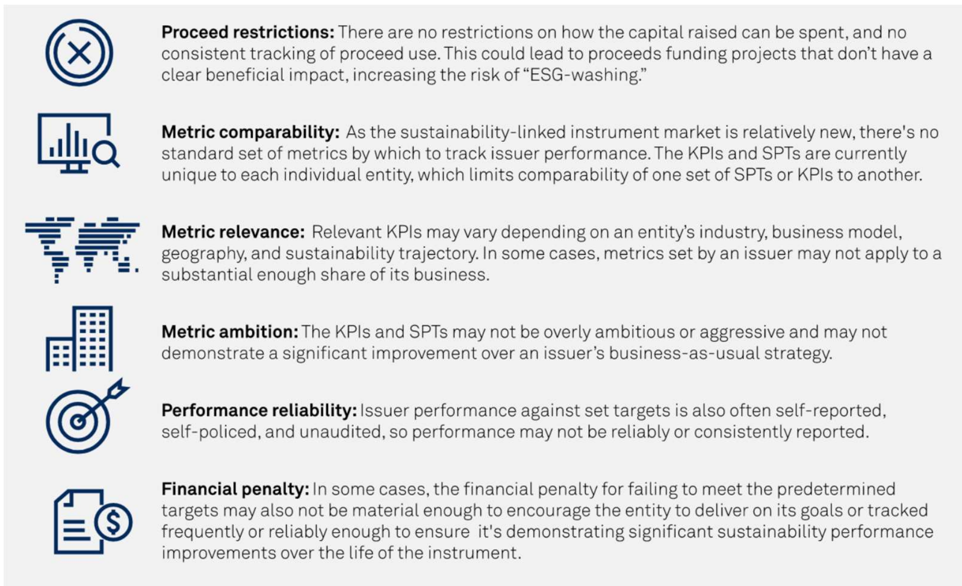
Covered loans must be issued in Hong Kong (at least half lenders must be Hong Kong based), and the external review must be provided by a party on HKMA's external reviewer list. In March 2022, the government lowered the minimum loan size threshold from HK$200 million to HK$100 million in respect of applications for subsidies for covering external review costs under the scheme.

[21] https://www.climatebonds.net/files/reports/cbi-green-loans-aus-nz-final-14102020.pdf

Hong Kong has also seen a rapid growth trend in SSLs versus green loans, with 63% of the loan market made up of SLLs[22]. In total, Hong Kong issued over US$25 billion of green and SSLs in 2021. According to CBI[23] Singapore is the largest country source, with the majority of green loans financing the building sector.

Greenwashing Concerns

There are concerns about the credibility of the KPIs underpinning some SLLs, with investors demanding that they be relevant and stretching.



Proceed restrictions: There are no restrictions on how the capital raised can be spent, and no consistent tracking of proceed use. This could lead to proceeds funding projects that don't have a clear beneficial impact, increasing the risk of "ESG-washing."

Metric comparability: As the sustainability-linked instrument market is relatively new, there's no standard set of metrics by which to track issuer performance. The KPIs and SPTs are currently unique to each individual entity, which limits comparability of one set of SPTs or KPIs to another.

Metric relevance: Relevant KPIs may vary depending on an entity's industry, business model, geography, and sustainability trajectory. In some cases, metrics set by an issuer may not apply to a substantial enough share of its business.

Metric ambition: The KPIs and SPTs may not be overly ambitious or aggressive and may not demonstrate a significant improvement over an issuer's business-as-usual strategy.

Performance reliability: Issuer performance against set targets is also often self-reported, self-policed, and unaudited, so performance may not be reliably or consistently reported.

Financial penalty: In some cases, the financial penalty for failing to meet the predetermined targets may also not be material enough to encourage the entity to deliver on its goals or tracked frequently or reliably enough to ensure it's demonstrating significant sustainability performance improvements over the life of the instrument.

