

Joint Statement on the Circular Economy and Carbon Neutrality

January 2024

Executive Sustainability Forum

Ajinomoto Co., Inc.

Fujitsu Limited

Honda Motor Co., Ltd.

JERA Co., Inc.

Mitsubishi Heavy Industries, Ltd.

Teijin Limited

The Dai-ichi Life Insurance Company, Limited

Mitsubishi UFJ Financial Group

Nomura Holdings, Inc.

Sumitomo Mitsui Trust Holdings, Inc.

Development Bank of Japan Inc.

Japan Bank for International Cooperation

PwC Japan Group

Mission Statement

Reframing Growth in ASEAN

Creating Value through a Circular Economy and Carbon Neutrality

ASEAN member states are among the world's fastest growing economies, yet their economic resilience is increasingly threatened by population growth, resource depletion, unsustainable patterns of raw material consumption and climate change. A new model of regional economic growth is needed—one that is not reliant on mass resource consumption and waste disposal.

Up until now, ASEAN countries have borne much of the environmental burden of the developed world's growing affluence by being major producers of its consumer goods and managing its waste disposal. We believe a circular economy aimed not only at reducing waste throughout manufacturing processes and product life cycles, but also creating new value and markets, can support the region's economic development, address global environmental challenges and achieve a carbon neutral ecosystem.

Initiatives rooted in developing an understanding of the region's situation are essential to help build a circular economy and carbon neutral ecosystem in ASEAN. With our base in Asia and extensive business track record in the ASEAN region, we believe Japanese companies and local businesses can make a significant impact. That's why we've launched the Executive Sustainability Forum. The forum will contribute to the development of a circular economy and carbon neutral ecosystem in ASEAN by creating opportunities for constructive discussions with regional and global leaders and share key learnings necessary to further expand the scope of discussions. Key topics for discussion include:

- **Focus on priority areas to develop a circular economy and carbon neutral ecosystem in ASEAN**
- **The role of financial institutions in realising a circular economy and carbon neutral ecosystem**
- **Circular economy frameworks and indicators to measure progress and achievements**

Guided by stakeholder feedback on these discussions and shared learnings, we will aim to help realise a circular economy and carbon neutral ecosystem. Together with the people of ASEAN, we are committed to creating a better future for the region by balancing economic growth with solutions to environmental and social issues.



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Why we're committed to building a Circular Economy and Carbon Neutral Ecosystem in ASEAN

The ASEAN region has a growing population, and 40% still live in poverty. Given the need for continued economic growth, demand for resources is projected to continue to increase through 2050. With few available sources of renewable energy, decarbonisation seems a distant goal. Furthermore, ASEAN countries import large amounts of waste from the developed world, the environmental impact of which is becoming increasingly apparent.



Population ... 04

- The region's population is expected to grow at CAGR of 0.5% until 2050.
- The percentage of the region's population living below the poverty line is approximately 40%, highlighting need for continued economic growth.

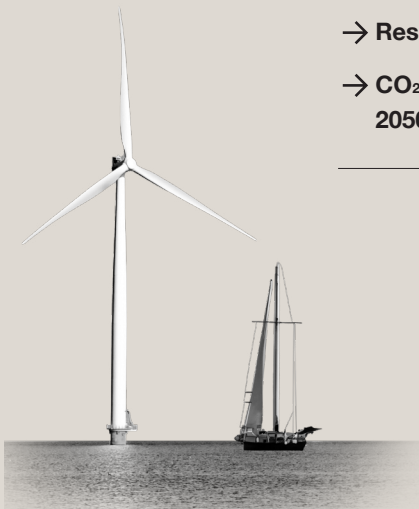
Resource usage ... 05

- Resource use is expected to increase at CAGR of 2% until 2060.
- CO₂ emissions are projected to increase at CAGR of 2.3% until 2050.



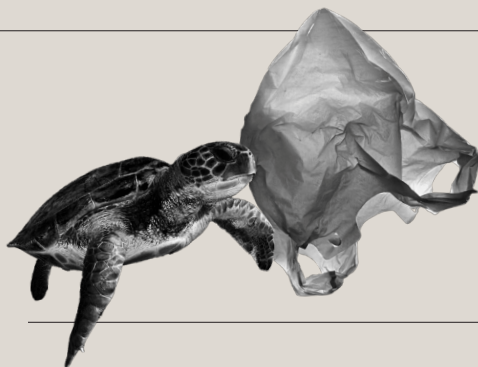
Natural power generation ... 06

- Compared to other parts of the world, ASEAN countries have fewer solar and wind renewable resources.
- Thailand has more wind and solar power resources than other ASEAN countries, but still very little compared to other parts of the world.



Waste ... 07

- ASEAN countries import final waste, while developed countries export waste.
- There are generally few formal players in the waste collection sector, except in Thailand. Even there, waste collection is handled mainly by informal operators.



