

MUFG TRANSIT: Reassessing Global Sustainability Themes on APAC

MUFG ESG Finance Department APAC
Asian Investment Banking Division

March 2025

MUFG Bank, Ltd.

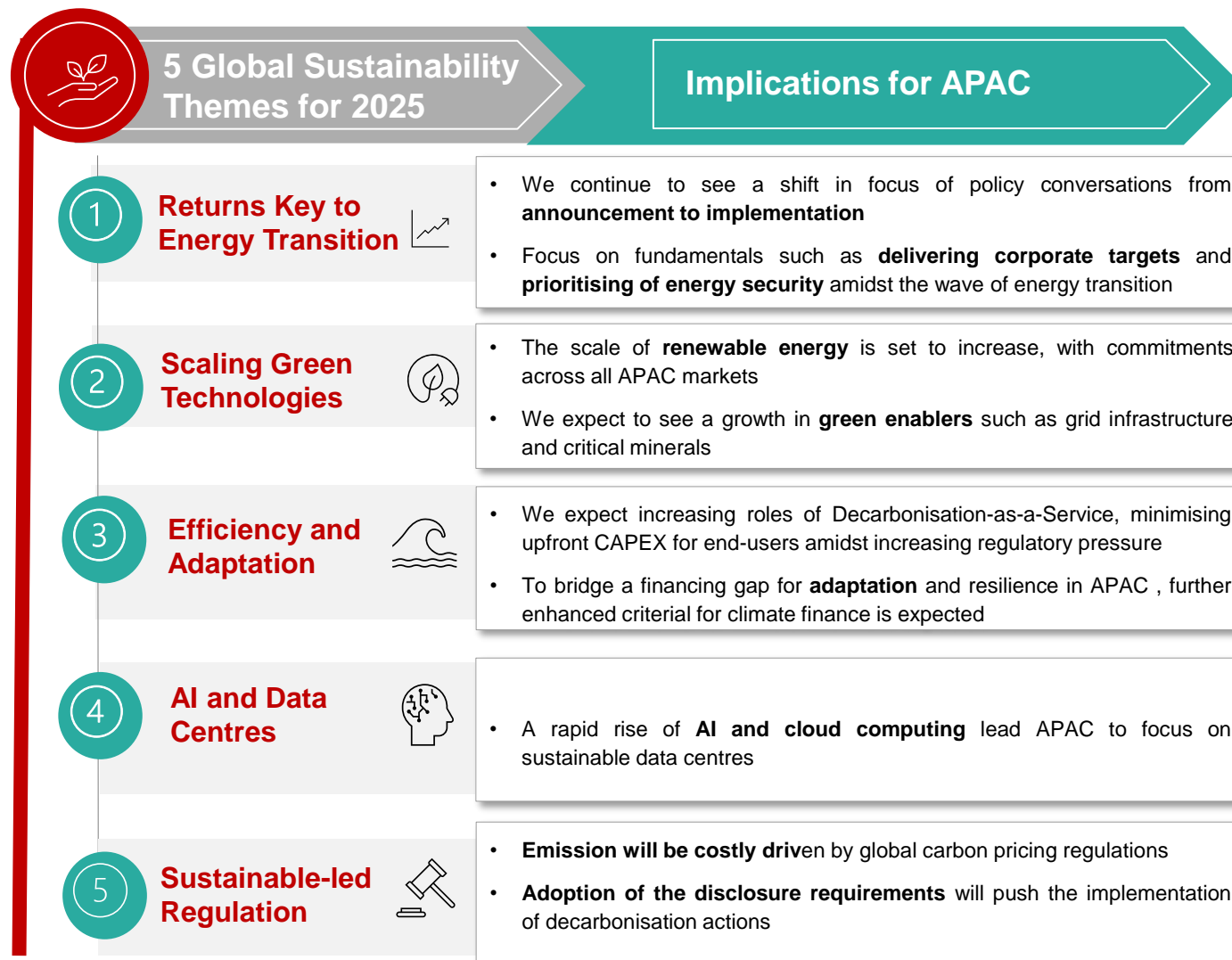
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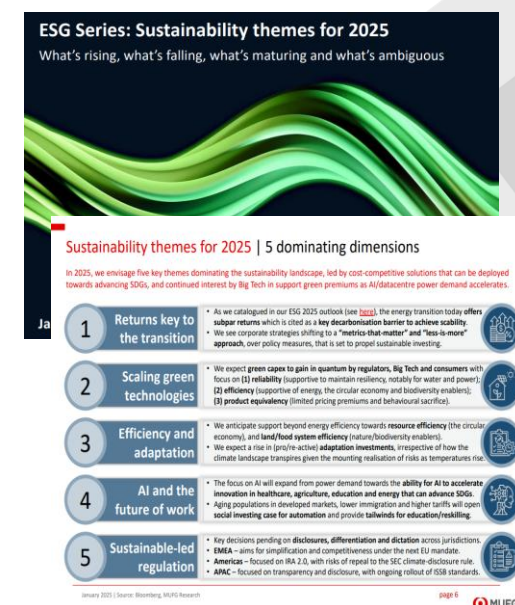
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This edition examines an applicability of MUFG's 5 global sustainability themes to an APAC context



