

ESG Deals Creation and Impact Investing in Malaysia

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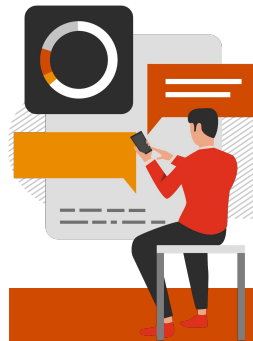
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ESG, an increasing focus for global and domestic investors

Southeast Asia has experienced rapid economic growth and urbanisation in recent years. However, these advancements have come at the cost of significant environmental challenges of deforestation and escalating greenhouse gas emissions, the primary contributors to climate change. In response to growing market concerns on sustainability challenges and risks, investors are increasingly prioritising investment opportunities that address major environmental issues, with USD 5.2bil worth of green investments made in Southeast Asia in 2022¹.



Amongst the ASEAN-6 countries², the Malaysian government has committed to achieving the largest emission reduction target of 45% by 2030, underpinned by initiatives in the 12th Malaysia Plan to foster a green economy by promoting low carbon industries, decarbonisation, circular economy and clean energy transition. There has also been growing interest from foreign and domestic investors in Malaysia's green economy. This is driven by the critical need to mitigate environmental and social impact and improve access to green financing. A supportive regulatory environment and increased collaboration between government and corporate sectors further spur this interest.

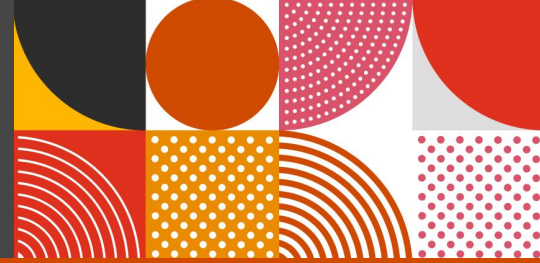


“We see a growing client interest in Asia for impact investments focused on climate change, energy transition, industrial decarbonisation, sustainable food and agriculture, and sustainable transportation”

Head of Sustainability Management for Asia, global private bank

Note: ¹Includes transactions involving corporates, PE/VC, infrastructure funds, climate-focused 'green' funds, sovereign wealth funds and government-affiliated companies, ²Singapore, Malaysia, Philippines, Indonesia, Vietnam and Thailand
Source: Southeast Asia Green Economy 2023 Report, PwC analysis

ESG, an increasing focus for global and domestic investors



In Malaysia, companies with ESG focus are favourably positioned for higher valuations and investment returns over the long term, with increased corporate transparency and responsible governance to stakeholders.

Benefits of ESG for businesses



Enhanced brand equity and goodwill from closer alignment to ESG practices



Increased demand from institutional investors for ESG compliant practices



Sustainable business practices, leading to higher quality earnings



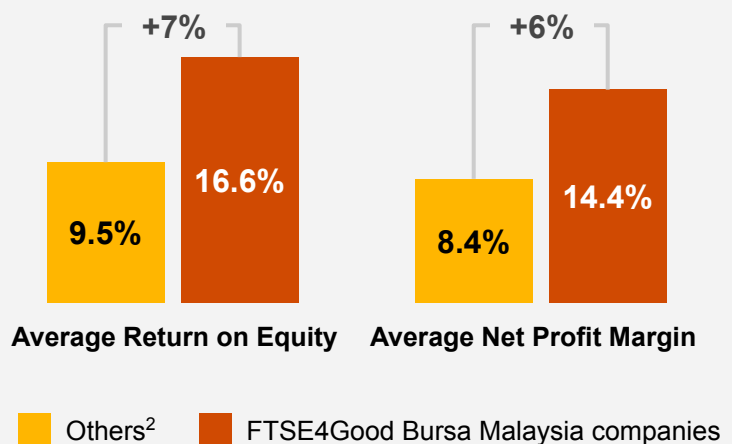
Ability to address ESG considerations through **innovative technology**



Ability to **minimise exposure to ESG-related business and operational risks**

Public listed companies (PLCs) with ESG investments¹ have been trading at higher valuation multiples, supported by higher shareholder returns and profitability

1.7x Higher in price-to-book value for companies in FTSE4Good Bursa Malaysia (F4GBM) Index