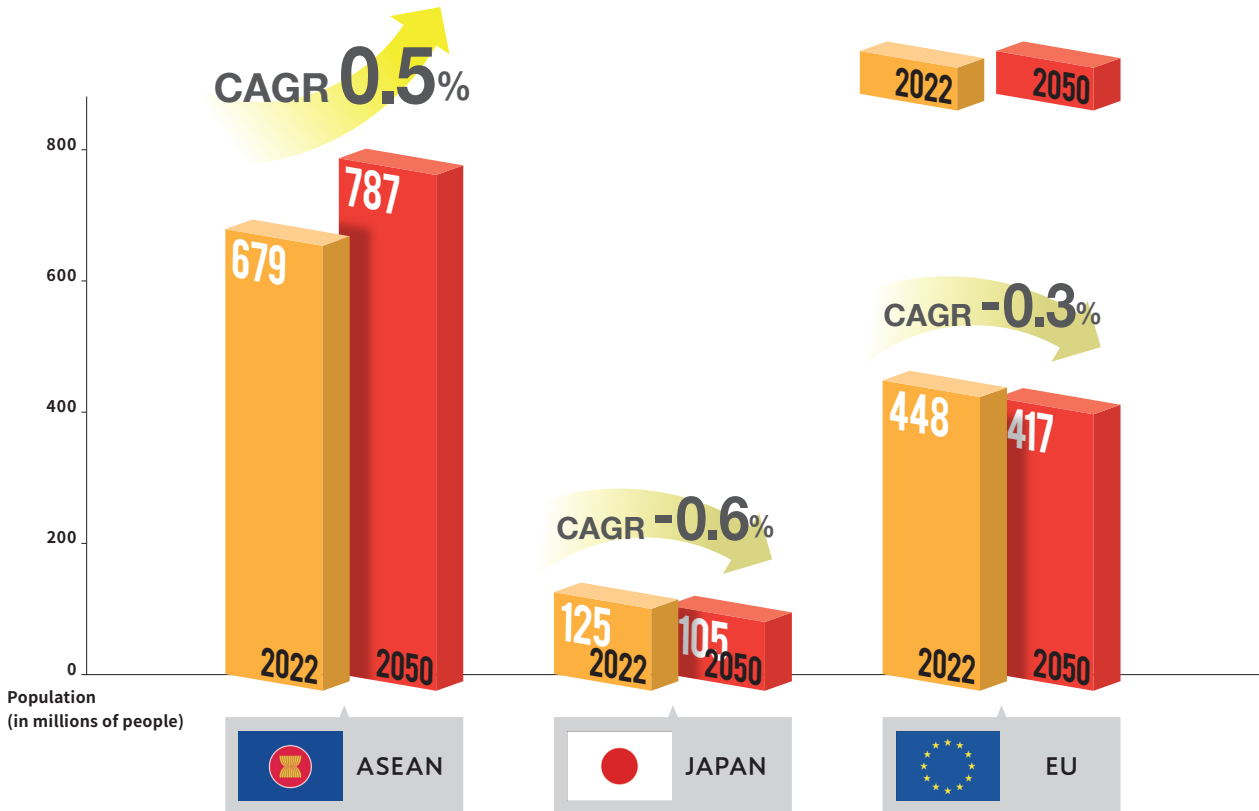
Marine plastic ... 08

- ASEAN countries emit 55% of the world's marine plastic.
- Globally, the Philippines is the largest emitter of marine plastic, accounting for 36%.



Population

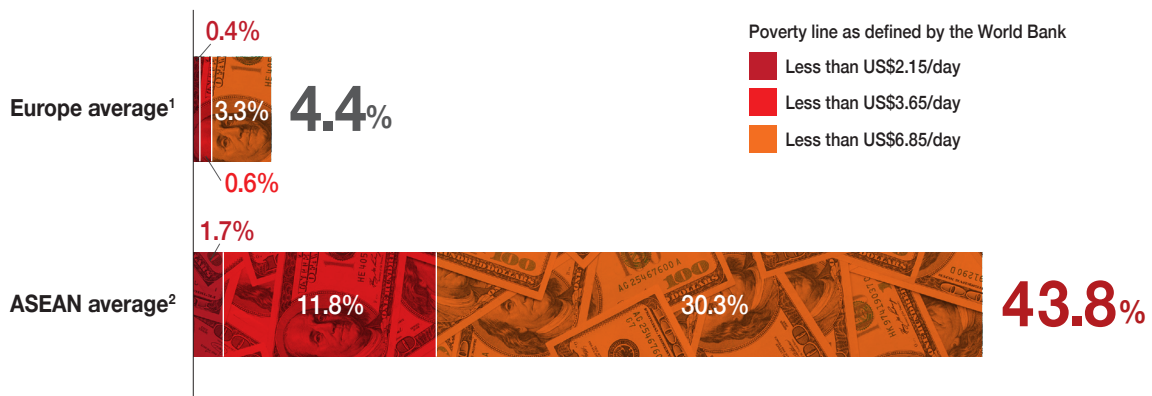
→ The region's population is expected to grow at CAGR of 0.5% until 2050.



Data compiled by PwC based on The World Bank, "Population estimates and projections" (<https://databank.worldbank.org/source/population-estimates-and-projections>). Accessed October 2023.

→ The percentage of the region's population living below the poverty line is approximately 40%, highlighting need for continued economic growth.

Percentage of the population living below the poverty line (cost of living per day) as defined by the World Bank



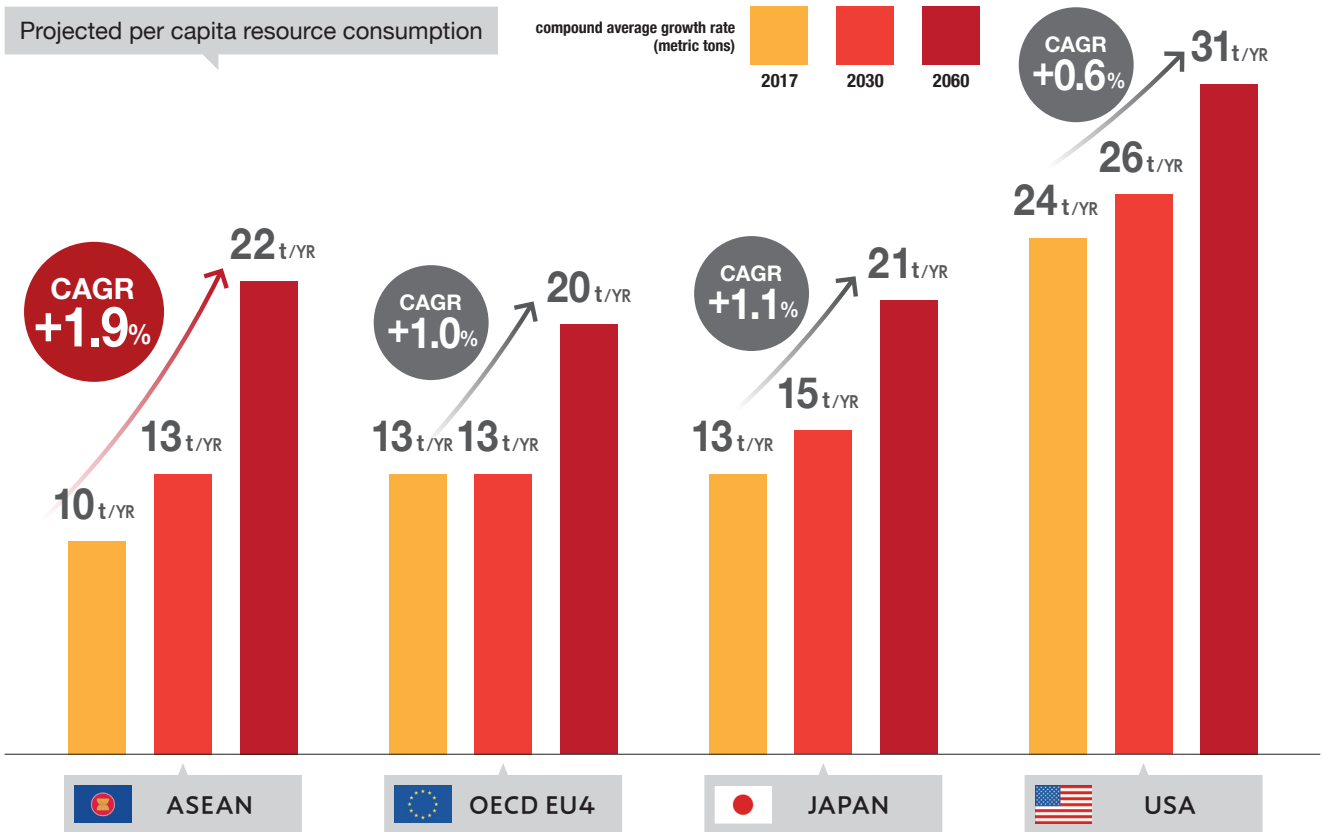
¹Average of 42 out of 46 Council of Europe member states as of October 2023, excluding Liechtenstein, San Marino, Andorra, and Monaco, for which no data is available (weighted average value taking population into account).

