

Sustainability-Linked Bond usage in Japan

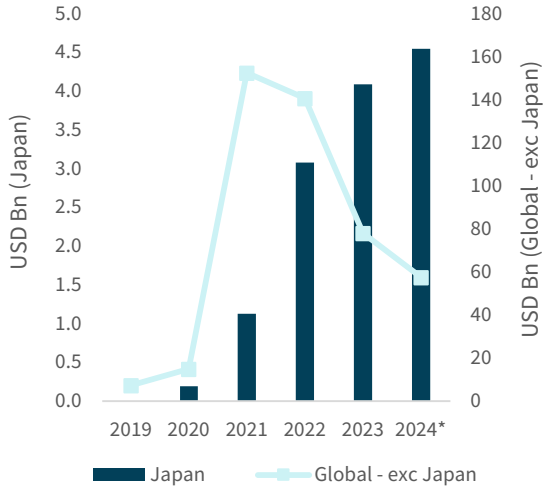
Hazel Ilango(*), Emiel Loh, Josephine Richardson

The Japanese Sustainability-Linked Bond (SLB) market has been growing steadily since 2020, even as global issuance has declined by 62% since 2021, as shown in Figure 1.

The market is continuing to develop; existing issuers will be tested as their observation dates approach, and the pipeline swells.[1]

This note reviews the Japanese SLB market across four key areas, and offers insights on its continued growth and impact:

Figure 1. Total amount of issued SLBs. Source: Bloomberg, accessed on 15 July 2024. Note, the 2024 figure is annualised.



- **Issuance profile:** SLB usage is broad; the product has been adopted widely across sectors, including those that don't use the product in the global market. SLBs also act as complementary tools to Use-of-Proceeds (UOP) instruments especially for some issuers that are key to achieving Japan's national decarbonisation target.

- **Key Performance Indicators (KPIs)**: emissions-related KPIs dominate the market. These provide a robust metric for assessing transition progress, however wider inclusion of Scope 3 emissions would improve the relevance. Some structures include "bonus KPIs", often linked to CDP ratings, which are more challenging to estimate.

- **Financial materiality**: 85% of Japanese SLB structures feature a single premium payment rather than a step-up coupon if targets are missed. While a single premium payment structure does not inherently lead to lower materiality, it is often the case. Low materiality reduces the value of the SLB's option, which may in turn dampen investor demand.[2]

- **Payout structure:** 78% of the SLB issuances were structured to pay a charitable donation and/or to trigger the purchase of emission credits in lieu of a coupon step-up. Such structures have the potential to further reduce SLB materiality, however they seem embedded in the cultural response to this product by Japanese investors.[3]

[1] "Viability Test Looms for Japan's Sustainability-Linked Bonds", Bloomberg, 25 Jun 2024.
[2] For full details of the AFII option pricing framework please see "Sustainability-Linked Bond Handbook: A practitioner's guide", AFII, May 2024.
[3] For more details please see "Sustainability-Linked Bonds: alternative steps", AFII, 22 May 2023.

Not investment advice. This version16 Sep 2024. Important disclaimers at end of the document.
(*) Anthropocene Fixed Income Institute (www.anthropocenefii.org). Author for contacts: hzl@anthropocenefii.org

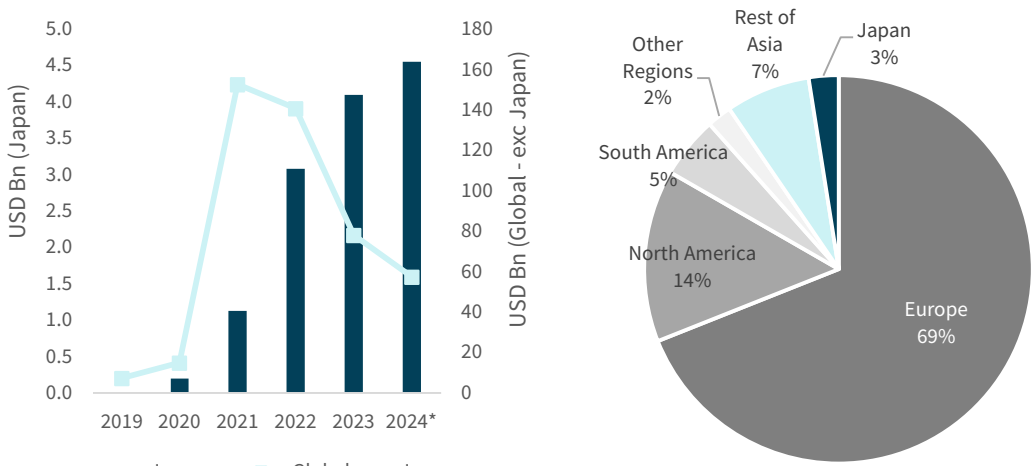
Japanese SLBs : Steady growth amid global decline

The Japanese SLB market has experienced significant growth since its launch in 2020, expanding from an annual issuance of USD 191 million to a predicted annualised figure of USD 4.5 billion. This growth is in contrast to global SLB issuance, which has seen a decline of 62% since 2021, as shown in Figure 2.

