



URBAN SOLUTIONS AND SUSTAINABILITY R&D CONGRESS 2023

Building Sustainable Resilient and Liveable Cities of Tomorrow

FINANCING THE NET-ZERO TRANSITION



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SUSTAINABILITY & CLIMATE-RELATED RISKS & CHALLENGES IN THE REGION

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●●● Asia and The Pacific: Sustainability-related Challenges

Balancing Act: Navigating Population Growth, Energy Supply, and Climate Incidents Amid Economic Thriving



Population without access to electricity

Developing Asia (total)	155M	155 M
Other developing Asia	112M	112 M
Other Southeast Asia	36M	
India	6M	
Indonesia	2M	

AROUND 150 MILLION PEOPLE IN ASIA AND THE PACIFIC LACK ACCESS TO ELECTRICITY, WHILE MANY MORE COOK USING UNHEALTHY, POLLUTING FUELS, STUNTING ECONOMIC GROWTH AND SOCIAL DEVELOPMENT.

ASIA AND THE PACIFIC IS CURRENTLY RESPONSIBLE FOR **OVER 50% OF GLOBAL GREENHOUSE GAS EMISSIONS.**




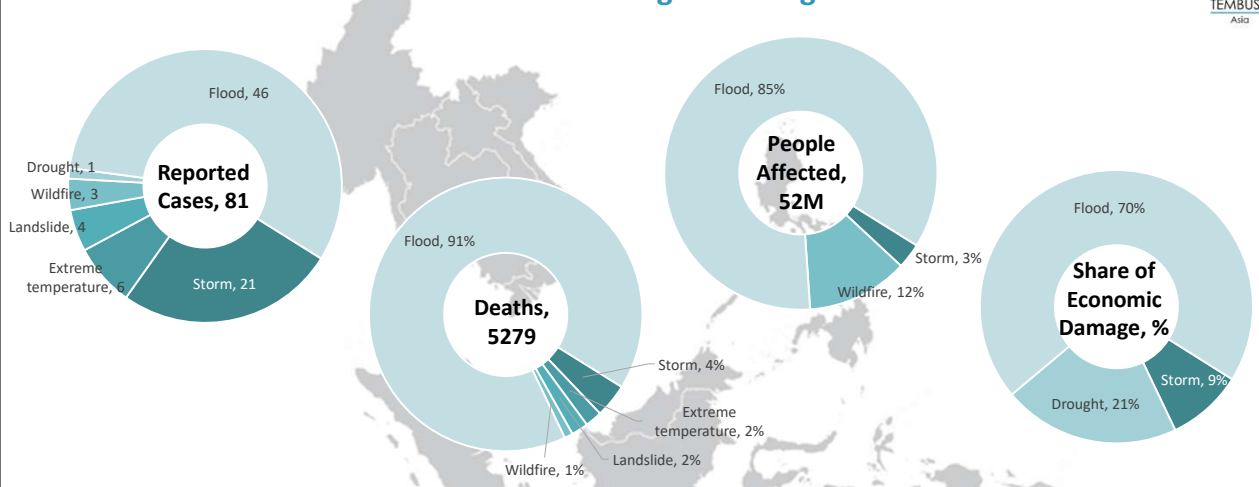


Credit: Asian Development Bank
Source: <https://www.adb.org/climatebank>

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●●● South East Asia: Climate Change Challenges





Reported Cases, 81

- Flood, 46
- Storm, 21
- Extreme temperature, 6
- Landslide, 4
- Wildfire, 3
- Drought, 1

Deaths, 5279

- Flood, 91%
- Storm, 4%
- Extreme temperature, 2%
- Landslide, 2%
- Wildfire, 1%

People Affected, 52M

- Flood, 85%
- Wildfire, 12%
- Storm, 3%

Share of Economic Damage, %

- Flood, 70%
- Drought, 21%
- Storm, 9%

- **Population:** 685,124,652, 8.58% (Jan 4 2023, UN)
- **Costal line:** 130,000 km (81,250 miles)
- **GHG emissions:** 12% of world's GHG

Source:
 • <https://www.worldometers.info/world-population/south-eastern-asia-population/>
 • <https://public.wmo.int/>

Economic industries set to lose trillions by 2070

- Services industry could lose \$9 trillion
- Manufacturing sector faces \$7 trillion of losses
- Retail and tourism could collectively lose \$5 trillion

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South East Asia Climate Ambition



COP26 raised SEA's climate ambition, with eight out of ten countries now having net zero targets and two new countries piloting carbon taxes