“Companies are encouraged to embrace ESG elements, because it is an increasing denominator in determining company valuation, as well as influencing investors' and consumers' confidence”

Chief Executive Officer, the government's principal investment promotion agency

“If companies were to embrace ESG, it would help lift stock valuations and increase long term returns to investors”

Managing Director, financial services institution

Note: ¹Defined as companies listed in FTSE4Good Bursa Malaysia (F4GBM) Index, ²Other public listed companies in Malaysia not included in the F4GBM Index

Source: Bursa Malaysia, Capital IQ, PwC analysis

Malaysia, an emerging destination for ESG investments

Positive developments seen across stakeholders including investors, corporations, and government agencies



Growing investor appetite

Investors are increasingly aware and actively integrating ESG into their investment and value creation strategy



Rising corporate initiatives

Corporations are increasingly embedding ESG into their business processes and operations to enhance productivity, achieve cost savings and strengthen brand equity



Supportive regulatory environment

Supportive policies (e.g. GITA¹, GTFS²) and initiatives (e.g. SRI Taxonomy³) contribute to fostering ESG-themed investments

“We look to influence positive change and ensure a responsible and equitable impact through managing ESG risk and identifying value creation opportunities”

Managing Director, sovereign wealth fund of Malaysia

“Our group strides towards embracing the global energy transition and the shift towards a low carbon future...”

Chief Sustainability Officer, Malaysian multinational oil and gas company



Malaysia’s conducive ecosystem has created a landscape with high potential investment opportunities across several major themes:



Energy transition



Food security



Circular economy



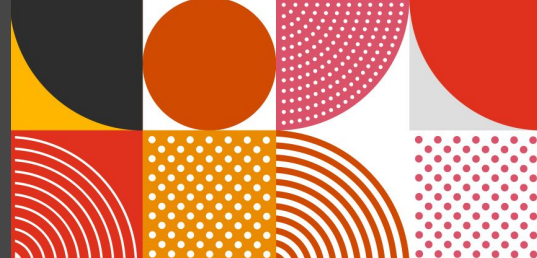
Mobility transformation



Environmental engineering

In the subsequent pages, each theme will be discussed further, with emphasis on key trends, developments and notable deal activities observed in recent years.

Note: ¹Green Investment Tax Allowance, ²Green Technology Financing Scheme, ³Sustainable and Responsible Investment Taxonomy
Source: PwC-MICPA Investor Survey 2022 Report, PwC analysis



75%

of electricity currently generated from coal and gas



1 Energy transition Decarbonising energy generation

Energy generation in Malaysia has been predominantly reliant on coal, with **the country's current renewable energy (RE) capacity standing at 25%**. To meet energy demand sustainably, Malaysia is targeting 40% RE contribution by 2035. Notably, public and private sector investors have been shifting away from coal-fired power generation investments to RE investments, focused around:



Clean and sustainable energy with solar photovoltaic (PV) and bioenergy¹ having the most potential due to high annual solar irradiation and biomass availability from the palm oil industry



Energy efficiency and management to provide IoT-based energy monitoring, recycling and efficiency solutions

Japan has become a leading clean energy investor in Southeast Asia, with Malaysia as one of its priority markets. Key initiatives include **Asia Energy Transition Initiative (AETI)** in 2021 by the Government of Japan, with USD 10bil allocated for ASEAN² decarbonisation projects, and the announced collaboration between Japan³ and Petronas to achieve carbon neutrality by 2050.

Notable M&A deals of players with operations in Malaysia:

**Based on publicly available information*

Date	Target	Key Business Area(s)	Installed Capacity	Lead Investor	Deal Size (USD mil)*	Equity*
Jan 2023	Cypark	Solar & Biogas	388 MWp ⁴	Jakel Capital	15	27%
Dec 2022	ERS Energy	Solar	700 MWp	Gamuda	45	30%
Jun 2022	reNIKOLA	Solar	418 MWp ⁴	B.Grimm Power	83	45%
May 2022	Solarvest	Solar	400 MWp	Divine Inventions	23	19%
Mar 2022	Samaiden	Solar	>300 MWp	Chudenko Japan	Undisclosed	15%

Other recent deal activities based on our market scan and research:

Biogas and solar RE Provider

National grid-connected RE

Cenergi's investment in 22 biogas, solar and other plants⁵ as of 2021

Ammonia co-combustion

Carbon capture technology

MOU between Tenaga Nasional Berhad, Petronas and IHI from Japan in 2022

Top Glove-Shizen

Rooftop solar

Top Glove and Japan's Shizen Energy collaboration in 2021

Note: ¹Includes biomass, biogas and municipal solid waste, ²Association of Southeast Asian Nations, ³Ministry of Economy, Trade and Industry of Japan (METI) and Japan Bank for International Cooperation (JBIC), ⁴Including plants in the development stage, ⁵Energy efficiency and pellet plants
Source: Capital IQ, Mergermarket, Sustainable Energy Development Authority (SEDA), Malaysian Investment Development Authority (MIDA), company websites and annual reports, news articles, PwC analysis

2 Circular economy Waste management and recovery

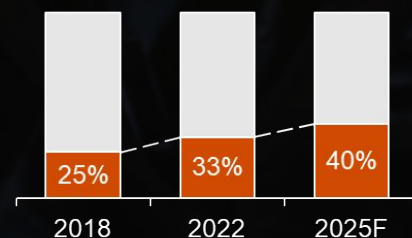
Waste generated in Southeast Asia is expected to increase from c.150mil MT in 2016 to over 300mil MT by 2030, due to rapid population growth, urbanisation and industrialisation. Additionally, recycling rates across the region are less than 50%, which is comparatively lower than most developed economies¹ with recycling rates of over 50%.

In Malaysia, the Ministry of Housing and Local Government has put in place policies and roadmaps (e.g. proposed implementation of the Extended Producer Responsibility, EPR principle) to promote waste reduction initiatives and achieve a **targeted 40% recycling rate by 2025**. Whilst Malaysia's current recycling rate of 33% lags behind several of its regional peers², growing interest and investment activities are observed in scheduled waste, e-waste, municipal waste and sustainable packaging. These trends are driven by:

- **Malaysia's transition to become a circular economy in the 12th Malaysia Plan**, to reduce waste generation while increasing the use of recycled materials and recycling of production waste
- **Enhanced penalties for contravention of the Environmental Quality Act 1974**, ensuring compliance with proper waste management by waste generators
- **Attractive tax incentives** in which companies undertaking waste recycling activities are eligible for Pioneer Status (PS) or Investment Tax Allowance (ITA)



Malaysia's recycling rate is expected to rise



Notable M&A deals of players with operations in Malaysia:

Date	Target	Business Area	Lead Investor	Deal Size (USD mil)*	Equity*
May 2022	Cenviro	Scheduled Waste	SK ecoplant	68 ³	30%
Feb 2022	TES	E-waste	SK ecoplant	1,042	100%
Jun 2020	KUB-Berjaya Enviro	Municipal Waste	Berjaya Group	19	40%
Dec 2019	Alam Flora	Municipal Waste	Malakoff Corporation	210	97%
Aug 2019	Globecycle	Scheduled Waste	Blue Planet	Undisclosed	100%

*Based on publicly available information

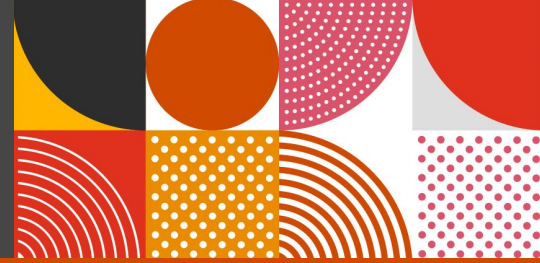
Other recent deal activities based on our market scan and research:

5E Resources
Scheduled waste
USD 6mil raised from SGX IPO
in Apr 2022

Econas Resource to Energy (ER2E)
Scheduled waste
Partnership between Econas &
Perisind Samudra in 2019

Note: ¹e.g. Germany, Switzerland, South Korea, Singapore, ²As of 2022, Singapore (57%), South Korea (60%) and Taiwan (>60%), ³Based on Mergermarket information

Source: Department of Statistics Malaysia (DOSM), Department of Environment Malaysia (DOE), Capital IQ, Mergermarket, company websites and annual reports, news articles, PwC analysis



3 Environmental engineering

Flood mitigation and water supply

Water supply disruptions, pollution and flooding are amongst major environmental concerns in Southeast Asia, driven by global climate change. Malaysia, in particular, faces persistent challenges in water resources from major floods which occurred in late 2021 and early 2022. This has resulted in USD 1.4bil of losses and water disruptions caused by industrial pollution as a result of treatment plant downtime.