Some existing issuers are actively seeking to boost their issuance of SLBs as they prepare their debt pipeline in anticipation of possible monetary policy tightening by the Bank of Japan.[1,4] Currently, Japanese SLBs account for only 3% of the global SLB market.

This relatively modest share, when coupled with positive growth trends, underscores a significant opportunity for Japanese borrowers to expand issuance and potentially establish SLB market leadership within Asia.

*Figure 2. Total SLB Issuances in Japan and other regions (2017 -2024). Source: Bloomberg, accessed on 15 July 2024. Note, other regions include Oceania, Central America, Caribbean and Africa. *The 2024 figure is annualised.*



Market landscape

An analysis of Japan's SLB market from 2020 to July 2024 reveals that 44 issuers launched 77 bonds, all denominated in Japanese Yen, totaling JPY 1.496 trillion (or USD 10.76 bn).[5] This universe includes "Transition-linked" bonds.[6]

We profiled Japanese SLB issuers across four key areas: (1) issuance profile compared to global trends, (2) key performance indicators (KPIs) (3) financial materiality in terms of pricing and option value, and (4) types of payout structures.

---

[4] "Ueda Keeps Rate Hikes in Play, Talks Down BOJ's Part in Meltdown", Bloomberg, 23 Aug 2024.
[5] We sourced our population from "Sustainability Linked Bonds Issuance List (Domestic)"Ministry of Environment, accessed on 28 Jun 2024 and Bloomberg, accessed on 15 July 2024.
[6] The structure of "Transition-linked" bond has features that make it redolent of those used by SLBs. Proceeds are unrestricted, and there is a Sustainability Performance Target (SPT), which if missed will trigger a payout in the form of coupon step-up, donation, and/or purchase of emissions credits. For more analysis of transition-linked bonds, please see "JERA: An enhanced SLB proposal for ambitious transition", AFII, 29 Feb 2024.

1. Issuance profile

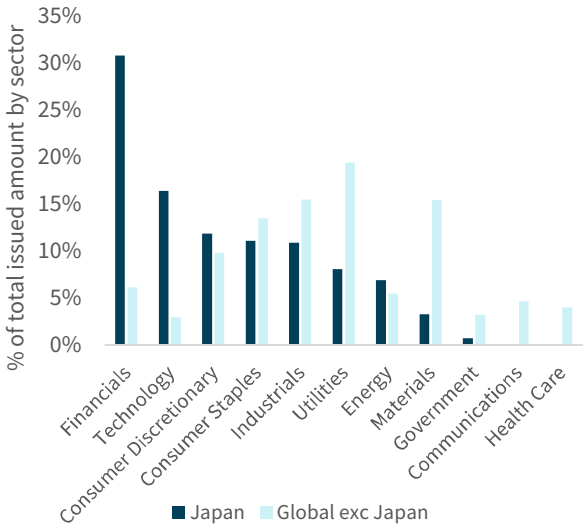
In this section we analyse the sectoral composition of Japan's SLB market relative to global trends. Comparing to global issuance (as show in Figure 3), there are some contrasting sector breakdowns amongst these bonds.

Sector Breakdown

In Japan, the financial and technology sectors are prominent issuers of SLBs, accounting for 31% and 17% of total issuances, respectively.[7]

The robust presence of financials in the Japanese SLB market may be partly attributed to the Ministry of Economy, Trade and Industry's (METI) Financial Support Programme for the Promotion of Transition towards Carbon Neutrality, which provides financial support to financial institutions by granting preferential interest rates on transition-labelled products.[8]

Figure 3. Total amount of issued SLB Issuances in Japan by sectors Source: Bloomberg, accessed on 15 July 2024 .



Conversely, the global landscape (excluding Japan) shows a different picture. The financials sector constitutes a mere 6% of SLB issuance, while the technology sector is even less prominent, representing 3%. Globally, the SLB market is dominated by sectors such as utilities, materials, and industrials, with utilities leading at 20%, followed closely by materials at 15.4% and industrials at 15.5%.

The patten of SLB issuance at the sector level is notably different in Japan relative to the rest of the world, with many issuers from the financial and technology sectors. This may present an opportunity for growth globally in these sectors.

Complementing SLBs with use-of-proceeds issuance

SLBs are effective at raising capital in hard-to-abate sectors and offer a number of benefits over Use-Of-Proceeds (UOP) instruments like green bonds and transition bonds.[9]

Sectors like oil and gas, utilities, construction, and aviation urgently need capital to transition their business models, but their investment plans are rarely eligible for green bond treatment. Transition bonds, meanwhile, allocate capital to a fixed UOP, which may rely on specific transition technologies that could prove uneconomical in the future. Despite the government's commitment

[7] The financial sector includes banks, commercial finance, consumer finances and real estate investment trusts (REIT).

[8] "Japan Sustainable Finance Policy Update June 2021 – September 2021", Institute for Global Environmental Strategies (IGES), Nov 2021.