See also [ESG Series: Sustainability themes for 2025](#) – Navigating the physical realities of the energy transition P.6 Sustainability themes for 2025



(<https://www.mufgresearch.com/commodities-esg/global-esg-14-january-2025/#>)

5 APAC Sustainability Themes for 2025





Section I



Theme 1 | Returns Key to Energy Transition


Advancement from announcements to implementation

In 2024, APAC markets have progressed from establishing energy transition strategies and defining roadmaps to

-  • Release **implementation guidelines**
-  • Issue **clean energy utilisation mandates**
-  • Clarify CCS/CCUS rulebooks to support **cross-border movements of CO₂**
-  • Provide essential **grants and incentives**, particularly for hydrogen and offshore wind sectors, which are otherwise not commercially viable

Energy security as a priority

Baseload security, is a theme that echoes LNG's importance as a transition fuel in the region.

-  • Markets such as Philippines & Vietnam with **high dependency on coal** are extending adoption of **natural gas**, securing a stable energy supply until alternative energy sources reach commercial maturity.

Self-sufficiency is also integral while attempting to explore new energy capabilities to reduce reliance on fossil fuels.

- Palm-oil producers e.g. Indonesia, Malaysia are exploring **bioenergy** as a way to maximise domestic resources self-sufficiently, reducing dependencies on energy imports.

See also [MUFG TRANSIT \(Mar 2025\) – APAC Energy Transition - Regulatory Round Up 2024](https://www.bk.mufg.jp/global/globalnetwork/asiapacific/anncts/pdf/apacnews_20250319_en.pdf)
(https://www.bk.mufg.jp/global/globalnetwork/asiapacific/anncts/pdf/apacnews_20250319_en.pdf)

While corporates continue to delicately **balance their growth objectives and decarbonisation agenda**,