Source: S&P Global[24]

"The focus on greenwashing risks over the next twelve months will give rise to greater scrutiny of KPIs/SPTs: Are they sufficiently challenging ? Are they encouraging the borrower to make the necessary operating changes ? Are they consistent with those of peers in the market ?"
Leonie Kelly, Director, Head of Sustainable Investment Consulting, Ogier

Notwithstanding these challenges, the use of SLLs can be viewed as a signalling of intent and a means of raising the profile of climate related issues. In addition, regulators in Asia are beginning to address the issues around greenwashing. For example, the Hong Kong Monetary Authority released a due diligence process for green and sustainable products in December 2022[25].

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[22]https://research.hktdc.com/en/article/MTE1ODA5NjA0NQ
[23]https://www.climatebonds.net/files/reports/cbi_asean_sotm2022_final.pdf
[24]https://www.spglobal.com/ratings/en/research/articles/210428-howsustainability- linked-debt-has-become-a-new-asset-class-11930349
[25]https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2022/20221209e3.pdf

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Green Mortgages and Mortgage Backed Securitisation

Hong Kong is one of the world's most densely populated places, with the majority of its more than 7.4 million residents living and working in high rise buildings. Hong Kong's major source of electricity consumption is its buildings, which account for around 90 percent of total usage, compared to a global average of 39 percent. This high level of energy consumption by buildings accounts for 60% of the city's greenhouse gas emissions[26]. Greening the building stock, therefore is an essential part of achieving Hong Kong's carbon reduction targets.

Increased availability of sustainable finance products is crucial to enable the development or retrofit of greener and energy efficient buildings. For some years, many of Hong Kong's largest property companies, such as Swire Properties, Hong Kong Land and Sun Hung Kai Properties, have already been issuing green bonds or taking out sustainability linked loans. Now, individual home owners in Hong Kong can also access sustainable financing in the form of green mortgages.

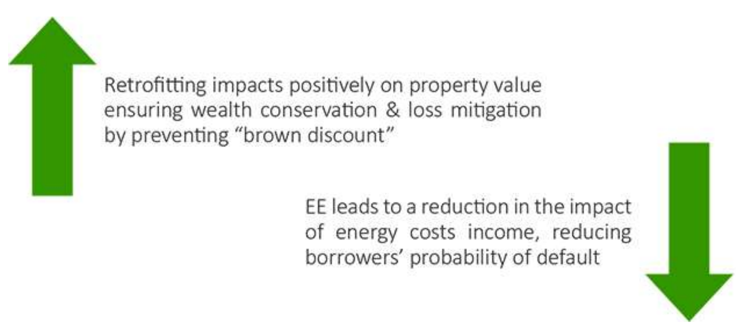
What is a Green Mortgage ?

Green mortgages, also known as energy efficient mortgages, provide funding to home owners to purchase an energy efficient property, which meets stipulated environmental standards, or to make sustainable and eco friendly upgrades to an existing home. They offer favourable interest rates, repayment terms and other incentives to encourage green home improvements. For new mortgages, lenders may also take future energy savings into account, so a larger loan can be available without a bigger down payment. Alternatively, a green mortgage can be rolled into a home owner's existing mortgage to finance upgrades.

Green mortgages offer benefits to both borrowers and lenders:

- Energy efficient homes cost less to power, reducing utility bills and realising cash savings for borrowers, which in turn make them less likely to default on their mortgage loans, reducing the bank's credit risk.

- Growing demand for more sustainable homes over time means that energy efficient improvements may increase the value of the property, which is positive for the home owner and reduces the bank's asset risk.



Source: The Energy Efficient Mortgage Initiative, European Union

[26] Hong Kong Green Building Council

The market for green mortgages is still relatively immature, but they are increasing in popularity around the world. The International Finance Corporation expects the global green residential market to grow at a compound annual growth rate of 10.9% from 2018 to 2023[27].