[9] For more analysis please see "SLBs: complementary, my dear Investor", AFII, 13 Apr 2023.

to the transition bond structure, this instrument has thus far attracted little interest from international investors.[10,11]

In contrast, the SLB format focuses on outcomes rather than investments and therefore gives issuers the flexibility to select their own transition strategies. The explicit link between outcomes and SLB contract signals the issuer's substantial commitment to their climate target.

Therefore, although based on a small sample size, the growing trajectory of SLBs across Japan's hard-to-abate sectors is particularly encouraging (see Table 1).

Table 1. A non-exhaustive list of SLB issuers from hard-to-abate sectors in Japan by amount issued between 2020-2024. Source: Bloomberg and AFII.

Sub-Sector	Issuer Name	Total Amount Issued (JPY Bn)	Issued a Use of Proceed Bond?
Oil and gas	Eneos Holdings Inc	100	No
Power Generation	Chugoku Electric Power Inc	92	**Yes**
Gas Production	Osaka Gas Co	25	**Yes**
Power Generation	JERA Co Inc	10	**Yes**
Construction	Obayashi Corporation	50	No
Construction	Nishimatsu Construction Co	20	No
Construction	Kajima Corporation	10	**Yes**
Construction	Takamatsu Construction Group Co	10	**Yes**
Construction	Toda Corporation	10	**Yes**
Construction	Mistsubishi Materials Corp	35	No
Construction	Tokyu Fudosan Holdings Corp	10	**Yes**
Aviation	Ana Holdings Inc	20	**Yes**
Chemicals	Nagase & Co Ltd	10	No
Chemicals	Arakawa Chemical Industries Ltd	5	No

Moreover, issuers from the utilities and aviation sectors often deploy SLBs with targets linked to absolute emissions, emissions intensities, or renewables capacity.[12] It is positive to see issuers like JERA, Chugoku, Osaka Gas, and ANA Holdings – which are key to Japan's national decarbonisation efforts – tapping into SLB financing to complement their UOP issuances.

SLBs are used across various sectors and serve as a complementary tool to UOP instruments. They add value by providing a means for all issuers, including those in hard-to-abate sectors, to raise capital to implement their transition strategies.

Case study – Shiga Prefecture

Shiga Prefecture, a regional authority in Japan, made history as the first local government in Japan to issue SLBs.[13] The authority placed two issuances of 5 billion yen each—one in May 2022 and another in September 2023.[14]

The aim of these bonds is to promote a net-zero CO_2 society by 2050, with a specific Sustainability Performance Target (SPT) of reducing greenhouse gas emissions 50% by fiscal year 2030 relative to a 2014 baseline. This reduction would translate to 7.42mm tons of CO_2, and in percentage terms exceeds the Japanese government's goal of a 46% reduction in domestic greenhouse gas emissions by FY2030 compared to FY2013.

[10] "Sovereign SLB: an option for Japan's transition", AFII, 31 Jan 2023.
[11] "First Sovereign Transition Bond Drawing Little Foreign Interest", Bloomberg, 27 Oct 2023.
[12] For some example analysis please see "Enel SLBs: update on 2023 observation date", AFII, 20 Oct 2023 or "A review of SLBs approaching KPI observation dates", AFII, 17 Nov 2023 or Air France-KLM: Come fly with SLBs, AFII, 9 Jan 2023.
[13] Globally, excluding Japan, SSA issuers represent 3.1% of total SLB issuances, stemming from 10 issuers, Bloomberg, accessed on 15 Jul 2024.
[14] "Shiga Prefecture Sustainability Linked Bond Information", Shiga Prefecture, 29 Aug 2024.

Shiga Prefecture's pioneering use of the SLB structure, coupled with its ambitious target, has distinguished the authority among the 40 prefectures committed to achieving carbon neutrality by 2050.[15]

Its activities underscore the critical role of SSA (Supranational Sovereign and Agency) to the climate transition. The SLBs issued enhance market diversity and increase the amount of financing available for high-impact projects that align with national decarbonisation objectives. Most importantly, they serve as prominent examples for other prefectures and corporates to follow.[16]

Summary

Japan's SLB market has seen significant growth and is expected to continue expanding.[17,18]

Without considering the specifics of the structures, it is encouraging that SLBs are being adopted across the economy, especially hard-to-transition sectors that may struggle to attract traditional "green" capital but remain critical to Japan's decarbonisation goals. Some issuers are also using SLBs as complementary instruments to their UOP products.

Notably, there is currently only one SSA issuer in the market; more SSA participation could set examples for corporates to follow, further strengthening Japan's SLB market and decarbonisation efforts across various sectors.

2. Key Performance Indicators (KPIs)

The corporate Japanese SLB market presents a diverse variety of KPIs, showcasing the instrument's inherent flexibility. However, this diversity also results in non-standard bonds, which complicates the analysis of relative value — both financial and in terms of impact — due to the scarcity of direct comparisons.