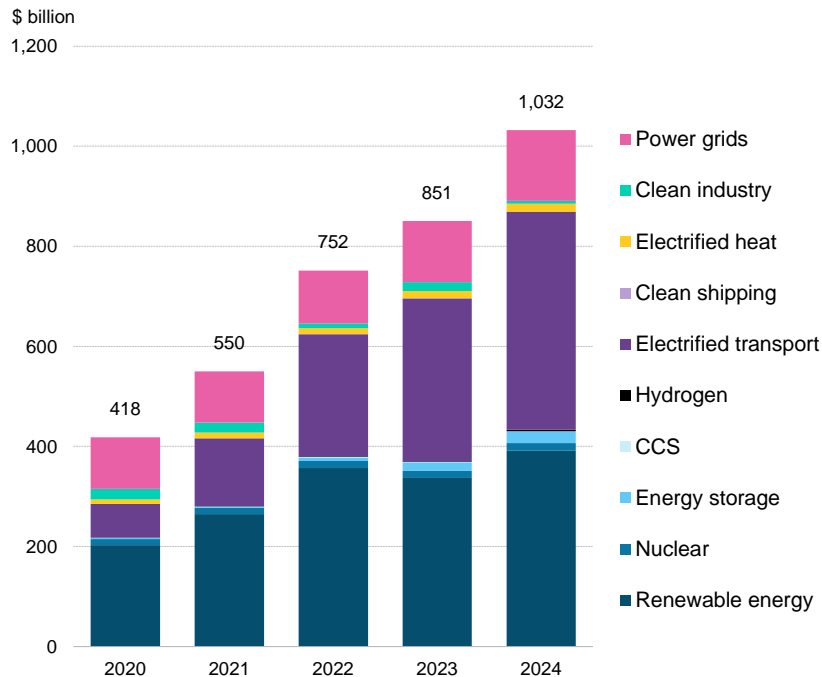
we expect strong policy support to play a role in driving certainty and economic viability in 2025.

Theme 2 | Scaling Green Technologies



The quantum of green capex is set to expand — in particular, APAC is looking to unlock green enablers as levers for decarbonisation

Clean Energy Investments in APAC:



Source: BNEF (2025)

- \$1tn**
- Within the past 5 years, APAC clean energy investments more than doubled to hit the \$1tn mark. This strong momentum is expected to continue.
 - We expect to see battery storage and grid infrastructure investments to further grow in share, with policymakers reprioritising investments towards **reliable & affordable technologies** and less emphasis on green premiums.

Increase in scale of renewables

~39%

- Projected average **renewable capacity** in power mix by 2030-35 up from 22% in 2023, sustained by APAC's commitments to energy transition

Green enablers will grow

Clean Transportation



- EV-related policies & infrastructure** to ramp up with EVs expecting to make up 50% of new car sales in APAC by 2050



- We expect the region to leverage its abundant source of **critical minerals**, with demand set to rise 65% by 2030 from 2022, driven majorly by clean technology.

Green grids



- Integration of renewable energy sources with main grids domestically and within ASEAN region is a rising factor to attract new wave of foreign investments
 - Java-Bali and Sumatra grid in Indonesia
 - Sarawak – Brunei & Sarawak – Singapore grids



Theme 3 | Efficiency and Adaptation (1/2)

Energy Efficiency

Decarbonisation-as-a-service(DaaS) model

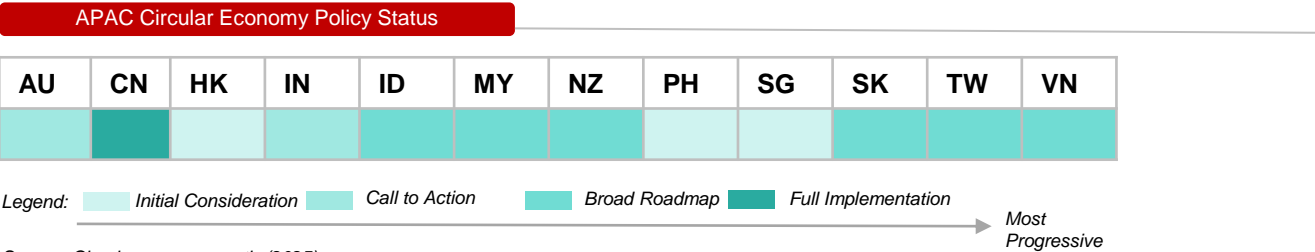
According to the IEA, energy efficiency is a low-hanging fruit, the “hidden fuel” for decarbonisation.