Green Building Standards and Certifications

For a borrower to be eligible for a green mortgage, the existing building features and/or the proposed upgrades will be assessed to establish that they meet the required environmental conditions. There are a number of widely recognised standards and certifications that banks use when considering whether to approve the loan. Some of the biggest global standards are:

LEED[28] (Leadership in Energy and Environmental Design) was established by the US Green Building Council and certifies that a building is resource efficient and cost effective. This certification looks at performance in areas such as energy, water, waste, construction, lighting and site selection. The LEED standard is the dominant green building certification in use in the United States, but there are also LEED certified buildings in China, India and South East Asia.

BREEAM[29] (Building Research Establishment Environmental Assessment Method) is more widely used in Europe. It is the world's longest established method of rating and certifying building sustainability along categories including energy and water use, health and well being, pollution, transport, materials, waste, ecology and management processes. More than 550,000 buildings have been BREEAM certified.

Green Star[30], developed by the Green Building Council of Australia, is an internationally recognised sustainability rating and certification system, accredited to ISO9001. The standards are regularly updated in consultation with industry and government stakeholders. There are four Green Star rating tools, which provide certification for building design and construction, operation and energy efficiency, interior fitting out and sustainability at a community level.

Policy Driving Development of Early Green Mortgage Markets

Policy makers in the United States and Europe have been driving the development of green mortgage markets as part of efforts to meet their own environmental and net zero targets.

United States

In 1992, the Department of Housing and Urban Development initiated the Energy Efficient Mortgages (EEM) programme as a pilot demonstration in five states. Under the programme, the Federal Housing Administration insures a borrower’s mortgage used to purchase a green home and/or the cost of energy efficiency improvements to be made to their home. In 1995, the programme was expanded country wide. Since then, the government’s Federal National Mortgage Association (Fannie Mae) and Federal Home Loan Mortgage Corporation (Freddie Mac) have set up a number of programmes to encourage green home buyers. For example, Fannie Mae’s Green

[27] Acuity, “Green Mortgages – the Sustainable Debt Financing Solution”, March 2021
[28] https://www.usgbc.org/leed
[29] https://bregroup.com/products/breeam/
[30] https://new.gbca.org.au/green-star/rating-system/

Reward Programme offers a lower interest rate, a free energy and water audit report and up to 5 percent additional loan proceeds for refinance, acquisition and supplemental loans[31].

European Union

The European Green Deal is a series of policy initiatives undertaken by the European Commission with the overarching aim of making Europe climate neutral by 2050. To meet this target, approximately 250 million homes will need energy renovation, or 23,000 homes every day[32], which would be unachievable without new funding sources.

In 2017, the Energy Efficient Mortgages Action Plan (EeMAP) was launched to establish a standardised "energy efficient mortgage", intended to incentivise and channel private capital into energy efficiency investments[33]. Under EeMAP, a private bank financing mechanism would be created with preferential interest rates for energy efficient homes and additional funds for retrofitting homes at the time of purchase. Banks in multiple European Union countries are now offering energy efficiency mortgages on commercial and residential properties, as are banks in the United Kingdom, including Barclays, Natwest and Lloyds[34].

Emerging Market for Green Mortgages in Hong Kong

Hong Kong green building certification ..

As part of Hong Kong's Climate Action Plan 2030+[35], which contains a carbon intensity reduction target of 65-70% by 2030 compared to the 2005 level, the city has introduced its own set of green certification standards, designed by the Hong Kong Green Building Council. To meet its BEAM Plus standard, building developers must meet a comprehensive set of sustainability performance criteria ranging from planning and construction to the fitting out, operation and maintenance of the building. Buildings are rated Bronze, Silver, Gold or Platinum according to their delivery against the criteria.

More than 1,600 buildings and development projects in Hong Kong already have a BEAM Plus certification, and BEAM Plus ratings are also being used in several cities in China, including Macau, Shenzhen, Guangzhou, Shanghai and Beijing[36].

The establishment of the BEAM Plus certification has paved the way for the development of the first green mortgage products in Hong Kong.