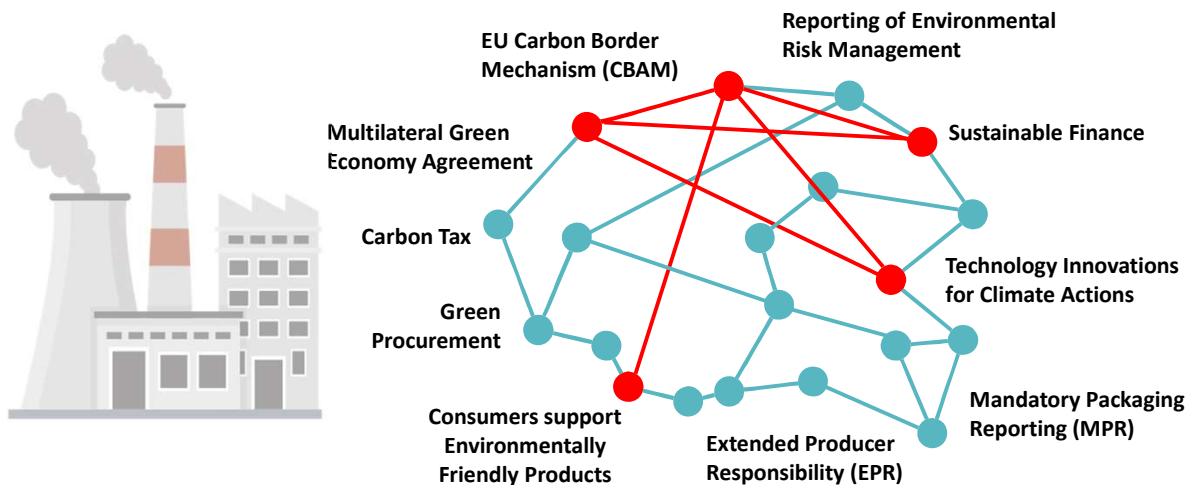
	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Net Zero	2050	(2050+) ¹	2060	2050	(2050+) ¹	NA	NA	2050+ ²	2065	2050
Emissions reduction³										
NDC date of submission	Dec 2020	Dec 2020	Jul 2021	May 2021	Jul 2021	Aug 2021	Apr 2021	Mar 2020	Oct 2020	Sep 2020
Unconditional	~20%	~42%	~29%	~60%	~45% ⁴	NA	~3%	~36%	~20%	~9%
Conditional			~41%	~67%			~75%		~25%	~27%
Carbon pricing (in USD)	Carbon pricing to be implemented by 2025	NA	Carbon tax (~\$2/tCO ₂ e) for coal power, full market by 2025	NA	NA	NA	Carbon tax and ETS under consideration	Carbon tax (~\$4/tCO ₂ e) implemented, to increase to \$40-60 by 2030	ETS under consideration	ETS legalized - Pilot Carbon Exchange from 2025
Renewables capacity	30% by 2035	25% by 2030	~48% by 2030	30% by 2025 ⁵	~40% by 2035	11% by 2030 ⁶ (non-hydro)	~35% by 2030	~15% by 2030 ⁷	30% by 2030	~32% by 2030
← Regional target of 35% by 2025 (from ~24% in 2018) →										
Nature	Increase forest reserves from 41% to 55% by 2035	Increase forest cover to 60% of total area by 2030	Protect 5.8m ha of forests and 1.9m ha of peatlands by 2030	Increase forest cover to 70% of total area (conditional) by 2030	Protect >20% of terrestrial and 10% of coastal areas by 2025	Increase forest under public protection to 30% of total area by 2030	Eliminate net loss in natural forests, mangrove, seagrass, coral cover by 2028	Plant 1m more trees and add 130ha of new parks by 2030	Increase forest cover to 55% of total area by 2037	Increase forest cover to 42% of total area by 2030

Note: (1) Committed to carbon neutrality by 2050, no direct commitments on net zero (expecting 2050+); (2) By or around 2050; (3) Emissions reduction refers to target reduction by 2030 from BAU. Unconditional reduction targets are non-dependent on external support. Conditional targets dependent on sufficient support from international community; (4) Reflects emissions intensity of GDP relative to BAU; (5) Target has not been revised since 2011, expressed as % of consumption; (6) Unconditional target of 11% non-hydro renewables by 2030; (7) Solar capacity target by 2030, as % of estimated total capacity | Source: MINECC NDC Registry; ACCEP; MINECC New Straits Times Eco-Business (1) Government of Thailand; Climate Action Tracker; Reuters (1) CNN (1) VietnamPlus; ASEAN State of Climate Change Report; ASEAN Plan of Action for Energy Cooperation; Reuters (2) Mongabay; Greenplan; Power-technology; TheEdge; ITC Eco-business (2) Government of Philippines; map; BusinessInsider; BangkokPost; IEA; ILO; Platform2030/decision; usip; IOD

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A Just Transition to Net-Zero

Co-evolution of market trends, regulatory requirement, technologies, business strategies, societal pressure etc. are driving the transition to low-carbon economy