²Average based on the latest data from 6 of the 10 ASEAN member countries as of October 2023, excluding Cambodia, Singapore, the Philippines and Brunei, for which no data is available (weighted average after taking population into account). Data compiled by PwC based on The World Bank, "Poverty and Inequality Platform" graph (<https://pip.worldbank.org/home>). Accessed November 2022.

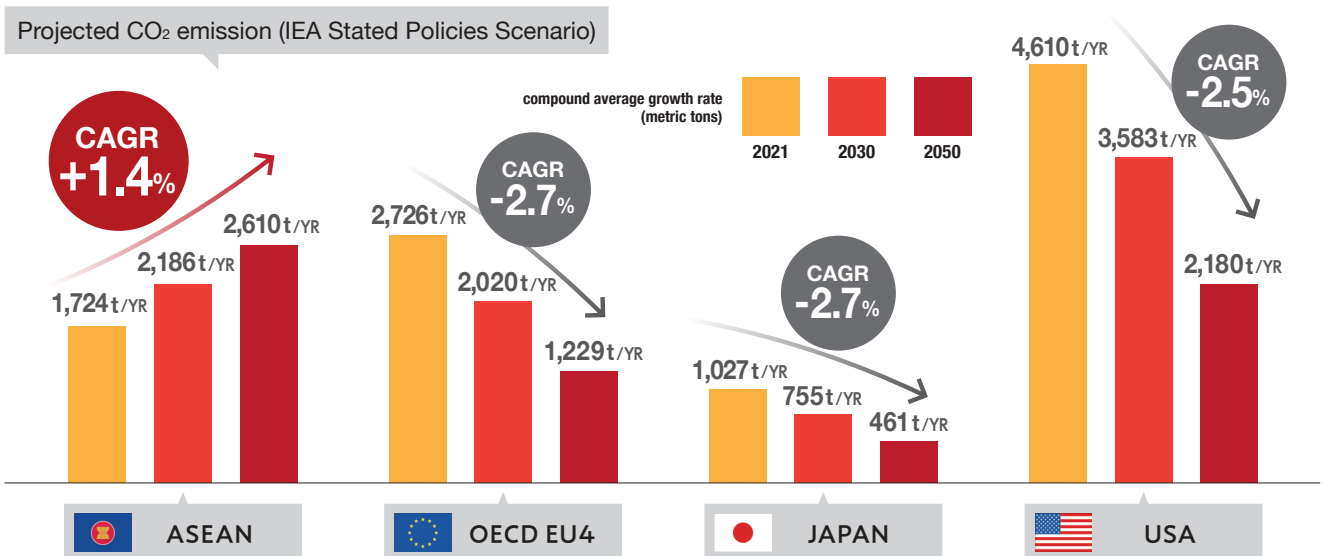


Resource usage

→ Resource use is expected to increase at CAGR of 2% until 2060.



→ CO₂ emissions are projected to increase at CAGR of 2.3% until 2050.



Note 1: The OECD EU4 is made up of France, Germany, Italy and the UK.

Note 2: Per capita resource consumption was calculated by dividing consumption by population figures in each given year. For 2060, the projected population in 2050 was used instead.

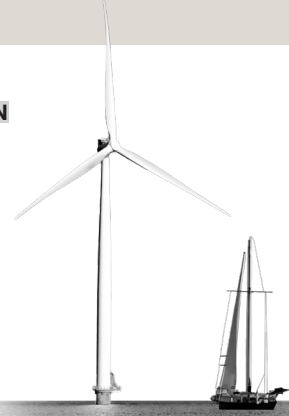
Note 3: The Stated Policies Scenario (STEPS) by IEA shows the trajectory implied by today's policy settings.

Projected per capita resource consumption: Data compiled by PwC based on OECD (2019), Global Material Resources Outlook to 2060: Economic Drivers and Environmental Consequences (<https://doi.org/10.1787/9789264307452-en>). Population data: World Bank, "Population estimates and projections" (<https://databank.worldbank.org/source/population-estimates-and-projections>). Accessed October 2023.

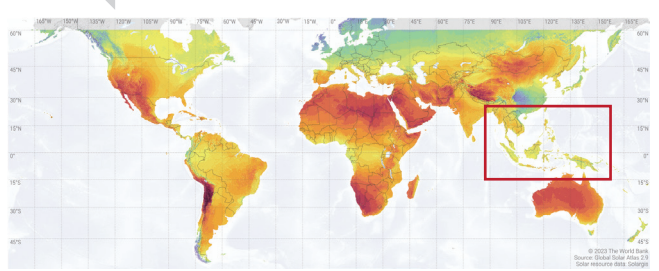
Projected CO₂ emission: IEA (2022) "World Energy Outlook 2022" IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2022>

Natural power generation

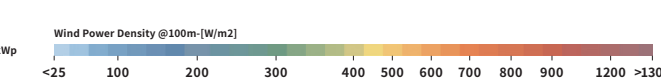
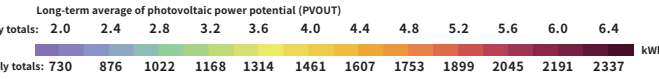
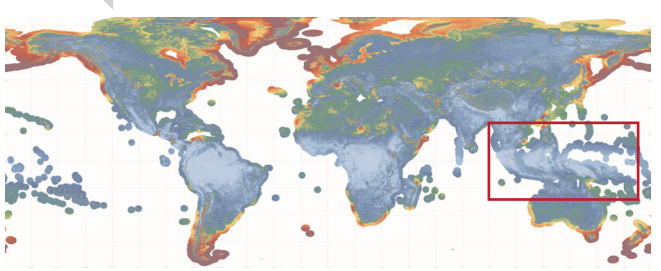
- Compared to other parts of the world, ASEAN countries have fewer solar and wind power generation resources.
- Thailand has more wind and solar power generation resources than other ASEAN countries, but still very little compared to other parts of the world.