Given the rising intensity and frequency of floods in Malaysia, the government is expected to tender six flood mitigation projects, as tabled in the revised Budget 2023. Investors are also increasingly investing in sustainable and technology-enabled solutions (e.g. wastewater treatment and monitoring technology) in recent years.

Notable environmental engineering contracts awarded in Malaysia: *Based on publicly available information

Date	Company Awarded	Project Area	Location	Contract Value (USD mil)*
Sep 2022	Salcon Engineering	Water Treatment	Langat 2, Selangor	48
Jul 2022	Gamuda	Water Treatment	Sungai Rasau, Selangor	454
Jun 2022	MRCB	Flood Mitigation	Pahang	86
Jan 2022	Ranhill Utilities	Non-Revenue Water	Pahang and Johor	37
Dec 2021	Taliworks	Water Treatment	Sungai Rasau, Selangor	145
Jul 2020	Puncak Niaga	Sewage Treatment	Kuantan, Pahang	103

Other recent deal activities based on our market scan and research:

<p>Cosmos Technology</p> <p><i>Water treatment</i></p> <p>USD 5.1mil raised from ACE Market IPO in Oct 2022</p>	<p>RedPlanet</p> <p><i>Environmental monitoring</i></p> <p>USD 0.9mil raised from LEAP Market IPO in Aug 2020</p>	<p>Polydamic Group</p> <p><i>Environmental monitoring</i></p> <p>USD 0.6mil raised from LEAP Market IPO in Mar 2020</p>
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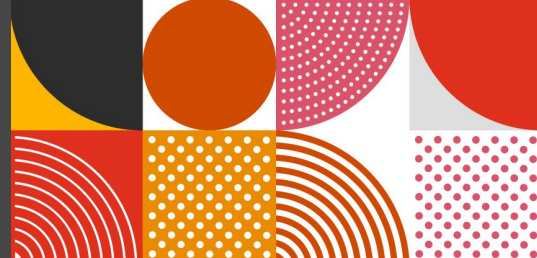
From our market research, some ASEAN players have successfully implemented innovative solutions to address environmental and climate-related issues including:

- 


Hydroleap (SG) offers innovative and cost-effective wastewater treatment solutions to industrial sectors
- 


Teredo's (SG) monitoring technology assists in detecting water pipeline leaks and machinery faults
- 


Komunidad (PH) has provided the Philippine and Indian governments with decision support tools for climate resilience



4 Food security

Ensuring agricultural self-sufficiency

Southeast Asia is a key exporter of selected agricultural products (e.g. palm oil) to the world with Malaysia, Indonesia, and Thailand as the major producers. In spite of rising agriculture export volumes, the region is still highly reliant on international food supply due to its rapidly growing population.

In Malaysia, while **food exports grew at a YoY CAGR of 15% to USD 10.1bil in 2022, food imports were also high at USD 17.2bil**, due to historically, underinvestments in the agrofood sector and lack of technological innovation.

To cope with increasing export volumes and to reduce food import dependency, there are significant opportunities for modernisation of the agricultural sector, paving the way for foreign and local investors to explore agricultural technologies such as:

- **Monitoring technologies** including drones and AI software to ease labour workload and improve yields
- **Smart farming** such as vertical farms, robotics and distribution platforms to improve efficiency
- **Biofertilisers and animal feeds** that serve to enrich soils and improve yields whilst addressing pollution

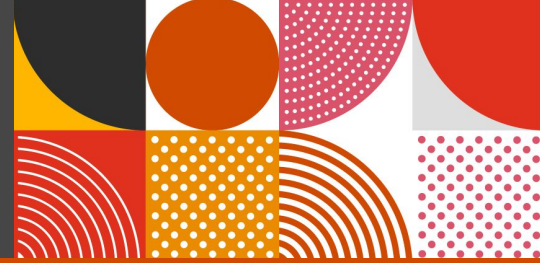
Recent funding activities of players with operations in Malaysia:

**Based on publicly available information*

Date	Target	Business Area	Lead Investor(s)	Deal Size (USD mil)*
Sep 2022	Aerodyne	Monitoring Technology (Drones)	Petronas and KWAP	30
Sep 2022	Nutrition Technologies	Biofertilisers & Animal Feed	PTT Ventures and Sumitomo	20
Sep 2022	Glife	Smart Farming (Farm-to-table platform)	Tin Men Capital and Heliconia Capital	13
Oct 2021	Aonic (formerly Poladrone)	Monitoring Technology (Drones)	Consortium led by Wavemaker Partners	4
Oct 2021	Fefifo	Smart Farming (Co-farming platform)	RHL Ventures and KB Investment	3
Jun 2020	Braintree Technologies	Smart Farming (Robotics & automation)	Petronas Ventures	Undisclosed

Other emerging startups based on our market scan and research:

Plant Cartridge <i>Digital farm management</i> USD 3mil seed funding raised in Mar 2022	Secai Marche <i>Farm-to-table platform</i> USD 4.5mil early stage funding from Japanese VCs	Singularity Aerotech Asia <i>Digital farming solutions</i> Collaboration with Xperanti in 2020 for IoT agritech solutions
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5 Mobility transformation Driving the future of mobility

Globally, automotive industry players are increasingly investing in **disruptive technologies across CASE¹ themes** as part of their roadmap to reduce carbon emissions. Malaysia is currently undergoing a mobility transformation journey. This is underpinned by the growth of the electric vehicle (EV) sector to 38% of total industry volumes by 2040 where South Korea is one of the leading investors in Malaysia's ecosystem for EV battery and component manufacturing, hydrogen, fuel cells and EV charging.

Megatrends and innovations in the future of mobility:

CONNECTED

Bidirectional communication between the car and AI-enabled systems to enable real-time diagnostics, payments, roadside assistance, etc.

e.g. Waze's partnership with ExxonMobil and Shell for contactless fuel payments

AUTONOMOUS

Manufacturers have increasingly adopted L3² autonomous driving technologies, with ongoing trials at L4².

e.g. Volkswagen partners with Innoviz for LiDAR³ sensors and perception software

SHARED MOBILITY

Shared mobility innovations such as ride-hailing, car-sharing, microtransit, and carpooling can further democratise transport options.

e.g. Moovit's mobility-as-a-service solutions for multimodal transportation

ELECTRIC

Innovation in battery technology and charging infrastructure will continue to be a key driver for EV adoption.

e.g. ChargePoint's cloud-based EV charging station network



Selected developments in the future of mobility within the ASEAN region:



VinFast (VN) has become a global player in EV production, focusing on manufacturing of electric cars and electric scooters



Gentari (MY) and **Evolt (TH)** collaborated to expand EV charging infrastructure and will explore other potential collaborations in providing green mobility solutions across Southeast Asia



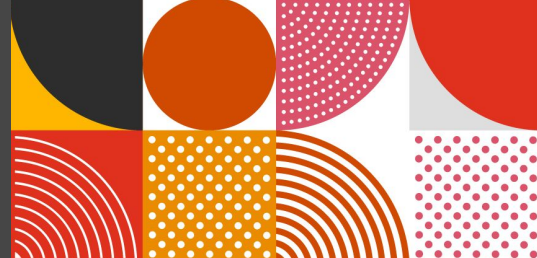
SK Nexilis' (KR) copper foil manufacturing plant for EV batteries in Kota Kinabalu is scheduled for completion by end of 2023, with plans to explore further possibilities for additional investment in the EV sector in Malaysia

Malaysia has witnessed encouraging growth as Southeast Asia's automotive hub, with **foreign and domestic automotive companies increasingly investing into Malaysia's EV value chain**. Key investment areas include **battery production, automotive sensors and semiconductors, EV assembly and charging infrastructure**, with the EV ecosystem evolving to meet future demand for sustainable mobility.