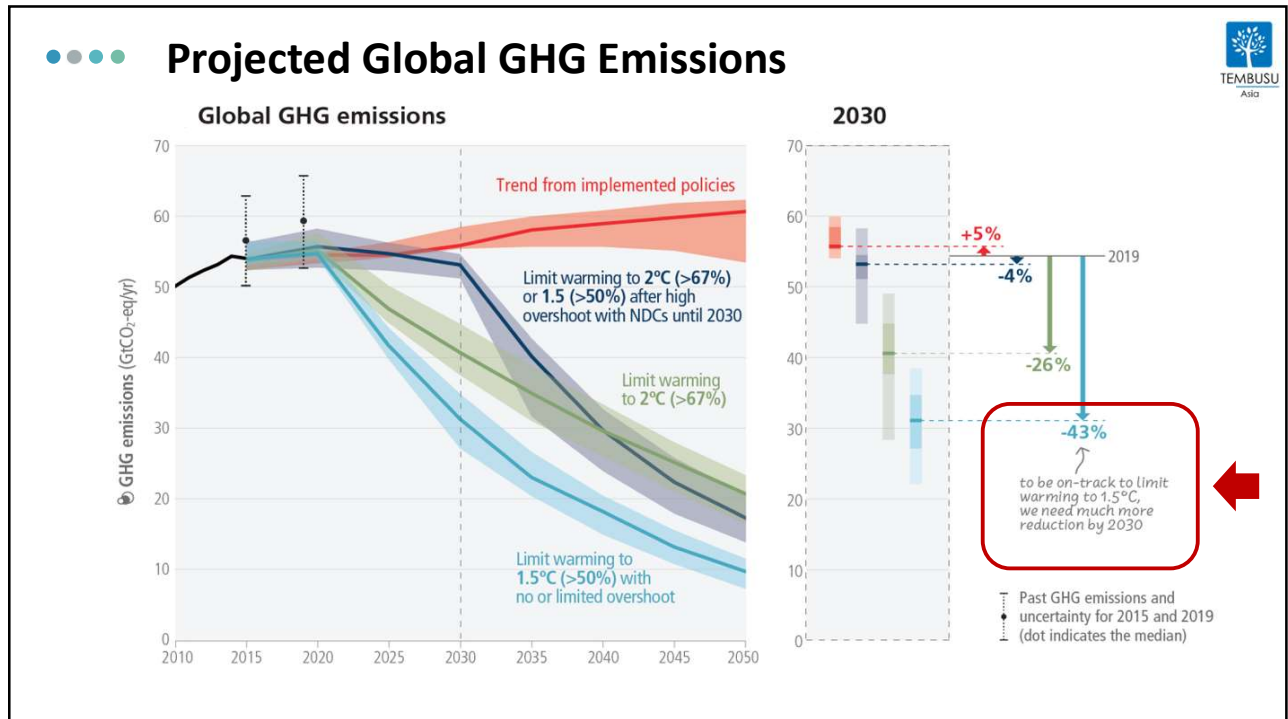
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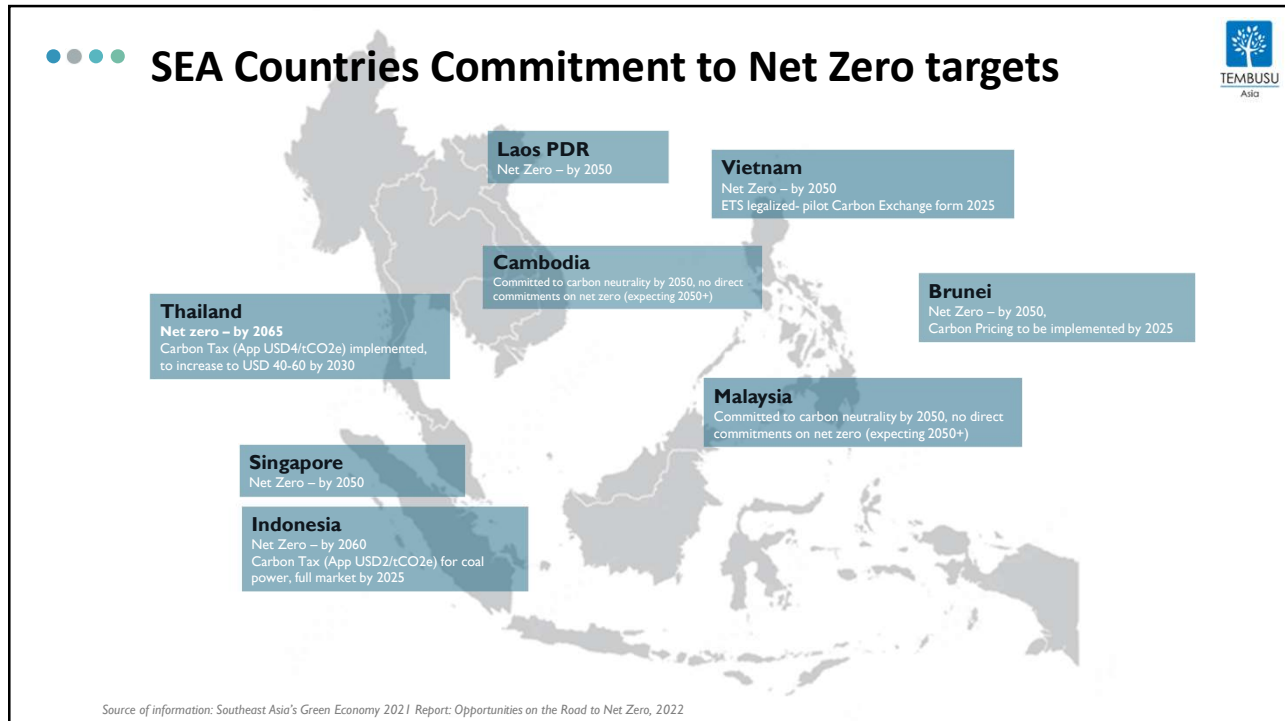
CLIMATE INITIATIVE AND DECARBONIZATION