Solar resources¹

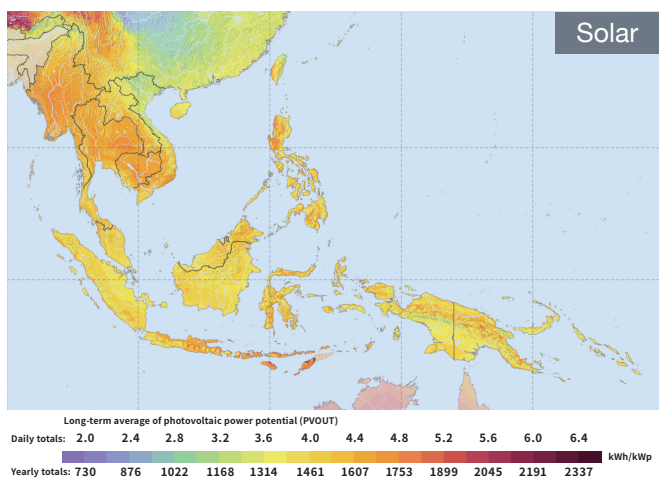


Wind resources²

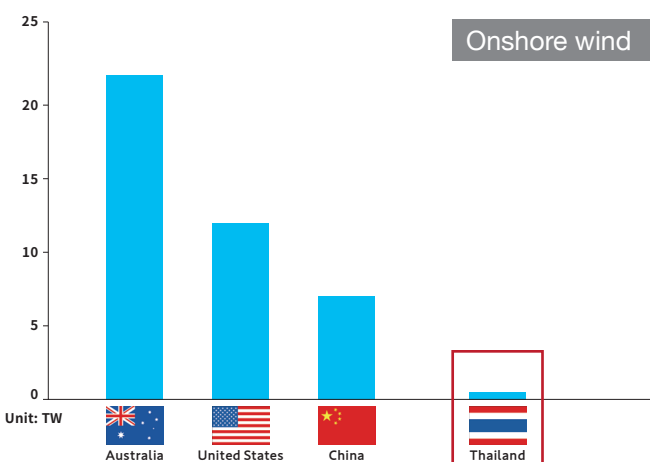
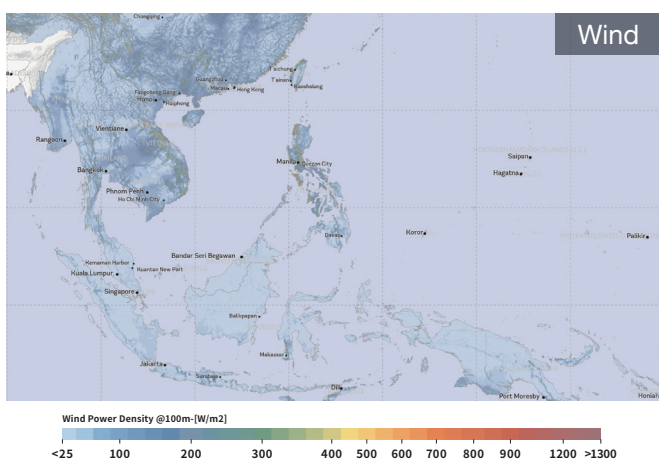
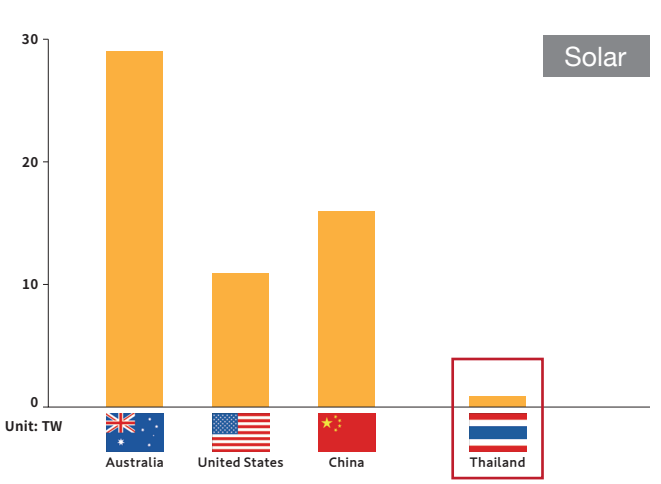


¹ "Photovoltaic power potential" from the following source
 Left: World Bank Group (2023), "Global Solar Atlas: Photovoltaic power potential". Accessed 3 October 2023 (<https://globalsolaratlas.info/download/>). Red frame added by PwC. Global Solar Atlas 2.0, a free, web-based application is developed and operated by the company Solargis s.r.o. on behalf of the World Bank Group, utilising Solargis data, with funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalsolaratlas.info>.
 Right: World Bank Group (2023), "Global Wind Atlas: Power density potential". Accessed 3 October 2023 (<https://globalwindatlas.info/en/>). Red frame added by PwC. Global Wind Atlas 3.0, a free, web-based application developed, owned and operated by the Technical University of Denmark (DTU). The Global Wind Atlas 3.0 is released in partnership with the World Bank Group, utilising data provided by Vortex, using funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalwindatlas.info>.