Note: ¹CASE is an acronym used in the industry to refer to vehicles of the future: Connected, Autonomous, Shared, and Electric, ²Per the Society of Automotive Engineers (SAE) standards which refer to the level of automation a vehicle has from No Automation (L0) to Full Driving Automation (L5), ³Light Detection and Ranging
Source: MIDA, news articles, PwC analysis



Future of ESG Investing



ESG integration has been observed to drive value creation in businesses by:

Catalysing revenue growth

Generate higher revenue with sustainable products and services, for better customer satisfaction, retention and premium pricing from sustainable product portfolio

Improving operational efficiency

Streamline operations by introducing eco-efficient practices to reduce waste, optimise production process, to increase productivity and reduce costs

Enhancing risk mitigation

Minimise ESG-related risks by implementing sustainable business practices, including health, safety, environmental and social considerations in operations

“We intend to elevate ESG practices within our portfolio companies... new investments will need to go through a fairly rigorous ESG screening process to understand the risks and opportunities that it brings”

Chief Investment Officer, fund management company

As a result, investors are increasingly including ESG considerations as part of the required commercial and business model assessment

49%

of global private equity investors integrate highly material ESG issues into commercial due diligence when making investment decisions

Source: PwC Global Private Equity Responsible Investment Survey 2021

Selected ESG considerations in Commercial and Operational Due Diligence

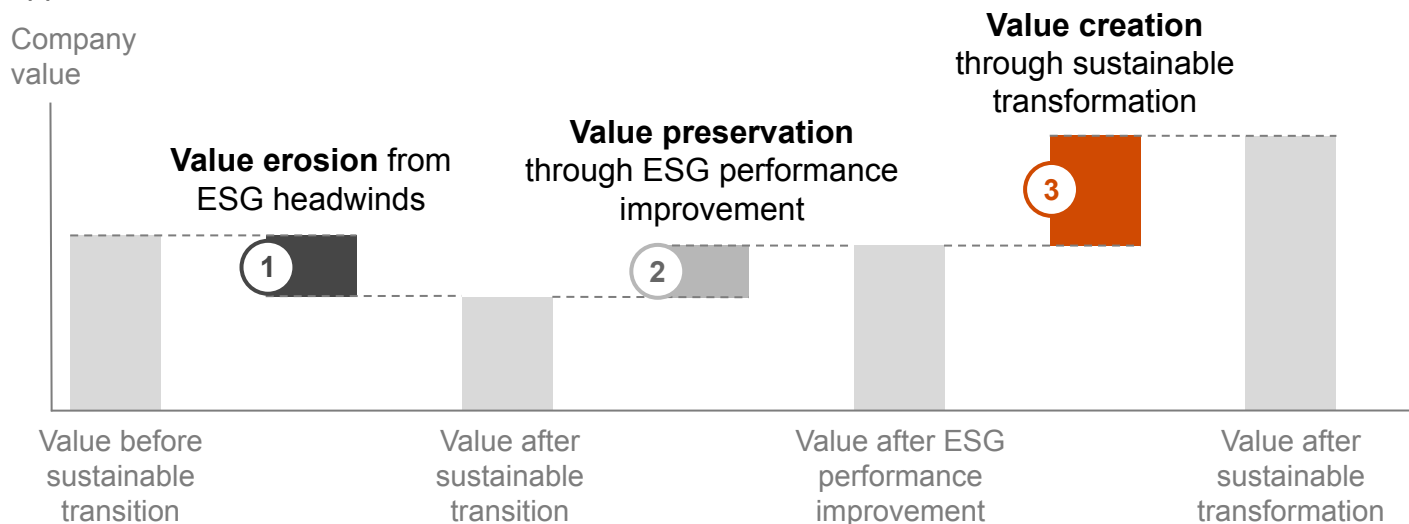
- 1 Structural shifts in market demand for ESG-centric products and services
- 2 Target capabilities in capturing sustainability-related market growth upside
- 3 Potential for premium pricing of sustainable products and services
- 4 Market and customer perception on target's business offerings from an ESG perspective
- 5 Commercial and operational risks relating to ESG and potential impact to valuation
- 6 Alignment of a company's business strategy with broader ESG considerations



Source: PwC analysis

Future of ESG Investing

ESG headwinds can result in value erosion. Value preservation initiatives therefore need to be identified to minimise negative impact. Through sustainable transition, businesses have opportunities for value creation.



Value erosion is attributed to inaction on ESG, leading to customer switching and increased regulatory costs.

Value preservation can be achieved by identifying ESG factors, reviewing operations, establishing targets and KPIs, and communicating relative ESG performance to stakeholders.