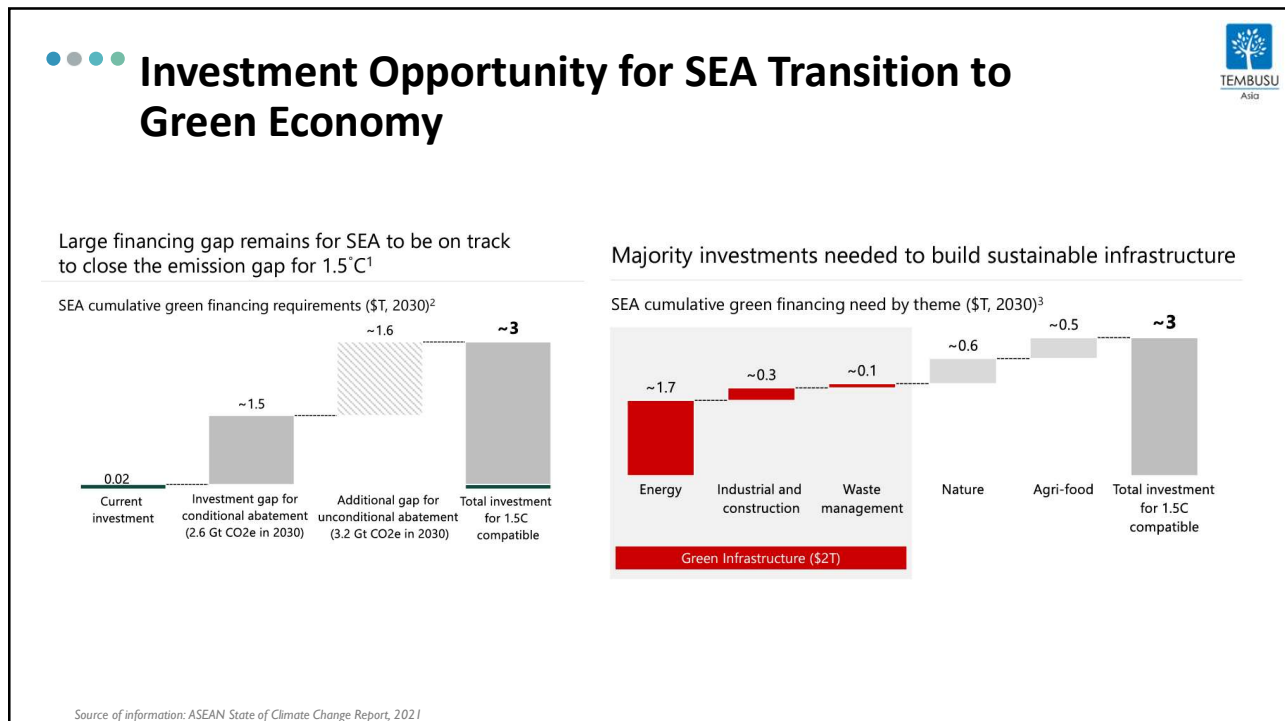
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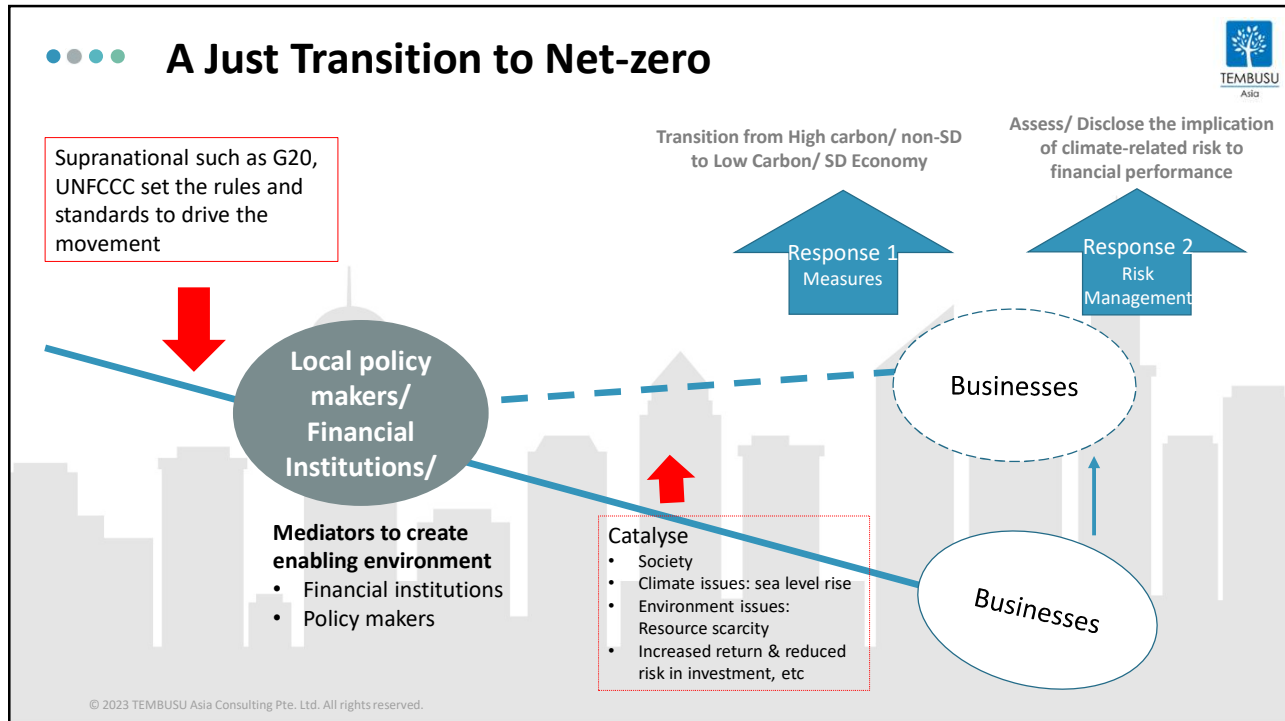
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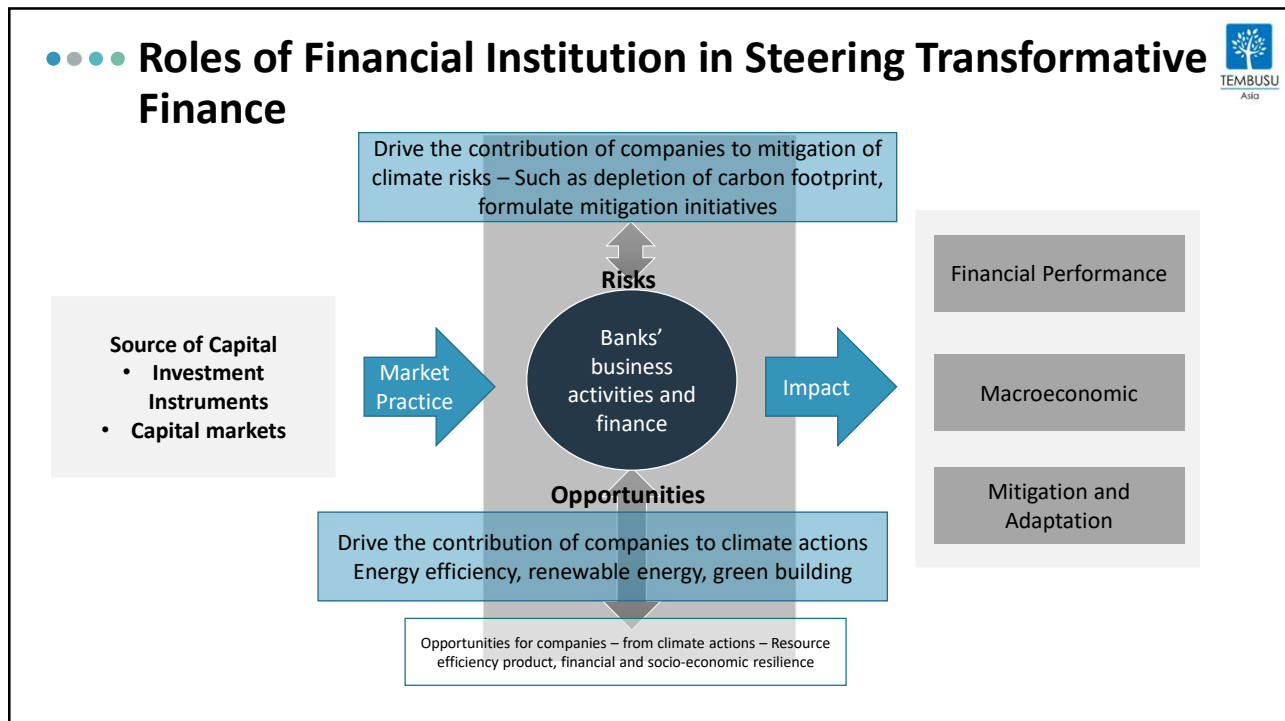
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Green Financial Products