Renewable energy resource distribution in ASEAN region



Global regional distribution of renewable energy resources



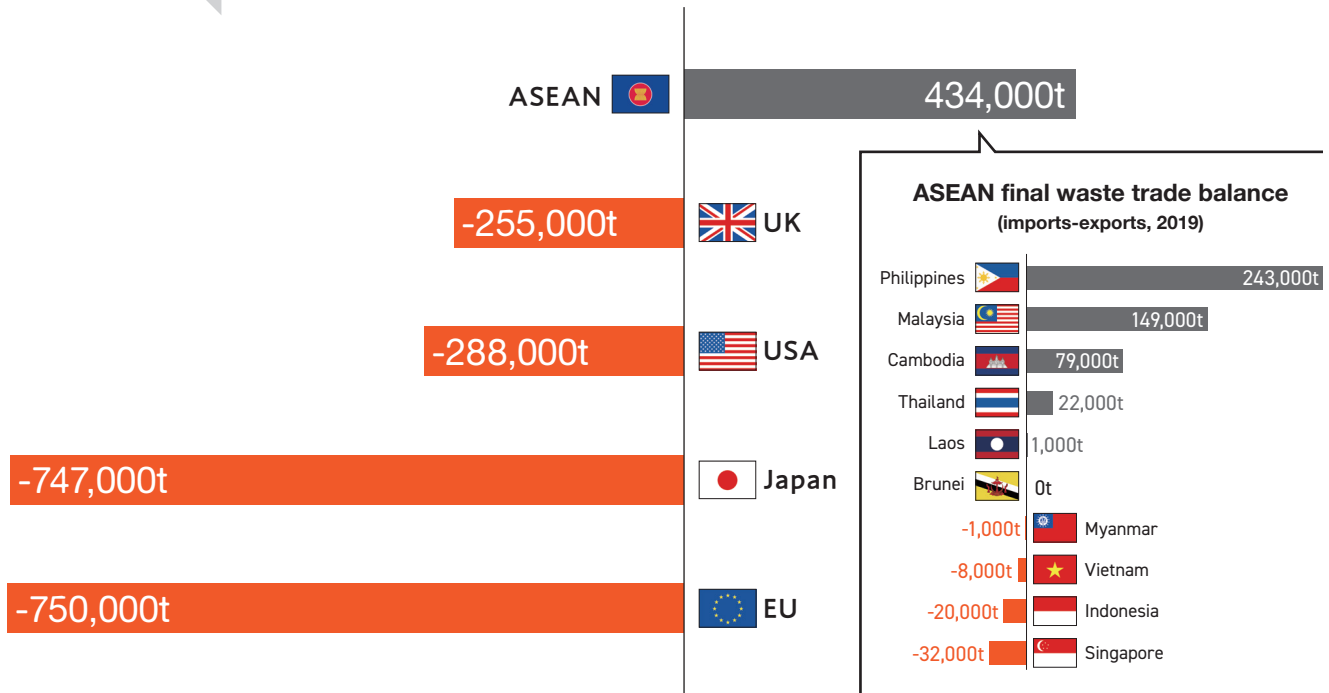
Left (solar): World Bank Group (2023), "Global Solar Atlas". Accessed 3 October 2023 (<https://globalsolaratlas.info/download/>). Global Solar Atlas 2.0, a free, web-based application is developed and operated by the company Solargis s.r.o. on behalf of the World Bank Group, utilising Solargis data, with funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalsolaratlas.info>.
 Left (wind): World Bank Group (2023), "Global Wind Atlas". Accessed 3 October 2023 (<https://globalwindatlas.info/en/>). Global Wind Atlas 3.0, a free, web-based application developed, owned and operated by the Technical University of Denmark (DTU). The Global Wind Atlas 3.0 is released in partnership with the World Bank Group, utilising data provided by Vortex, using funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalwindatlas.info>.
 Right: Data compiled by PwC based on IEEJ (2019), "IEEJ Outlook 2020 - Towards Overcoming the Escalating Energy Trilemma" (<https://eneken.ieej.or.jp/data/8644.pdf>).

Waste

- ASEAN countries import final waste, while developed countries export waste.
- There are generally few formal players in the waste collection sector, except in Thailand. Even there, waste collection is handled mainly by informal operators.



Final waste¹ trade balance (imports-exports, 2019)²



¹Based on "Waste for final treatment and disposal" in UNEP database (see below).

²Please note that global waste balance may not be ±0 as definitions and measurement methods may differ between countries and regions.

Data compiled by PwC based on UNEP, "Global Material Flows Database" (<https://www.resourcepanel.org/global-material-flows-database>). Accessed 15 May 2023.

Number of E-waste recycling permit holders in ASEAN countries

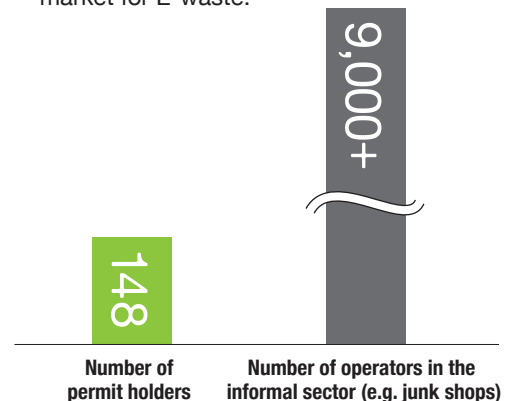


Left: Data compiled by PwC based on Ministry of Economy, Trade and Industry (2019), 「アジアにおける国際資源循環型リサイクル事業拡大に向けた調査報告書」 (Survey Report for Expanding International Resource Recycling Business in Asia). (<https://www.meti.go.jp/medi/lib/report/H30FY/000290.pdf>).

Right: Data compiled by PwC based on ICA (2014), 「アジア地域 マレーシア及び近隣国E-waste管理に関する情報収集・確認調査」 (Information Collection and Confirmation Study on E-waste Management in Malaysia and Neighboring Countries in Asia). (https://openjicareport.jica.go.jp/618/618/618_113_12154571.html).

Collection of consumer E-waste in Thailand

→ Informal operators (e.g. junk shops, scrap yards) play by far the biggest role in the market for E-waste.

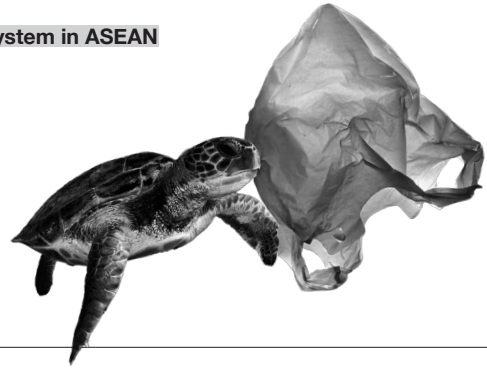


→ Refuse pickers collect waste free of charge.

→ Charitable groups and temples act as collection centres and collect waste for free.