Value creation is achievable through sustainable transformation. ESG-led investment strategies include aligning company's value proposition with ESG, re-evaluating business model and revenue streams, as well as identifying transformation strategies that incorporate ESG risks and opportunities, leading to improved brand value.

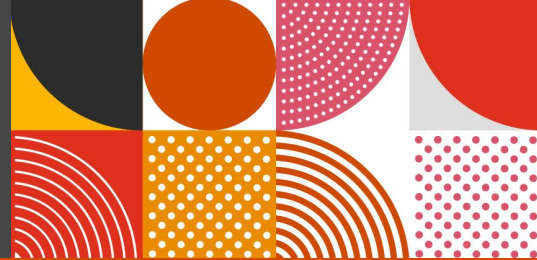
Transforming into an ESG-centric business model can be an important lever for sustainable growth and value creation.

Business as usual

- **Loss of market share** due to customers switching to sustainable products
- **Potential disruption to supply chain and operations** arising from climate risk, sourcing and labour issues
- **Fundraising challenges** due to misalignment of existing business priorities with investor expectations on ESG practices
- **Exposure to regulatory fines and reputational damage** arising from failure to address ESG-related risks

ESG-centric business model

- **Revenue growth** via realignment of product portfolio to address market demand for sustainable product options
- **Supply chain resilience** from reduced exposure to climate change and sourcing risks
- **Easier access to investor funding**, supported by stronger brand equity and ESG-centric business model
- **Mitigation of compliance risks** through adherence to ESG regulations



Key takeaways

- 1 Growing appetite amongst investors for ESG-centric businesses**


Local and regional investors are increasingly prioritising investments into Malaysia's green economy in recent years. Companies which have demonstrated strong ESG practices have been able to deliver higher valuations and investment returns.
- 2 Malaysia seen as emerging destination for ESG investments**

Malaysia has a conducive ecosystem enabled by growing investor appetite, increasing corporate initiatives and a supportive regulatory environment. Key investment themes include energy transition, circular economy, environmental engineering, food security, and mobility transformation.
- 3 ESG integration as a key value creation lever in investors' portfolio companies**

Investors are increasingly incorporating ESG considerations into their commercial and operational assessment of their investee company's business. A sustainable transition to an ESG-centric business model is an enabler for value creation among investors, as new opportunities are captured to address ESG market challenges and risks.

ESG considerations, drive critical business decisions of portfolio companies

According to PwC's Global Private Equity Responsible Investment Survey 2021, >7 in 10 global PE investors integrate ESG risks and opportunities into their transformation or value creation plan.



"ESG is no longer a 'good to have' but is fast growing into a requirement for all investors and businesses. As part of our commitment to sustainability, we incorporate ESG into the management of our investments in all of our stewardship activities..."

Chief Executive Officer, public service pension fund

"...It is crucial that we incorporate ESG factors in the evaluation of investee companies' performance and business practices. By considering risks and opportunities beyond financial performance, we will be well positioned to make better holistic investment decisions, thus safeguarding our members' long-term returns and contribute to a wider sustainability ecosystem"

Chairman, pension fund

Our analysis

The valuation comparison in this analysis looks at key financial indicators, namely price-to-book ratios, return on equity, and net profit margins for companies listed in the **FTSE4Good Bursa Malaysia Index (F4GBM)** against those not listed in the index.

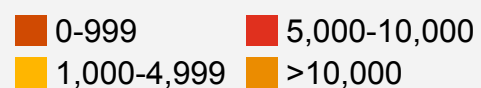
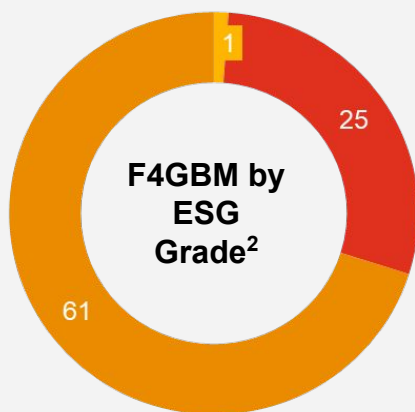
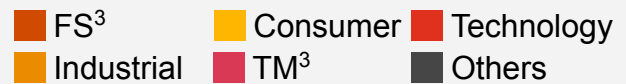
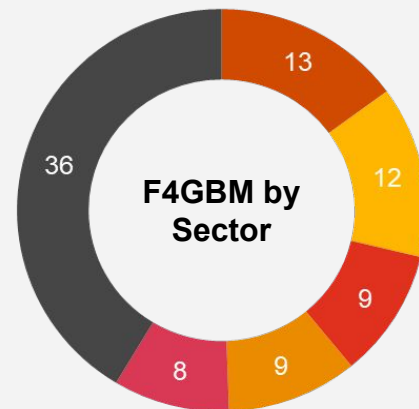
Definition