Retail Banks

- Green Mortgage
- Green Home Equity Loan
- Green Commercial Building Loan
- Green Car Loan
- Green Credit Card




Insurance Providers

- Green Insurance
- Carbon Insurance
- Takaful
- Catastrophe Insurance
- Auto Insurance


Asset Management

- Green Fiscal Fund
- Green investment Fund
- Carbon Fund
- Eco Fund
- Catastrophe Bond



Corporate and Investment banks

- Green Project Finance
- Carbon Finance
- Green Securitization
- Green Indices
- Carbon Commodities
- Green Sukuk
- Green Venture Capital & Private Equity



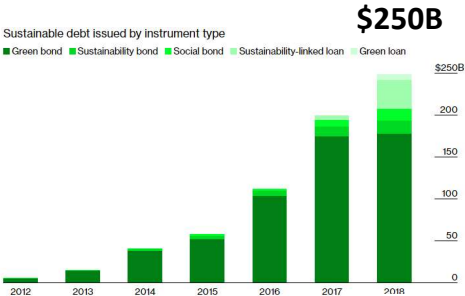
Source: Global Association of Risk Professional (GARP), Sustainability and Climate, Pearson Education, Korea Capital Market Institute
Credit: www.flaticon.com

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Dimension of Sustainable Finance

Sustainable Debt Issued by Instrument Type

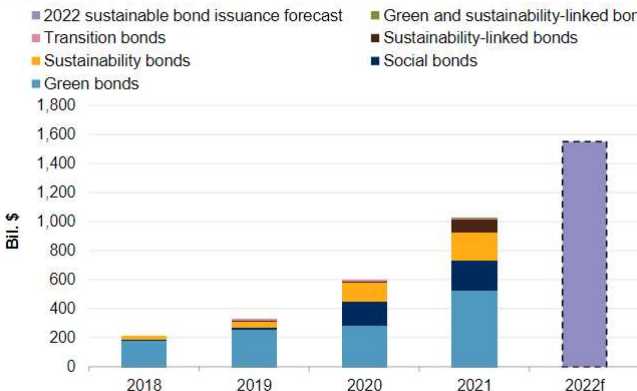


\$250B

Source: BloombergNEF

Global Sustainable Bond Issuance Set To Surpass \$1.5 Trillion In 2022

Annual issuance in sustainable bonds by instrument type

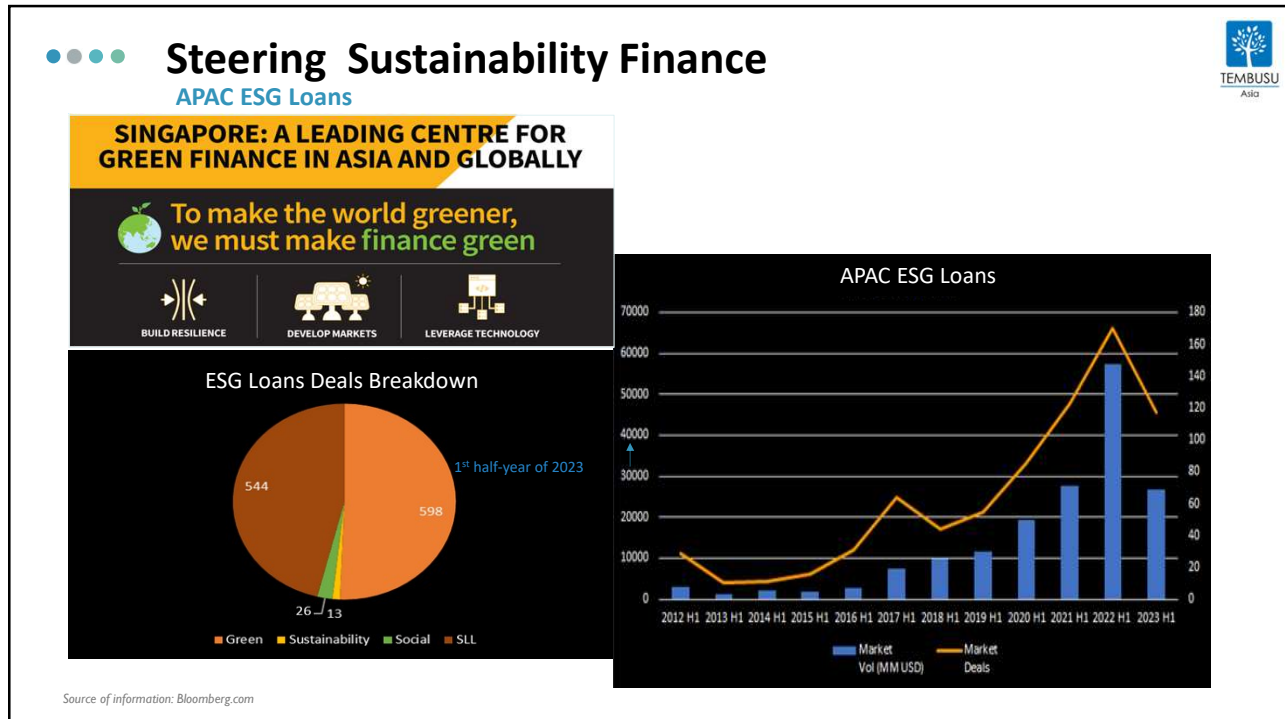


*Green and sustainability-linked bonds have both use of proceeds and sustainability-linked features. f--forecast. Sources: Environmental Finance Bond Database, S&P Global Ratings. Copyright © 2022 by Standard & Poor's Financial Services LLC. All rights reserved.