.. Underpinning development of green mortgage programmes

In September 2021, the first green mortgage plan was launched in Hong Kong by Bank of China (HK) in partnership with Sino Land[37]. Under the plan, paperless and digital mortgage services were made available to purchasers of Sino Land four residential projects that received the BEAM Plus Platinum

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[31] https://multifamily.fanniemae.com/financing-options/specialty-financing/green-rewards
[32] World Green Building Council
[33] http://eemap.energyefficientmortgages.eu/services/
[34] Savills, "Is There Green Finance Pressure on House Builders to Decarbonise ?", May 2021
[35] Hong Kong Environment Bureau, "Hong Kong's Climate Action Plan 2030+", January 2017
[36] ibid
37 Sino Group, "BOCHK and Sino Group Jointly Launch Hong Kong's First Green Mortgage Plan To Promote Sustainable Development and Shape a Green Future", September 2021

or Gold rating, giving them a lower carbon footprint compared to the typical mortgage application process. In addition, borrowers received a cash reward, a premium fee waiver on the home insurance plan and other digital wealth management rewards. Bank of China (HK) has extended the scheme to a number of other developers, offering several thousand units available for sale.

Over the last year, several of Hong Kong's largest banks have developed their own green mortgage plans tied to BEAM Plus building certifications. For example, Bank of East Asia's offering is available for purchase or refinancing of new and second hand housing with BEAM Plus Platinum or Gold ratings. Borrowers receive a preferential mortgage interest rate and other incentives, such as a cash rebate and an attractive deposit savings scheme[38]. In addition to generous cash rebates, HSBC is even seeking to attract borrowers under its green mortgage plan with prizes such as a Tesla electric car[39].

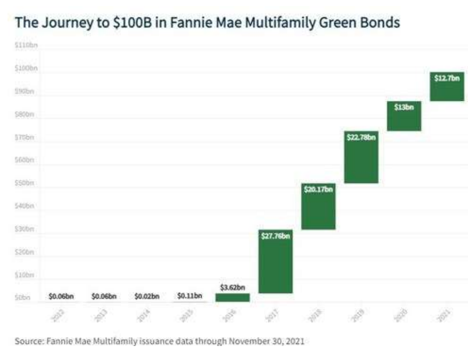
Green Mortgage Backed Securitisation

Securitisation is a process whereby banks transform a pool of illiquid financial assets, such as mortgages, into tradable financial instruments, known as asset backed securities. This enables a bank to sell its pool of mortgage assets to institutional investors, thus freeing up its balance sheet and generating new lending capacity.

A securitisation can be defined as green when the underlying assets are themselves defined as sustainable, such as green mortgages on certified buildings. There is growing institutional demand for this class of asset backed security, with sales of green mortgage backed instruments seeing significant growth in several markets.

United States

The largest volume of green mortgage backed securitisation to date has occurred in the United States. Both Fannie Mae and Freddie Mac play an important role in expanding the secondary mortgage market by securitising mortgage assets (including green mortgages) for sale to institutional investors. By the end of 2021, green mortgages made up 25 percent of Fannie Mae's multifamily mortgage business, for example, and the agency had issued more than US$100 billion in mortgage backed securities[40].



Several American states have established successful building energy efficiency programmes, which allow building owners to receive long term financing to perform upgrades to their properties. Over time, this creates a pool of loan assets, which can be securitised and sold in the market. Connecticut Green Bank's C-Pace Programme, for example, has seen regular sales of energy efficiency loans[41], and Renovate America, a lender under a similar programme in California, is also an issuer of green property related asset backed securities, the proceeds of which are used to refinance home improvement projects[42].