- We expect to see further expansion of DaaS from energy-related to broader decarbonisation technologies, **lowering upfront capital investment needs of end-users** across various solutions such as energy battery storage, cooling systems, EVs, heat capture systems

Resource Efficiency in Circular Economy

Global circular economy transition, catalysed by the EU is set to cascade a wave of greater advancement in APAC national policies and frameworks in this arena. Growing regulatory and consumer pressure is also set to push corporates towards future-proofing of supply chains.

- Following the mandatory **EU CSRD legislation** with materiality assessment entailing a circular economy category, related regulations have emerged in APAC
 - In APAC, **China** has the most advanced policy status on circular economy under its “**14th Five-Year Plan**” with quantitative targets set for utilization rates of materials such as waste paper, scrap steel & construction waste



Recent market activity driven out of DaaS service providers:

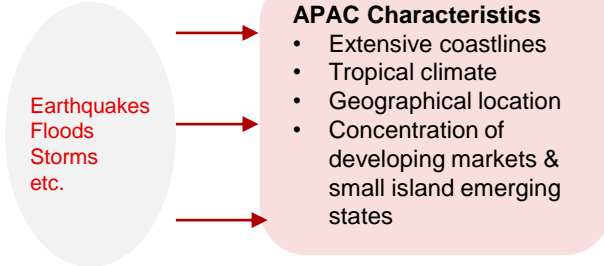
- In collaboration with Jacobs, **Gentari** established a dedicated DaaS solution arm in Nov 2024, leveraging on its existing expertise in Vehicle-as-a-Service (VaaS) to cover hydrogen, renewables & green mobility
- **Keppel** also inked an MOU with Sojitz in Jul 2024 to capitalise on its expertise in EaaS, in particular cooling systems, to pursue clean energy opportunities in the region



Theme 3 | Efficiency and Adaptation (2/2)

Adaptation

Climate Risks



With APAC's increasing exposure to **physical climate risks**, sustainable investments are required to bridge the financing gap.

\$160bn

Expected annual losses estimated to stem from natural disasters in APAC till 2030

- **Supnationals and governments** with budgetary-scale measures have been taking the lead to raise capital for adaptation/resilience financing eg. Australia, Hong Kong and Singapore municipalities
- However, only **<3%** supranational bond issuances (~\$4.7bn) referencing adaptation projects come from APAC

We see room for enhanced role of regulatory landscape to shape private capital finance for climate adaptation and resilience if clear criteria around such activities is specified.

- **Climate change adaptation** set to be next focus as an **environmental objective (EO)** in APAC alongside initial priority area of **climate change mitigation** in taxonomies
 - Certain upcoming markets such as **HK & Singapore** which currently only cover 1 EO (mitigation) recently announced plans to release adaptation criteria

COP29 Outcome

- Underscores **greater urgency to strengthen NDCs with National Adaptation Plans**
 - 2025 is a year of refresh for NDC submission, greater ambition from markets expected in communicating key adaptation priorities till 2035
- **New Collective Quantified Goal: \$300bn annual contribution** to bridge shortfall in climate finance with announced potential APAC beneficiaries e.g. **India, Indonesia, Philippines & Vietnam**



Theme 4 | AI and Data Centres

With DC capacity forecasted to more than double by 2028, driven out of rising adoption of AI and cloud computing, APAC leads the way to sustainable data centre growth



Source: CBRE (2024)

Market Size of DC Capacity in APAC (Existing + Projected):



- While China and India have highest existing DC capacity, **Malaysia & Indonesia** are top 2 emerging DC markets by capacity



- Johor** singled out as emerging regional hyperscale hub to capture spillover demand from **proximity of Singapore**

2024-2026 Upcoming Capacity (MW)

APAC's Data Centre Sustainability Focus



1

DC Energy Efficiency

- Rising AI workload and GPU deployment have higher heat rejection
- Shift towards **direct-to-chip/immersion cooling** as cutting-edge technologies proven to withstand SEA region's hot & humid climate