In order effectively to price an SLB instrument's embedded option value, investors needs to be able to define a range of outcomes and estimate the likelihood of the issuer achieving their KPIs.[19]

For this purpose, it is recommended that KPIs be measurable, comparable, and material. They should also be relatively mature, and relevant to the issuer's sustainability objectives.[20]

Table 2. Top KPIs of Japanese SLB Issuances. Source: Ministry of the Environment accessed on 28 Jun 2024, respective bond documents and AFII.

Main KPI	Number of Issuances	Amount Issued (JPY Bn)
Emissions	53	1011.4
Renewable Energy	17	397
CDP Score	16	344
Food Waste	3	85
Recycling Rate	4	72.2
Multiple KPIs	27	547.2

As shown in Table 2, emissions-related KPIs are the most common in the Japanese market, with 53 issuances amounting to JPY 1,011.4 billion. Renewable energy and CDP score-related KPIs are the

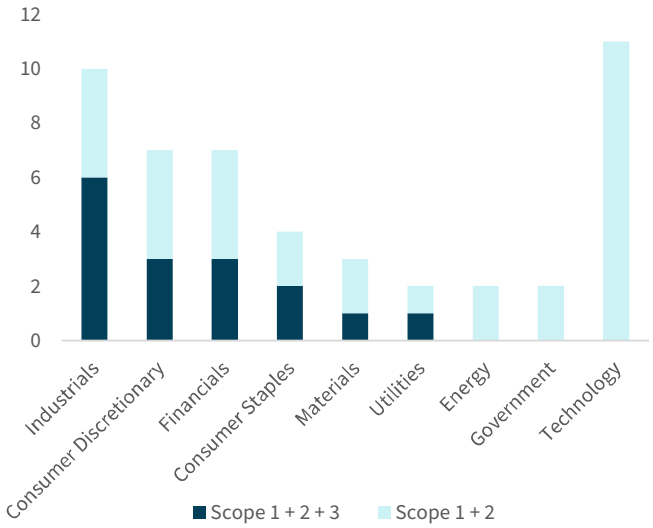
[15] "External Valuation", Japanese Credit Rating, 25 Mar 2022.
[16] "Sustainable Debt Global State of The Market 2022", Climate Bond Initiatives (CBI), Apr 2023.
[17] "Asia SLB volumes dwindle but are set to rebound", Global Capital, 15 Aug 2024.
[18] "Green Bond and Sustainability Linked Bond Guidelines", Ministry of Environment, Jul 2022.
[19] For more detail on KPIs and target setting, please see "Sustainability-linked bond handbook: A practitioner's guide", AFII, May 2024.
[20] "Sustainability-Linked Bond Principles", International Capital Market Association (ICMA), Feb 2021.

next most common. Furthermore, approximately 27 issuances, or 35% of the total, incorporate multiple KPIs.

Emissions-related KPIs

Emissions-related KPIs are predominant in both global and Japanese SLB markets, encompassing metrics such as absolute emissions, emissions intensity, and renewable energy procurement. Being numerical, and often with some degree of historical data, these KPIs can be easier to formulate meaningful hypotheses about an issuer's likelihood of meeting their targets.

Figure 4. Total number of issuance by sector based on emissions-related KPI. Source: Bloomberg, accessed on 15 July 2024 and Ministry of the Environment.



The choice between using Scope 1+2 or Scope 1+2+3 emissions as KPIs is critical, especially for hard-to-abate sectors like oil and gas, construction, and utilities, where Scope 3 emissions constitute a large portion of their total emissions footprint.

Japanese corporates have tended to choose Scope 1+2 KPIs, with around 70% taking this route. For example, Eneos Holdings, Japan's largest oil company, represents 6% of total SLB issuance in Japan.[21] While the company's participation in the market signals its commitment to sustainability, Eneos' SLBs exclude Scope 3-related SPTs.[22] Future issuances should incorporate Scope 3 SPTs to enhance impact and potentially achieve better pricing.

Nearly 30% of Japanese SLBs have integrated Scope 3 targets, and this is particularly common among the industrials, consumer discretionary, and financials sectors (see Figure 6). Notable issuers include Tokyu Fudosan Holdings Corp (construction), Osaka Gas (utility/gas production), and Kajima Corp (construction).[23,24]

While there is variability in ambition between Scope 1+2 and Scope 3 KPIs, some issuers are aligning with the International Capital Markets Association's core KPI classifications, which suggests progress in aligning sustainability assessments and targets with global standards.[25]

[21] "Issuance of First Domestic Transition-linked Bonds", Eneos Holdings, 13 May 2022.
[22] "SLB bond radar: Eni (potentially) coming to market", AFII, 19 July 2022.
[23] Scope 3 targets are seen as a leading indicator of ambition and could improve investors confidence. "Scope 3 targets add impact to SLBs", International Financing Review, IFR, 5 May 2023.
[24] Based on IFC's data, 25% of all SPTs linked to GHG emissions included a Scope 3 target in 2023. "Sustainability finance frontier moving to Scope 3", Euromoney, 26 Mar 2024.
[25] "SLB KPIs Registry", The International Capital Market Association (ICMA), Jun 2024.