Marine plastic

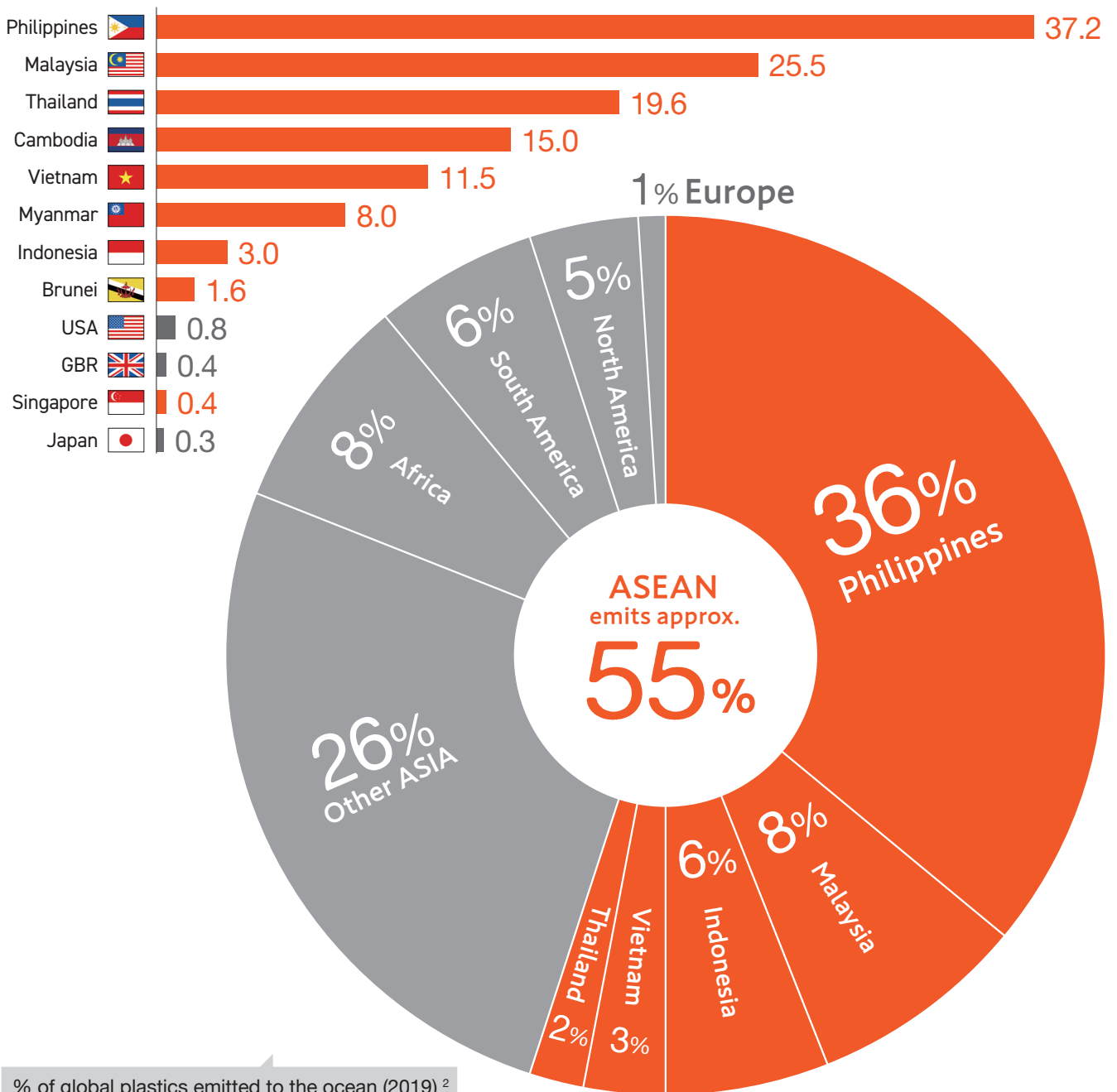
- ASEAN countries emit 55% of the world's marine plastic.
- Globally, the Philippines is the largest emitter of marine plastic, accounting for 36%.



Inappropriately managed plastic waste¹ (2019)

Unit: kg per capita

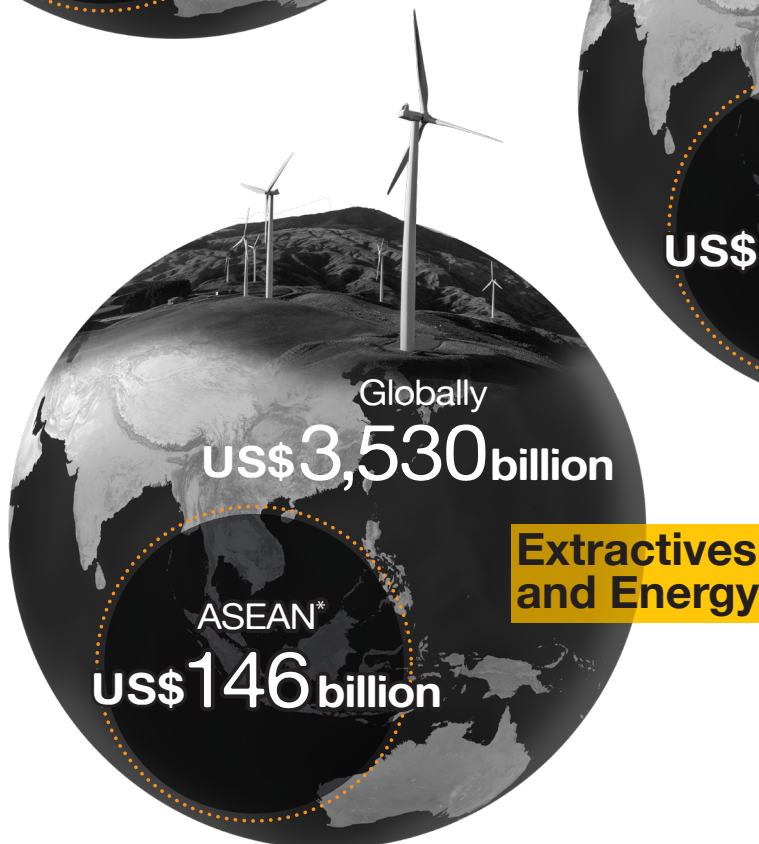
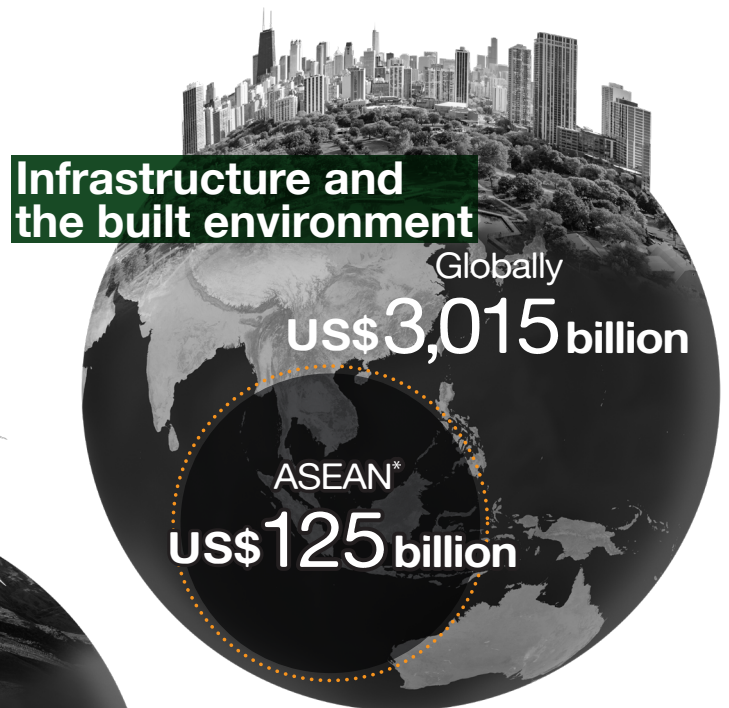
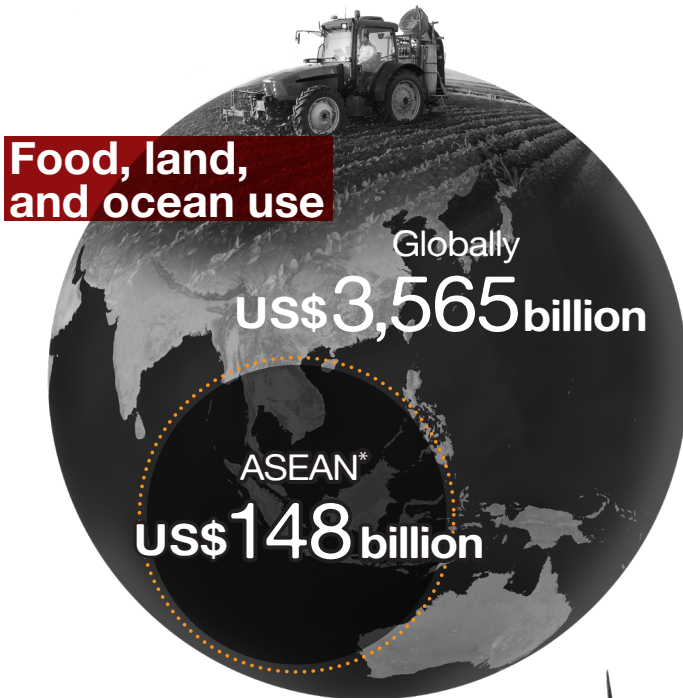
Waste is inappropriately managed in many ASEAN countries, especially the Philippines.