2

Green Energy Pairing

- Pairing of **renewable energy sources such as solar + battery storage** through green PPAs to meet growing power demand from AI
- Fulfill both **host country** and **entity-level requirements** for clean powered data centres



3

Sustainable Regulations

- Malaysia** to release stringent guidelines for DCs to utilize alternative water sources in light of Johor's DC boom, on the backdrop of rejecting ~30% DC applications in 2H 2024
- In May 2024, **Singapore** launched a **Minimum PUE* requirement of 1.3** for all data centres in its Green DC Roadmap

*Power Usage Effectiveness is defined as total power supplied to the DC versus the amount of power consumed by its core IT Equipment. A lower PUE score is more energy-efficient.

Source: MUFG compiled internally and various public sources

Case Study | EdgeConneX USD 404 Million Syndicated SLL



MUFG acted as Mandated Lead Arranger, Account Bank, Hedging Bank, Facility Agent, Security Agent for the USD 404m sustainability-linked loan facilities for the development and maintenance of 2 data centers in Jakarta, Indonesia

Transaction Overview

Borrower	PT Graha Teknologi Nusantara
Facility Size	USD 404 Million
Tenor	<i>Not publicly disclosed</i>
KPI	KPI1: Power Usage Effectiveness (PUE) of its data centers; KPI2: Use of renewable energy; and KPI3: Lost Time Injury Rate (LTIR)
Closing Date	August 2023
MUFG's Role	Mandated Lead Arranger Account Bank Hedging Bank Facility Agent Security Agent
Lenders	8 international lenders, including MUFG
Project Description	The Project involves the development and maintenance of 2 data centres, one brownfield and one greenfield in Jakarta, Indonesia. This will bring PT Graha Teknologi Nusantara's Indonesian hyperscale campus in Jakarta to over 120MW

Transaction Details & Key Highlights

- **Landmark sustainability transaction:** This financing represents the **first ever sustainability-linked facilities for data centres in Indonesia**. The format provides for margin adjustments when certain KPIs concerning the Power Usage Effectiveness, use of renewable energy, and achievement of safety goals are met. This inaugural transaction paves the way for more sustainable data centre transactions in Indonesia and more widely across APAC.
- **Strong relationships across APAC:** This transaction was a successful follow-up from another EdgeConneX transaction in APAC, showing MUFG's commitment to support our clients across borders by leveraging on MUFG's global platform.
- **Support for growing market:** As the largest city in Indonesia, Jakarta is a gateway to a country with strong demographics, a rapidly homegrown technology sector and long-term upside. Indonesia, as a whole, also has a forward-looking agenda to digitalise. Data centres will serve to unlock new opportunities and empower the businesses of Indonesia.
- **Integrated product offerings:** MUFG's proven track record in providing agency roles across a diverse range of portfolios and geographies allowed us to clinch multiple ancillary roles including Account Bank, Facility Agent and Security Agent. This effectively demonstrates MUFG's competitive advantage to provide our clients with a full suite of product offerings that are tailored to their needs.



Theme 5 | Global Sustainable-led Regulation

Emissions will be costly

APAC Carbon Pricing Landscape												
AU	CN	SG	SK	ID	IN*	MY*	NZ	TW*	TH*	HK	VN	PH
Hybrid				Compliance						Voluntary		NA

*New markets which have announced compliance scheme but not implemented yet

- With more import markets contemplating a similar approach to **EU Carbon Border Adjustment Mechanism**, more markets to move towards compliance carbon pricing regimes in potential recognition by EU
- Domestic carbon tax will expand in the attempt of conserving carbon tax revenue within the border
- Expansion of **industry-led** compliance regulations is set to continue with maritime being the next upcoming sector after international aviation