Though companies are still developing their ability to track and address Scope 3 emissions, their inclusion as KPIs would demonstrate greater ambition and could potentially reduce funding costs at issuance.

CDP (Carbon Disclosure Project) Scores

CDP scores are another key KPI in the Japanese SLB market, with eight issuers incorporating this metric into 16 SLB issuances. However, analysis reveals that most issuers had already met their CDP score targets before the issuance dates. This suggests that these targets were not ambitious but rather indicative of a business-as-usual trajectory, as shown in Table 3.[26] Additionally, the CDP score measures disclosure practices rather than direct improvements in sustainability.[27]

Table 3. SLB issuers that have set CDP Score as a KPI. Source: CDP and AFII.

Issuer Name	Issuance Amount (JPY Bn)	Targeted CDP Score	Achieved Targeted CDP Score	SLB Issued year	Achieved Target b/f SLB Issuances
Nec Corporation	180	A	2019	2022, 2023,2024	Yes
Aeon Co., ltd.	50	A	2019	2024	Yes
TDK	40	A/A-	2019	2021	Yes
Toyobo Co., ltd.	30	A- or better	2023	2023	No
Ana Holdings inc.	20	A- or better	2017, 2021	2021	Yes
Asics Corporation	10	A- or better	2020	2021	Yes
Kajima Corporation	10	A or A-	2016, 2020-2023	2023	Yes
Daiwa House Reit Investment Corporation	4	A	2021	2022	Yes

Summary

Emissions-based KPIs provide a good base for investors to assess SLB probabilities. Expanding these KPIs to include Scope 3 emissions would help Japanese corporates demonstrate the credibility of their transition plans. While companies are still building their capacity to measure and manage Scope 3 emissions, including them as KPIs would signal stronger ambition and potentially lead to more favorable funding conditions.

Other KPIs can serve as “bonus KPIs”; although they may be harder to estimate, they can align with the issuer’s overall sustainability strategy. In the case of CDP score usage however, our analysis finds that many issuers had achieved their targets prior to SLB issuance.

3. Financial materiality

Financial materiality represents the total cumulative value of any step-up coupon embedded in an SLB. This is separate from the ambition of its target(s), which impacts the probability of the step-up being paid.

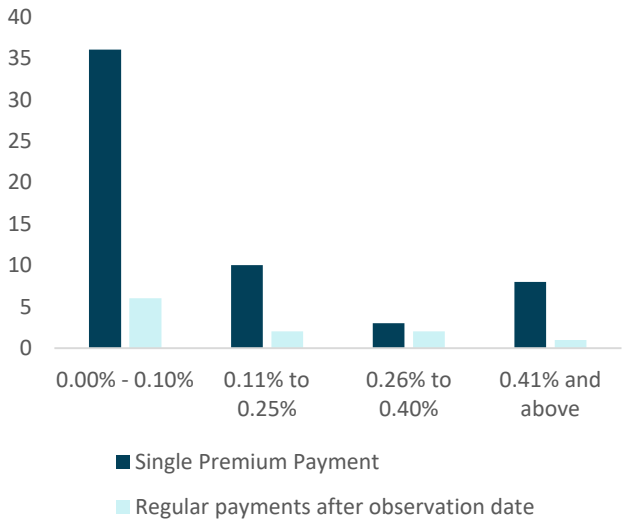
[26] “Sustainability-Linked Bond Principles”, The International Capital Market Association (ICMA), Jun 2020.
[27] “What is CDP’s scoring methodology?”, Climate Disclosure Project (CDP), accessed on 30 Aug 2024.

With low materiality, there can be both criticisms that the step-ups may provide little incentives for issuers to improve their sustainability performance,[28] but also the option value will be commensurately lower and so less observable for investors.[29]

Single premium payment

The Japanese SLB market differs from the rest of the world in that 85% of Japanese SLB structures feature a single premium payment rather than a coupon step-up. These single premium payments are made upon redemption or after the target observation date if the issuer fails to meet its sustainability objective(s), rather than an increase in a periodic coupon rate.[30] For most of these bonds, the payout ranges from 0.05% to 0.10% of the notional amount and may vary depending on the number of missed SPTs (full details are in Figure 5).

Figure 5. Payout Structure. Source: Ministry of the Environment accessed on 28 Jun 2024, respective bond documents and AFII.