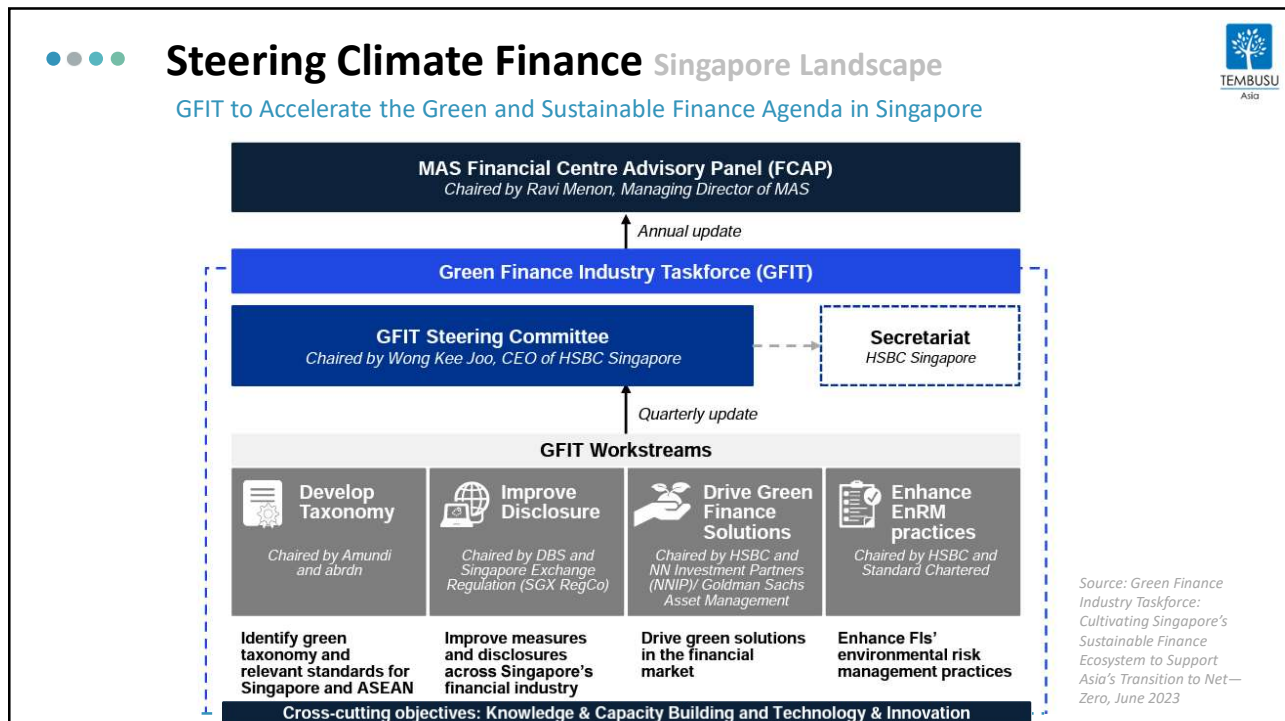
Source: <https://www.bloomberg.com/graphics/2019-green-finance/>

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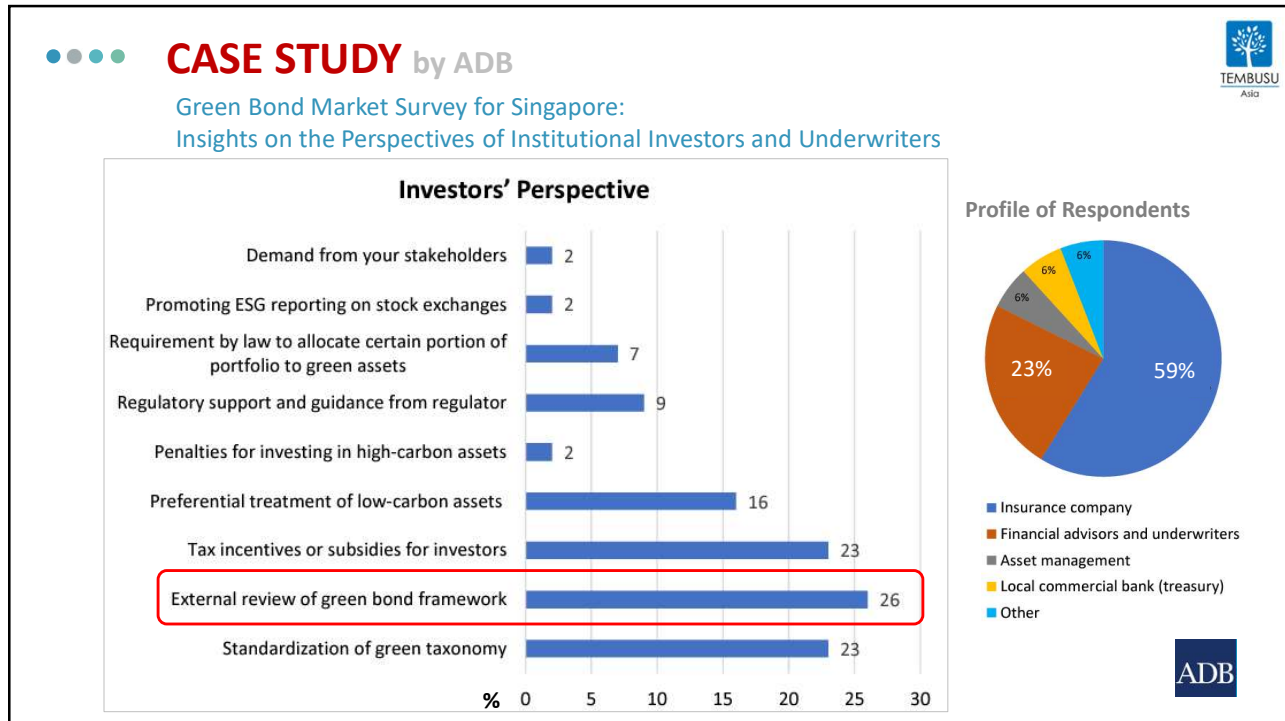
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Newer and Greener Finance Ecosystem for Businesses