¹Improperly managed plastic waste is plastic that is discarded or otherwise improperly disposed of. It does not include waste exported overseas.
²Estimates of plastic waste emissions based on macroeconomic dynamics, such as population and economic growth, taking into account geographical factors, such as topography, weather conditions and rivers.
 Data compiled by PwC based on Hannah Ritchie and Max Roser, (2018) 'Plastic Pollution'. Published online at OurWorldInData.org. (<https://ourworldindata.org/plastic-pollution>). Accessed 15 May 2023

Business opportunities

The transition to a circular economy will not only contribute to reducing greenhouse gas emissions, but is also expected to spur new economic growth. It is estimated as much as US\$420 billion in new business opportunities could be generated in the ASEAN region.



*Estimates based on prorating by GDP. GDP based on IMF forecasts for 2028.

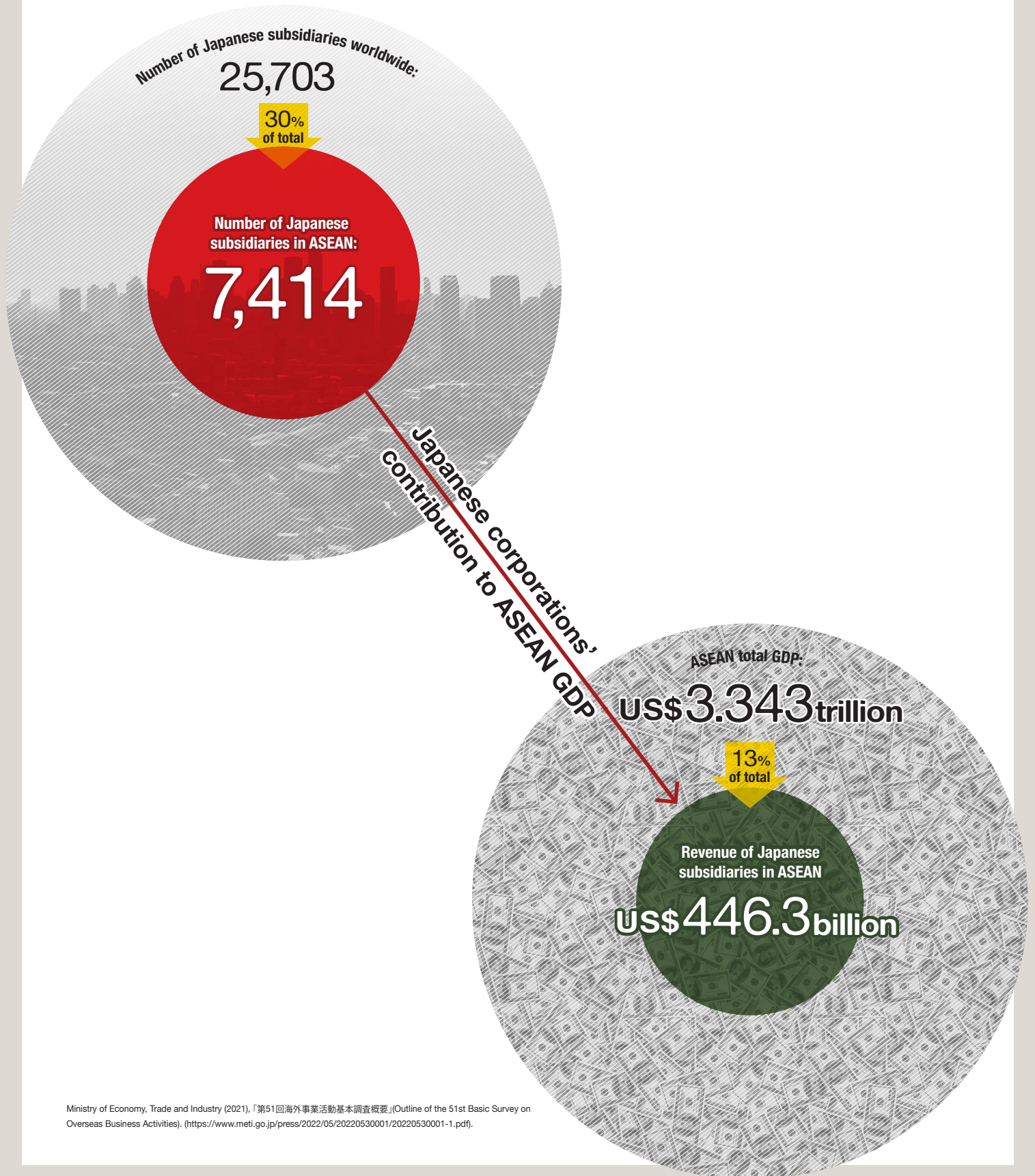
Data compiled by PwC based on World Economic Forum (2020), "The Future of Nature and Business 2020" (<https://p.weforum.org/reports/new-nature-economy-report-ii-the-future-of-nature-and-business/>).

This data was not compiled by the World Economic Forum and should not be considered official World Economic Forum data. The World Economic Forum is not responsible for any content or errors.

PwC calculations based on International Monetary Fund, "GDP, Current Prices" (https://www.imf.org/external/datamapper/NGDPD_WEO/OEMDC/ADVEC/WEOWORLD/MEQ/SAQ/SEQ). Accessed October 2023.