While these payouts may seem small, they can be comparable to, or even slightly exceed, the step-up payments in some current SLB structures, though this varies from case to case. Therefore, a single premium payment structure doesn't necessarily mean a bond has lower financial materiality. But as Figure 5 shows, the most frequently used single premium payment size is less than 0.25% of notional as a one-off payment, which is lower than the standard 25bps increase to annual coupons in step-up SLBs, so the cumulative payment will be commersurably lower.[31]

The remaining 15% of issuances feature regular coupon step-ups or periodic charitable donations made after the observation date if targets are missed. These issuances generally have a short payout period, averaging about two years, and so bond structures may struggle to achieve a minimum degree of materiality.[29]

In order to be financially material, SLBs should incorporate meaningful step-up features. These increase the value of the embedded options from the investor perspective, and can therefore lead to tighter funding spreads for issuers. This is further illustrated in our JERA transition-linked bond case study.[32]

---

[28] "Sustainability bond market stumbles as investors get picky", Financial Times, 14 Feb 2023.
[29] For our minimum materiality proposal please see "Greenback SLBs: an impact standardisation proposal", AFII, 10 May 2023.
[30] For this part of the analysis, we excluded SLB issuances with step-down structures, those where emissions credits are purchased if an SPT is missed, and those with unavailable payout structures. This resulted in a total of 67 issuances.
[31] 25bps has also been criticised for insufficient materiality as in "Do Sustainability-Linked Bonds have a step-up problem", Hermes Investment, Apr 2022.
[32] For an introduction on JERA's transition-linked bond please see "JERA: An enhanced SLB proposal for ambitious transition", AFII, 29 Feb 2024.

Case study – JERA

In February 2024, JERA issued its first transition-linked bond with a target to reduce emissions intensity. If JERA fails to meet this target, it will donate 0.1% of the bond's notional amount to the public good.

The potential pricing benefit of an SLB is derived from the probability that investors may receive a higher coupon in the future, which allows them rationally to accept a lower coupon at issuance.[33] On a discounted basis, the value of JERA's donation is only 1bp running across the life of the bond. This is before accounting for the probability of the target being missed.

By applying AFII's option pricing methodology and estimating the probability of JERA achieving its emission intensity targets, we find that this structure has a very low option value, of just 0.5bps running, driven by the low materiality of the premium payment at maturity (which is donated for public good).[34]

In order to maximise both the pricing benefit for JERA, and the impact opportunities for investors, we propose an enhanced structure incorporating a 37.5bps symmetric step-up/step-down coupon tied to more ambitious targets. This adjustment could increase the option value to 3bps, offering greater financial materiality to investors.

Summary

All SLBs have the potential to achieve lower financing spreads for issuers. However, the single premium payment does not inherently lead to lower materiality, though this is often the case.This is evidenced by our JERA case study, where a small charitable donation made if the target is missed is insufficiently material to deliver a meaningful pricing benefit.

A small single premium payment, especially in the form of charitable donation or purchase of emissions credits, is a missed opportunity to provide meaningful financial incentives for investors and to support issuers to meet their sustainability targets.

SLBs with insubstantial step-up rates or unclear step-up mechanisms struggle to differentiate themselves from vanilla bonds and may prevent issuers from acquiring attractive financing spreads. To truly achieve impact from SLBs, a higher materiality will give the hedge value for investors, and so deliver a lower cost-of-capital for ambitious issuers.

4. Payout Structure

A traditional SLB structure with a coupon step-up can maximise option value for investors and potentially offer issuers lower funding spreads. In this section, we examine the two main SLB payout structures in Japan — charitable donations and the purchase of emissions credits — which are more common in the Japanese market than elsewhere. Discussions with Japanese investors confirm that the origination of this structure was driven by investor demand.

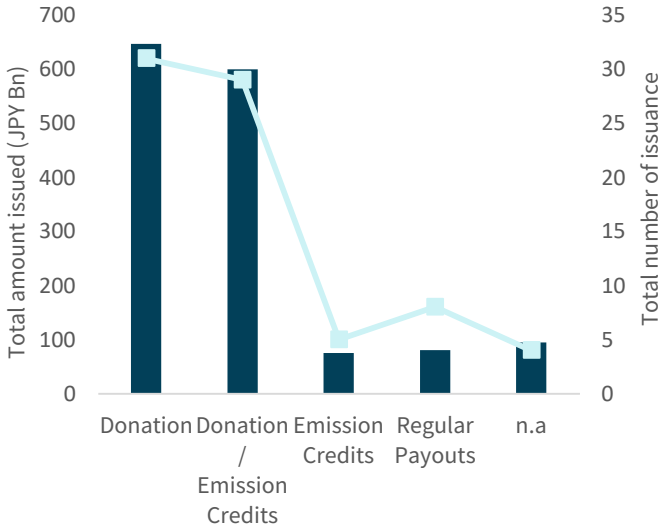
[33] For full details of the AFII option pricing method please see "An option pricing approach for SustainabilityLinked Bonds", AFII, 8 Nov 2022.
[34] For a broader discussion on materiality of SLB structures please see "Greenback SLBs: an impact standardisation proposal", AFII, 10 May 2023.

78% of Japanese SLB issuances are structured to pay out either an equivalent value charitable donation, purchase of emission credits, or both, rather than a coupon pay-out if the issuer misses its SPT(s). A summary is shown in Figure 6.