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[38] https://www.hkbea.com/html/en/Green_Mortgage.html
[39] https://retailbank.hsbc.com.hk/promo/green-mortgage/en/home/
[40] https://capitalmarkets.fanniemae.com/sustainable-bonds/green-bonds/multifamily-green-mbs
[41] https://www.ctgreenbank.com/
[42] Climate Bonds Initiative, "China Green Securitisation Report, State of the Market 2020", October 2021

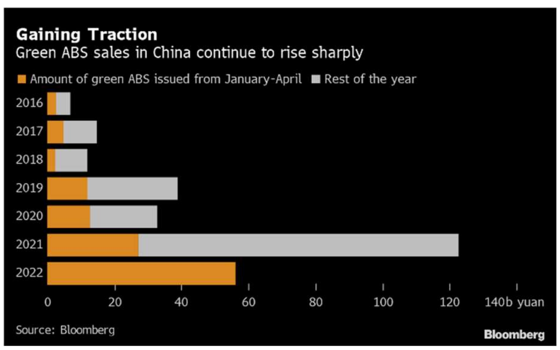
Europe

In 2016 in the Netherlands, mortgage lender Obvion issued Europe's first wholly green residential mortgage backed securities (RMBS). The company has originated mortgages for four Green Storm RMBS deals, totalling US$2.6 billion, which were certified by Climate Bonds[43]. In subsequent years, the volume of green RMBS issuance has increased considerably, making it a significant part of the overall market for green securitisation in Europe.

A recent report by the Association for Financial Markets in Europe predicted that mortgage lending for properties that qualify as green in Belgium, France, Ireland, Italy, the Netherlands, Portugal, Spain and the UK will total approximately €125 billion a year between now and 2030, while funding for green home renovation in the same eight countries could hit €75 billion. This will create a large pool of assets for securitisation through green RMBS[44].

China

In China, there has been growing demand for green mortgage backed securities, encouraged by government policies requiring development of more environmentally friendly buildings. Enhancing green building construction standards and improving building energy efficiency are among the top priorities under Beijing's 14th Five Year Plan.



According to Fitch Ratings, securitisation deals backed by green assets reached Rmb 110 billion in China in the first half of 2022, compared to Rmb 123 billion for the whole of 2021[45]. Last year's volume was already higher than the total issuance in the preceding 5 years. Issuance of green mortgage backed securities increased in the first half of the year to Rmb 17.6 billion, with a small number of Chinese commercial property developers completing private placements.

China's market for RMBS is the world's second largest after the United States[46], but as yet, there have been no residential green mortgage backed securitisations. However, as the People's Bank of China puts pressure on banks to increase funding for green development, and continues to take steps to support the country's property market, green residential mortgage loan books are likely to increase, leading to more opportunities to securitise these assets.

Hong Kong

The green mortgage market is still nascent in Hong Kong and the volume of mortgage assets is currently too low to support securitisation deals. There is, however, already some expertise with these kinds of transactions in the city. A Hong Kong based investment firm, BC Group, this year launched one of Australia's first green mortgage funds, giving retail investors exposure to energy

[43] ibid
[44] IFR, "Green Securitisation Collateral to grow in Europe, says AFME", December 2022
[45] Fitch, "Green Momentum to Turn to Chinese Mortgage-Backed Securities", September 2022
[46] Fitch, "Comparing China and US RMBS", June 2022

efficient housing[47]. Securities in the fund are backed by loans for energy efficient homes, and have been certified as climate bonds by Climate Bonds Initiative.

The Hong Kong Mortgage Corporation, a government body that provides mortgage insurance cover to local banks and is responsible for promoting the development of the mortgage backed securities market in Hong Kong[48], is also considering ways to encourage issuance of green asset backed securities in the city. It recently released a sustainable financing framework to guide structuring and sale of instruments in eligible social and green categories[49].

"Amid the global energy crisis which led to rising energy price worldwide including in Hong Kong, more effort could be spent to incentivise property owners to increase building's environmental efficiency and sustainability. Green mortgage loans with favourable lending conditions would be one way to go."
Ching Yng Choi, Executive Director, CYC Asia-Europe Consulting

[47] BC Invest, "BC Group launches BC Invest Australian Credit Fund; Green Units the first of their kind in Australia", February 2022
[48] https://www.hkmc.com.hk/eng/investor_relations/securitisation.html
[49] https://www.hkmc.com.hk/eng/investor_relations/sustainable_finance.html

THANK YOU!

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