The **FTSE4Good Bursa Malaysia Index** constituents are selected from the FTSE Bursa Malaysia EMAS Index¹, screened in accordance with transparent and defined **Environmental, Social and Governance (ESG) criteria**.

Methodology

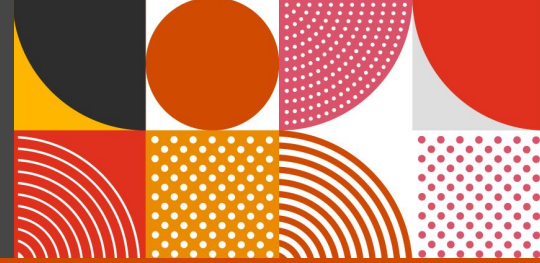
Constituent PLCs are selected based on overall ESG ratings from 0-6 which assess their level of exposure and actions taken to address >300 indicators in each of the pillars: Environmental, Social, and Governance. PLCs with an ESG rating of more than 2.9 are included in the index.

The F4GBM also implements standard exclusions and other requirements (e.g. exclusions for tobacco manufacturers).

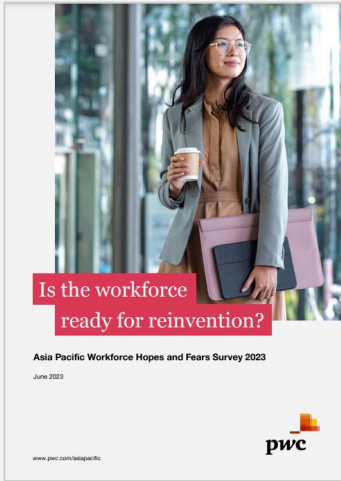


Notes: ¹FTSE Bursa Malaysia EMAS Index includes constituents from the FTSE Bursa Malaysia Top 100 Index and FTSE Bursa Malaysia Small Cap Index, ²ESG Grade bands are based on their ESG rating amongst all constituents in the FBM EMAS Index (e.g. PLCs in the top 25% of ESG ratings are awarded a 4-star grading band), ³FS: Financial Services. TM: Telecommunications and Media
Source: Bursa Malaysia, Capital IQ, PwC analysis

Publications with sustainability themes



Is the workforce ready for reinvention?: Asia Pacific Workforce Hopes and Fears Survey 2023



Corporate Malaysia's journey towards a sustainable supply chain



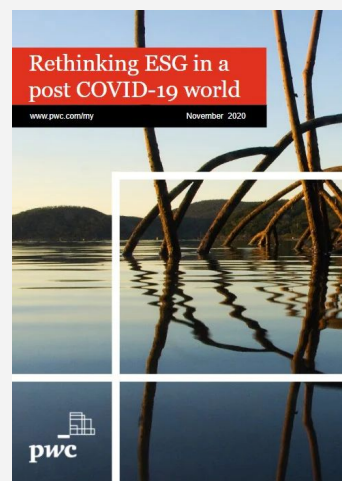
Embracing the ESG revolution: Zeroing in on investor expectations



Positioning Corporate Malaysia for a sustainable future



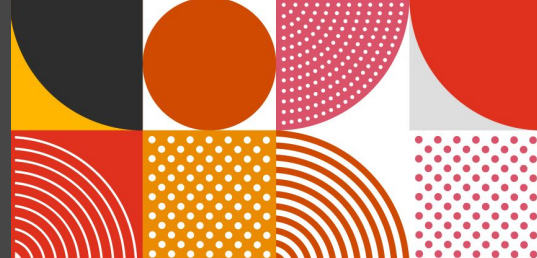
Rethinking ESG in a post COVID-19 world



Creating a strategy for a better world



Find out more about how we can help you



ESG Deals Market Entry Strategy, Commercial Due Diligence and Deals Value Creation

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