Charitable Donations

As of February 2022, 1.71% of global SLBs (around USD 2.1 bn) featured a charitable donation payout structure if targets were missed.[3] This is a small percentage compared to Japan's SLBs, where at least 40% had a similar structure as of July 2024, highlighting a much stronger trend in Japan.[35]

Figure 6. Type of payout structure. Source: Ministry of the Environment accessed on 28 Jun 2024, respective bond documents, and AFII.



Analysis of these SLBs reveals substantial room for improvement when it comes to transparency about charitable donation recipients. At least 77% of these issuances vaguely specify donations to "public interest incorporated foundation", "international organisations" "local goverments" or do not disclose information. This makes it challenging to ascertain whether the recipients effectively achieve positive environmental and social impacts.[35]

Typically, **charitable donation recipients align with SLB issuer KPIs, but there's often no direct link between donation outcomes and sustainability performance, limiting alignment with investor objectives.** To strengthen this particular structure, it would be preferable for issuers to disclose the charity receiving the donation and its intended outcomes. They could also to commit to remediation plans for meeting targets later.

Purchase of Emissions credits

Emissions credits or carbon offsets are market-based tools that companies purchase and "retire" to offset their own climate footprint. In Japan, the government plans to update the GX League initiative, a Japanese forum of cooperation to achieve carbon neutrality, to attract more firms and may require high-emission companies to participate in carbon trading. While emissions credits can help companies meet their public targets, they risk being seen as a way to offset obligations rather than as a genuine commitment to reducing emissions.[36]

A notable example of this is Kajima Corporation, a Japanese construction firm, which issued a JPY 10bn SLB in March 2023 with a five-year maturity. In the event of failing to meet a SPT, the

[35] This figure would be significantly higher if we included bonds where issuers can choose between making charitable donations or purchasing emissions credits. If these issuers opt for charitable donations instead of purchasing emissions credits, the percentages would increase from 40% to 78% and from 77% to 85%, respectively.

[36] "Japan makes a late play on under-fire carbon credit trading", Japan Times, 24 June 2024.

company would either make charitable donations or purchase emissions credits. However, our calculations indicate that the emissions reduction achieved through the purchased offsets would only account for 5% of the firm's annual Scope 1 and 2 emissions, significantly below the decarbonisation amount that would be achieved if the target was met.[3]

Summary

One technical reason why the charitable donation solution or purchase of emissions credits may appeal is that it presents opportunities to access sustainability-linked structures to investors that for some reason may not want to, or be able to, invest in variable coupon bonds. Investors that do not want to be seen as benefiting financially in the event of a missed target may find these structures appealing, too.

We recognise that while this may reduce the financial benefit for international investors (who could always choose to donate a coupon step-up to charity), these payout structures seem to have been effective at broadening interest among domestic investors. It may be important, however, to move towards a coupon step-up in order to both maximise the option value of these structures, and also align them with the global market.

Conclusions

The Japanese SLB market has been growing steadily since 2020, even as global issuance has declined. It is expected to maintain this upward trajectory in anticipation of tightening monetary and the return of past and current issuers back into the market.[1] This offers Japan an opportunity to expand its presence and potentially lead the SLB market in Asia.

- SLB financing in Japan is being used across a broad range of sectors, including those in hard-to-transition sectors, to raise capital for their transition efforts. Notably, some key issuers are complementing their UOP products with SLBs, showcasing a stronger commitment to sustainability and Japan's decarbonisation goals.
- Emissions-related KPIs and CDP scores are prominent in the Japanese SLB market. While the inclusion of emissions-related KPIs is positive, as they provide a robust metric for SLB pricing, there is room for improvement through the incorporation of Scope 3 emissions. Other KPIs can act as "bonus KPIs," reflecting the issuer's broader sustainability strategy, though they may be harder to estimate.
- 85% of Japanese SLB structures involve a single premium payment at redemption or after the observation date if targets are missed. While this structure does not inherently result in lower financial materiality, it often does, as evidenced in our JERA case study. This low materiality means the structures may not offer meaningful pricing benefits, representing a missed opportunity for both investors and issuers.
- 78% of SLB issuances payout in the form of charitable donations, the purchase of emissions credits, or both, rather than a coupon payment when issuers miss their SPT(s). This structure also has the potential to reduce the materiality of these structures, although they have proven attractive to local investors.[3]

Appendix

List of issuers

Of the 44 SLB issuers in Japan, 16 are repeat issuers, representing 36% of the total. Notably, the top five issuers alone contribute to 41% of the overall issuance, highlighting a concentration of activity among a select group of participants in the market. (Table 4)

Table 4. List of Japanese SLB issuers.Source: Bloomberg, accessed on 15 July 2024, and Ministry of the Environment.