The Bond Principles

The Loan Principles








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Green, Social, Sustainability, Sustainability-linked Finance Initiatives




Green Loan Principles



Social Loan Principles



Sustainable-linked Loan Principles



Use of Proceeds*

Green, Social, Sustainability Bonds ("GSS" or "UoP")

Core Components:

1. Use of Proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting

Key Recommendations:


1. Bond Frameworks
2. External Reviews

General Purposes*

Sustainability-Linked Bonds ("SLBs")

Core Components:

1. Selection of Key Performance Indicators (KPIs)
2. Calibration of Sustainability Performance Targets (SPTs)
3. Bond characteristics
4. Reporting
5. Verification



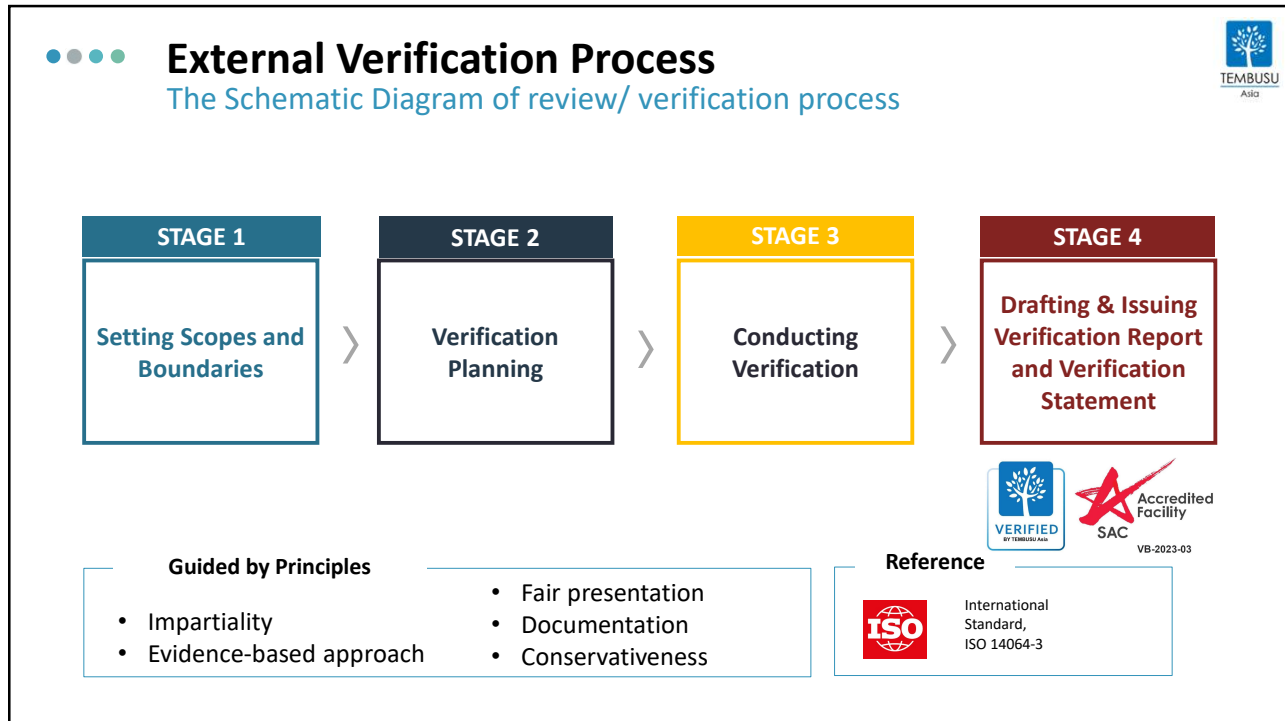
Climate Transition Finance Handbook (CTFH)
(Guidance may be applied to GSS/UoP Bonds or SLBs)