Major Targets

EU CBAM
€68.4/ tCO₂

  
India Taiwan South Korea

CORSIA
\$18-51/ tCO₂

Top-3 International Airlines in APAC

  
SINGAPORE AIRLINES KOREAN AIR CATHAY

Maritime
(under EU ETS)
\$150-300/ tCO₂

Top-3 Maritime Hubs

China, Singapore, Hong Kong

Consolidation of disclosure requirements

- Following finalisation of global **ISSB S2 baseline climate reporting**, **Hong Kong, Malaysia & Singapore** are the first batch of markets to mandate ISSB-aligned climate disclosures for listed companies in 2025
- Next batch of APAC markets to look out for which have announced mandatory climate reporting are **China, Indonesia & South Korea** with a timeframe of 2026-27 implementation



MUFG Sustainability Commitments

Section II

MUFG | Sustainable Finance Commitments

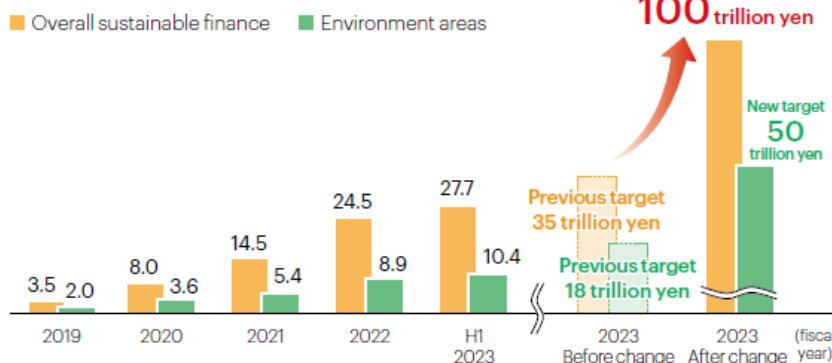
MUFG has continued to rank among top-5 banks for sustainable finance in APAC, committing to deliver our overall sustainable finance target to 100 trillion-yen by 2030

Background for raising target level

- Strong progress against the existing target of 35 trillion yen, reaching 27.7 trillion yen (79.2% achievement) as of H1 FY2023
- Raised the target level in anticipation of even broader support for green bonds and renewable energy project financing in response to growing demand for funds for carbon neutral initiatives^{*1}

New target
100 trillion yen
(including **50 trillion yen** for environment areas)

Cumulative financing over time (trillions of yen)



^{*1} Estimated required capital investment of 150 trillion yen over the 10 years starting in 2023 in Japan (per the Basic Policy for Realization of GX by the Japanese government), and 5 trillion U.S. dollars per year globally (per net zero scenarios by the Network for Greening the Financial System (NGFS))

^{*2} International Capital Market Association

Source: MUFG Climate Report 2024

Clear definition of the target financing

- Type of finance included in the target (must satisfy any of the following criteria)
 - (1) Finance compliant with international standards (e.g., ICMA² principles)
 - (2) Finance aimed at resolving environmental and social issues
 - (3) Sustainability-related products by MUFG

For specific types of the target financing and their definitions,

- Progress for each type of target financing is to be disclosed biannually

Impact of sustainable finance

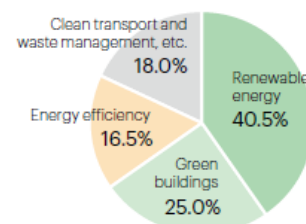
- Reduction of CO₂ through renewable energy project finance (positive environmental impact)

MUFG has reduced CO₂ emissions by a cumulative 36 million tons (from FY2019 to FY2022)

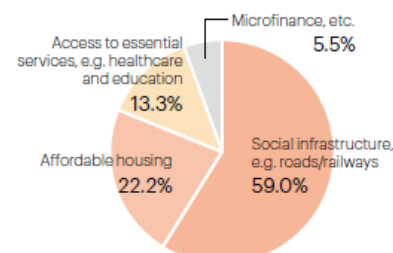
→ Equivalent to annual CO₂ emissions by approximately 25% of Japanese households