Issuer Name	Total number of issuances	Total amount issued (JPY bn)
Aeon Co Ltd	4	100
Aeon Mall Co Ltd	2	60
Ajinomoto Co Inc	2	30
ANA Holdings Inc	1	20
Arakawa Chemical Industries Ltd	1	5
Asics Corp	1	10
Chugoku Electric Power Co Inc/The	3	92
Chuo-Nittochi Group Co Ltd	1	18
Citizen Watch Co Ltd	1	10
Daiwa House Industry Co Ltd	3	120
Daiwa House REIT Investment Corp	1	4
ENEOS Holdings Inc	2	100
Fuyo General Lease Co Ltd	4	77
Glory Ltd	2	14.2
GLP J-Reit	1	6
Hulic Co Ltd	1	10
JA Mitsui Leasing Ltd	3	70
JERA Co Inc	1	10
Kajima Corp	1	10
Kao Corp	1	25
Keihanshin Building Co Ltd	1	5
Kitz Corp	1	10
Mitsubishi Estate Co Ltd	5	120
Mitsubishi Materials Corp	2	35
Mizuho Leasing Co Ltd	1	25
Nagase & Co Ltd	1	10
NEC Corp	7	180
Nishimatsu Construction Co Ltd	1	20
Nomura Research Institute Ltd	1	5
NSK Ltd	1	15
Obayashi Corp	3	50
Okamura Corp	2	10
Orient Corp	2	30
Osaka Gas Co Ltd	1	25
Shiga Prefecture	2	10
Shiseido Co Ltd	1	20
Sony Bank Inc	1	20
Takamatsu Construction Group Co Ltd	1	10
TDK Corp	1	40

Toda Corp	1	10
Tokyu Corp	1	10
Tokyu Fudosan Holdings Corp	1	10
Toyobo Co Ltd	2	30
TRE Holdings Corp	1	5.2
Grand Total	**77**	**1,496.4**

Top 3 issuers

NEC Corporation, a leading technology and electronics company, is the largest issuer of SLBs in Japan. In July 2023, NEC issued its second SLB through a public offering in the domestic corporate bond market, following its first issuance in July 2022. In September 2022, NEC brought forward its target for achieving virtually zero CO_2 emissions across its entire supply chain from 2050 to 2040, ten years earlier than originally planned, and signed "The Climate Pledge." As a result, NEC has updated its SPTs for fiscal 2024 to align with these new, more ambitious goals.[37] NEC is expected to issue more SLBs in 2024.

Mistubishi Estate Co Ltd., a Japanese real estate company, is in the business of developing, leasing, and managing properties. It isJapan's joint second-largest issuer of SLBs. The company made its debut in the SLB market in July 2022 with the issuance of three bonds, which have maturities of five, 10, and 30 years. In May 2023, Mitsubishi Estate further expanded its SLB portfolio by issuing two additional bonds with maturities of five and 10 years. The proceeds from these bonds are intended to support Mitsubishi's SPTs, which include achieving 100% renewable energy by 2025, reaching net zero emissions, and increasing the percentage of female managers to 40% by 2050. [38]

Daiwa House Industry Co Ltd, a Japanese construction and real estate company is the joint second-largest issuer of Japanese SLBs. The company issued its first two SLBs in September 2023, with maturities of five and 10 years. In April 2024, Daiwa House further expanded its SLB offerings with an additional bond maturing in 35 years. The proceeds from these bonds are intended to finance Daiwa House's strategy to achieve Carbon Neutrality by 2050, with specific SPTs focused on reducing Scope 1+2+ 3 emissions.[39]

[37] "NEC Discloses ESG Initiatives Supporting Sustainable Growth of Companies and Society", NEC Corp, 1 Sep 2023.
[38] "Sustainability Vision 2050-Linked Finance Framework", Mitsubishi Estate, accessed on 10 Sep 2024.
[39] "Daiwa House Industry Co., Ltd. Sustainability-Linked Finance Framework", Rating and Investments, accessed on 11 Sep 2024.

IMPORTANT DISCLAIMER:

This report is for information and educational purposes only. The Anthropocene Fixed Income Institute ('AFII') does not provide tax, legal, investment or accounting advice. This report is not intended to provide, and should not be relied on for, tax, legal, investment or accounting advice. Nothing in this report is intended as investment advice, as an offer or solicitation of an offer to buy or sell, or as a recommendation, endorsement, or sponsorship of any security, company, or fund.

AFII is not responsible for any investment decision made by you. You are responsible for your own investment research and investment decisions. This report is not meant as a general guide to investing, nor as a source of any specific investment recommendation. Unless attributed to others, any opinions expressed are our current opinions only.

Certain information presented may have been provided by third parties. AFII believes that such third-party information is reliable, and has checked public records to verify it wherever possible, but does not guarantee its accuracy, timeliness or completeness; and it is subject to change without notice.

Any reference to a company's creditworthiness or likelihood of positive or negative performance in the current or future market is purely observational and should not be taken as a recommendation or endorsement or critique of such company or security.

AFII is a non-profit organisation "to monitor, advocate for and influence the impact of the fixed income and bond markets in the age of human induced climate change". For more information about the Institute, please visit www.anthropocenefii.org.

AFII is not in any way associated with, nor are any of its directors, employees or advisors, any of the companies it references in its materials or reports and is not receiving compensation or consideration of any nature for its observations and/or insights.