Financial Instrument Guidance

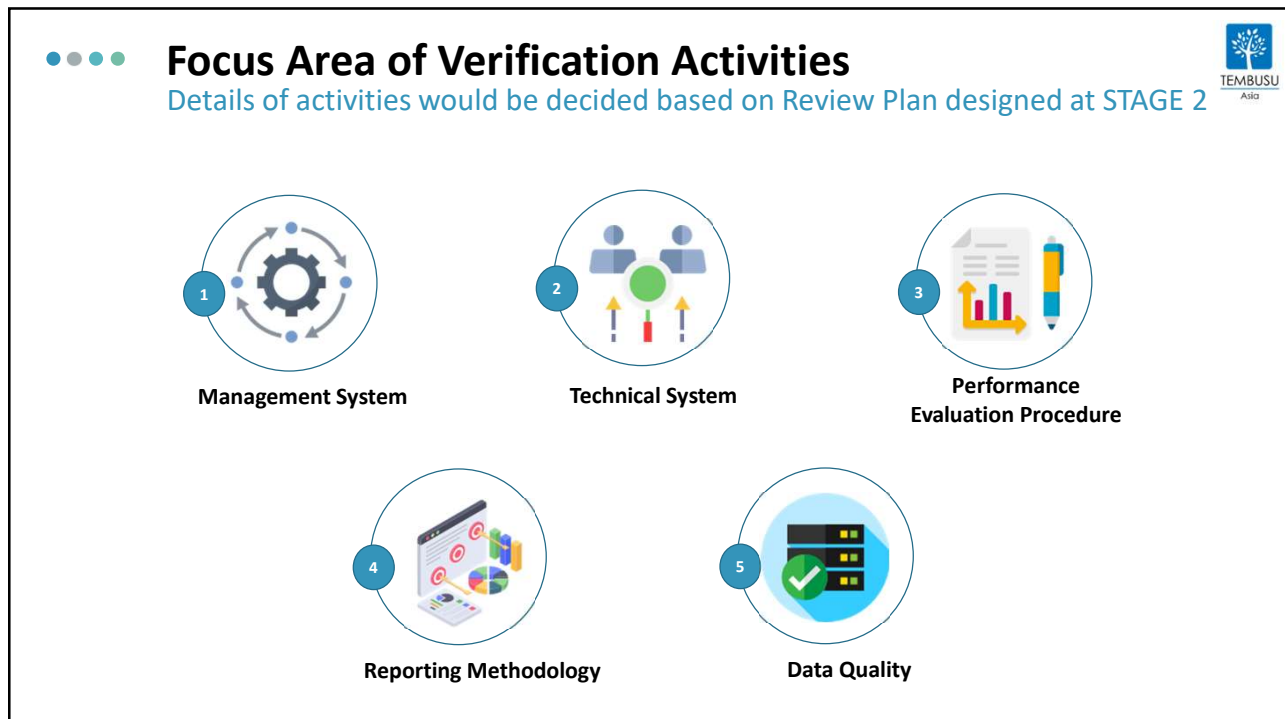
Thematic Guidance NEW

Source: Adapted from Guidance Handbook, ICMA 2023

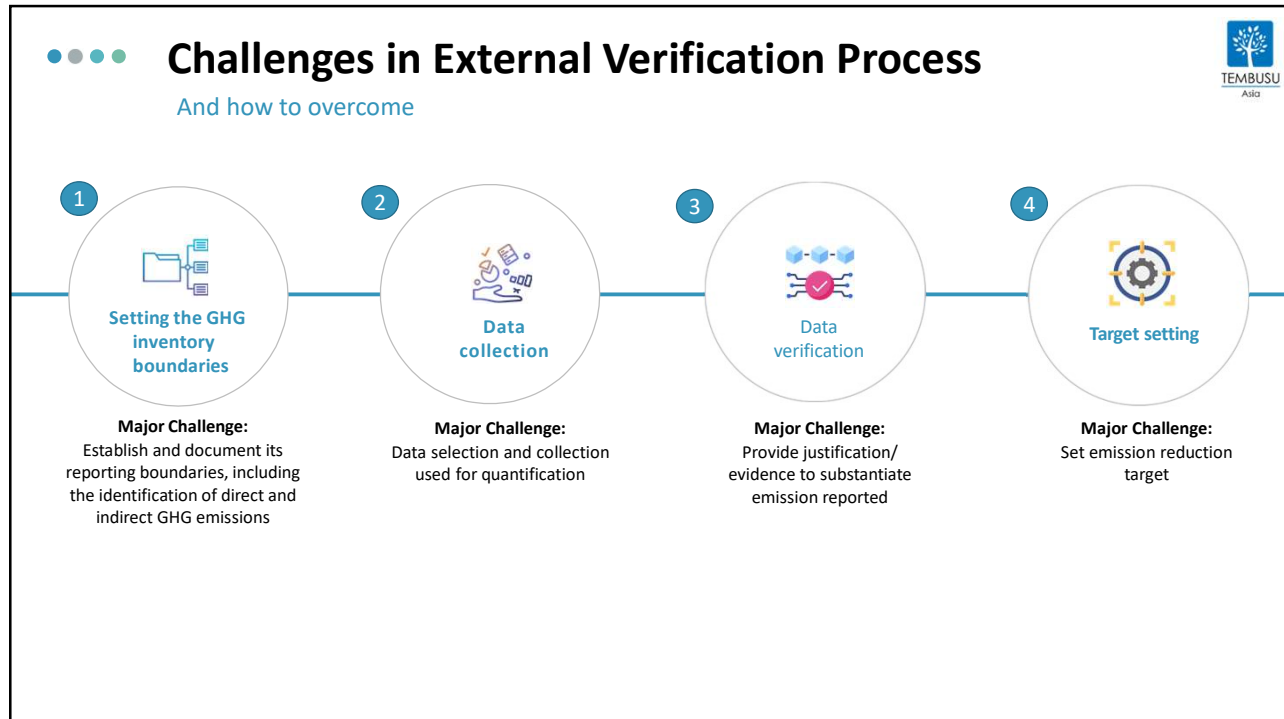
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Verification of Sustainability Performance Target and KPI for Sustainability-linked Loan

TEMBUSU Asia was engaged by a multi-disciplinary company in the Oil & Gas industry to review and verify the baseline for their Sustainability Performance Targets (SPT) and Key Performance Indicators (KPI) for a Sustainability-Linked Loan. TAC served as an independent party to review its SPT and KPI identification and verified its GHG inventory baseline in accordance with the International Standard ISO 14064-3:2019.

Scope:


- Reviewed a subset of reported data, calculations and methodologies used to generate the inventory report and GHG data management system
- Conducted select field audits of a representative facility
- Conducted desk audit of data
- Examined the reported levels of accuracy and uncertainty of emission estimates


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THANK YOU



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