- Projects that have generated a positive impact on the environment and society through financing (based on data available from client disclosures and compiled for FY2022)

Green loans and bonds



Social loans and bonds



MUFG ESG Financing Credentials in APAC

MUFG CREDENTIALS AS ESG ADVISOR / COORDINATOR IN APAC (EX-JAPAN)

					
Shriram Finance	QIC Property Fund (QPF) / QIC Town Centre Fund (QTCF)	The Kingdom of Thailand	Housing and Urban Development Corp	Kerry Logistics Network Ltd	Credila
USD1.277bn eq Social Loan	AUD3.75bn SLL	THB30bn SLB	JPY64bn Sustainable Loan	HKD1bn Social & SLL	USD512mn debut Social Loan
MLAUB, Social Loan Coordinator	Joint Sustainability Coordinator	Joint Sustainability Structuring Advisor, Joint Lead Manager & Joint Bookrunner	MLAB, Joint ESG Loan Coordinator	MLABU, Sustainability & Social Structuring Adviser	Lead Social Loan Coordinator, MLAB
December 2024 (India)	December 2024 (Australia)	November 2024 (Thailand)	November 2024 (India)	October 2024 (Hong Kong)	October 2024 (India)
					
Zelestra Corporacion	Republic of Indonesia	Investa Commercial Property Fund	PT IMG Sejahtera Langgeng	Waste Management NZ	AdaniConneX
INR12.3bn Green Loan	USD2.35bn Sukuk (green tranche of USD600mn)	AUD600mn Green Loan	USD450mn Loan (green tranche of USD225.8mn)	NZD1,100mn SLL Facility	USD875mn SLL
MLA, Sole Green Loan Coordinator	Joint Bookrunner, Joint Green Structuring Advisor	MLAB, ESG Coordinator	MLAB, Green Loan Coordinator	Sustainability Coordinator, MLAB	MLA, Sustainability Coordinator
September 2024 (India)	June 2024 (Indonesia)	June 2024 (Australia)	May 2024 (Indonesia)	April 2024 (New Zealand)	April 2024 (India)
					
PT Federal International Finance	Shriram Finance	State Bank of India	Apical (RGE Group)	HaiLong Offshore Wind Power	Blackstone Real Estate
USD60mn Sustainability Loan	USD750mn Social Bond	USD250mn Green Note	USD1bn eq. SLL	NTD11bn Green Loan	AUD1.4bn SLL
Sustainability Coordinator	Joint Lead Manager	Green Note Advisor	MLAB, Sustainability Coordinator	MLA, Green Loan Coordinator	ESG Coordinator, Bookrunner & MLA
April 2024 (Indonesia)	January 2024 (India)	December 2023 (India)	December 2023 (Indonesia)	September 2023 (Taiwan)	August 2023 (Australia)

2024 APAC SUSTAINABLE FINANCE LOAN G3 LEAGUE TABLES

Rank	Bookrunner & MLA	# Deals	Volume (USDm)
1	Mizuho	79	25,207
2	MUFG	49	25,199
3	BOC	23	24,023
4	OCBC	19	20,420
5	SMBC	42	17,371
6	DBS	18	16,938
7	CCB	14	16,339
8	ABC	10	12,891
9	BOCOM	8	12,802
10	SCB	19	12,658

* Volume (USDm): Full league table credit for each tranche; Country by borrower country

MUFG NAMED BEST SOCIAL IMPACT ADVISOR & SUSTAINABLE BANK



Best Social Impact Advisor
The Asset Triple A Sustainable Capital Markets Award 2023



Best Sustainable Finance Advisor
The Asset Triple A Sustainable Capital Markets Award 2022



Best Sustainable Bank
Indonesia, Singapore, Malaysia, Thailand



Best Sustainable Bank
Hong Kong, India, Indonesia, Singapore, Taiwan, Thailand

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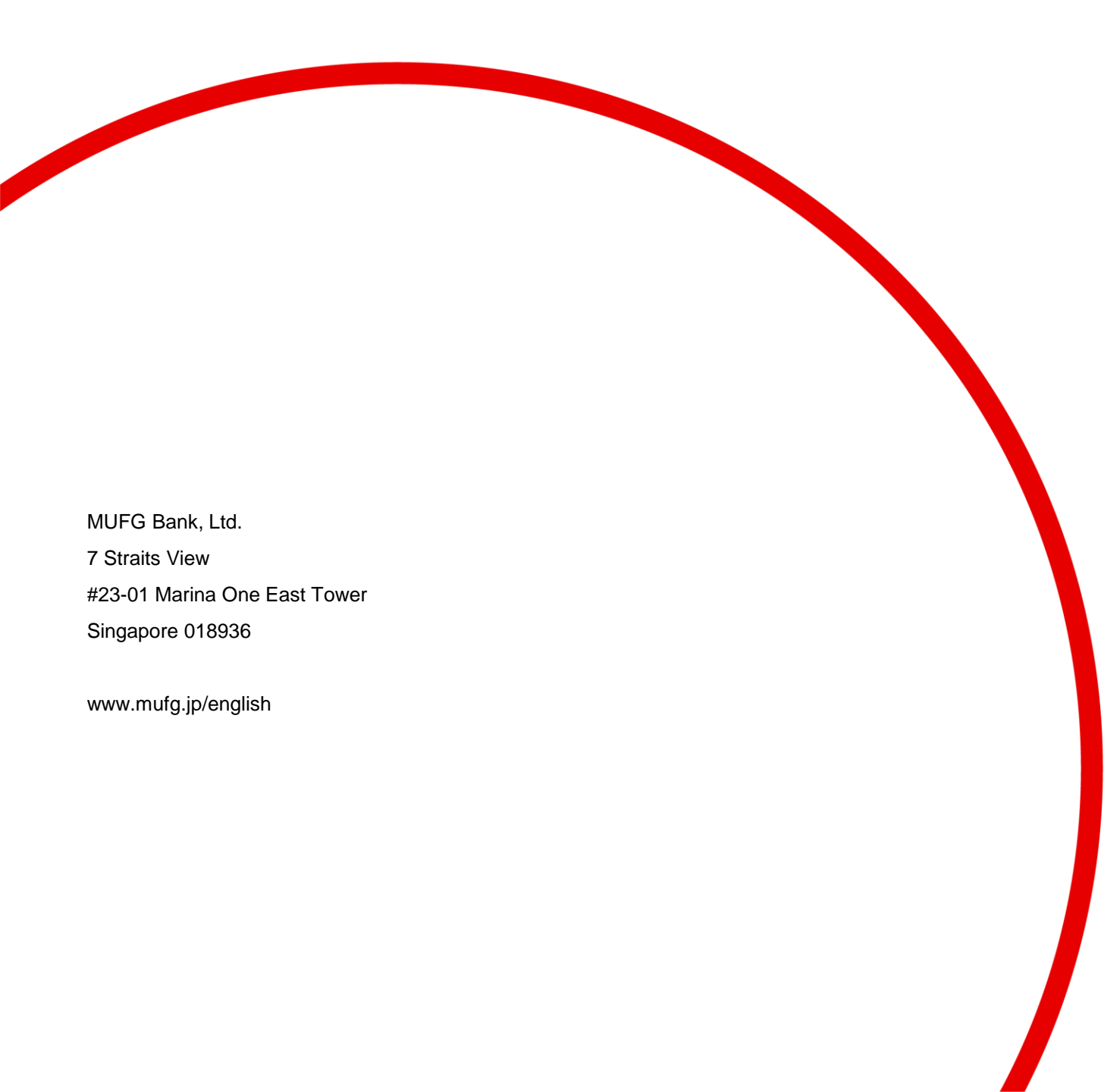
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