Japanese corporations in ASEAN

In 2023, Japan and ASEAN celebrated 50 years of friendship and cooperation. We, the member companies of the Executive Sustainability Forum, believe our broad economic presence in the ASEAN region and technological capabilities make us uniquely positioned to undertake impactful change, and we are committed to the realisation of a circular economy (specifically material, carbon and bio-circularity), which underpin the global economy.

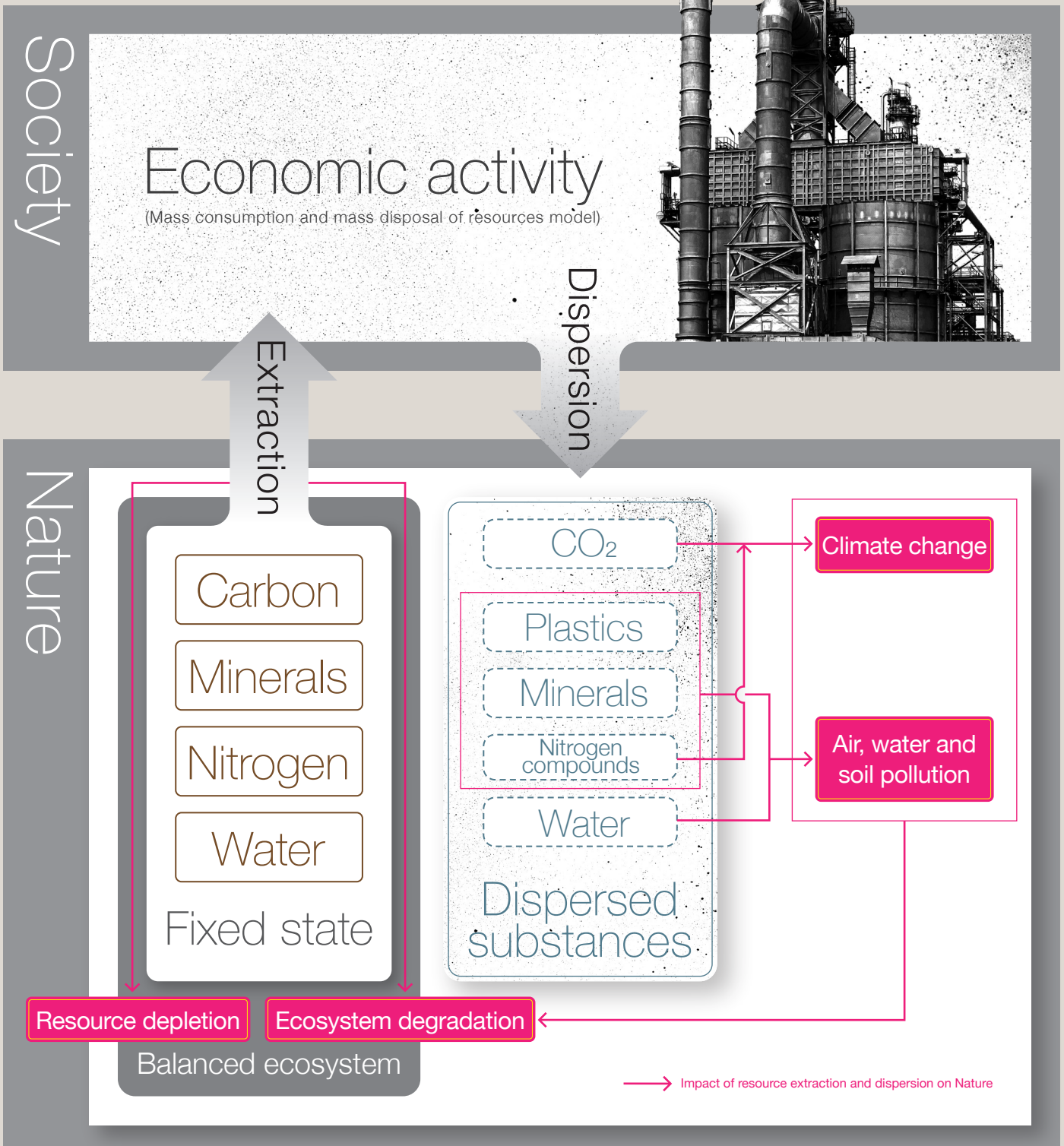
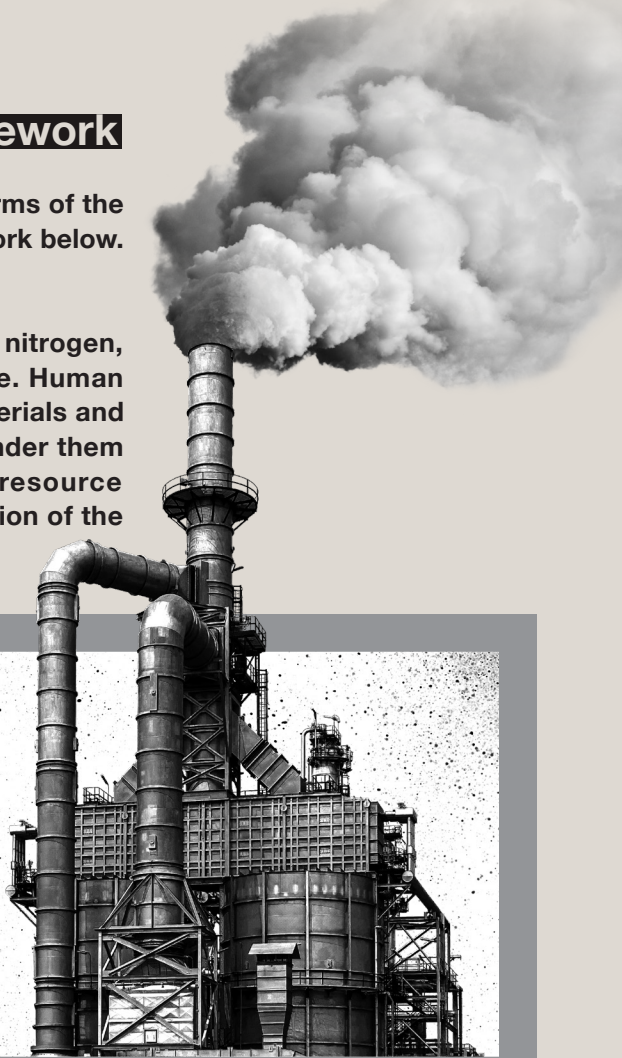


Ministry of Economy, Trade and Industry (2021), 「第51回海外事業活動基本調査概要」(Outline of the 51st Basic Survey on Overseas Business Activities). (<https://www.meti.go.jp/press/2022/05/20220530001/20220530001-1.pdf>).

Overview of the Circular Economy Framework

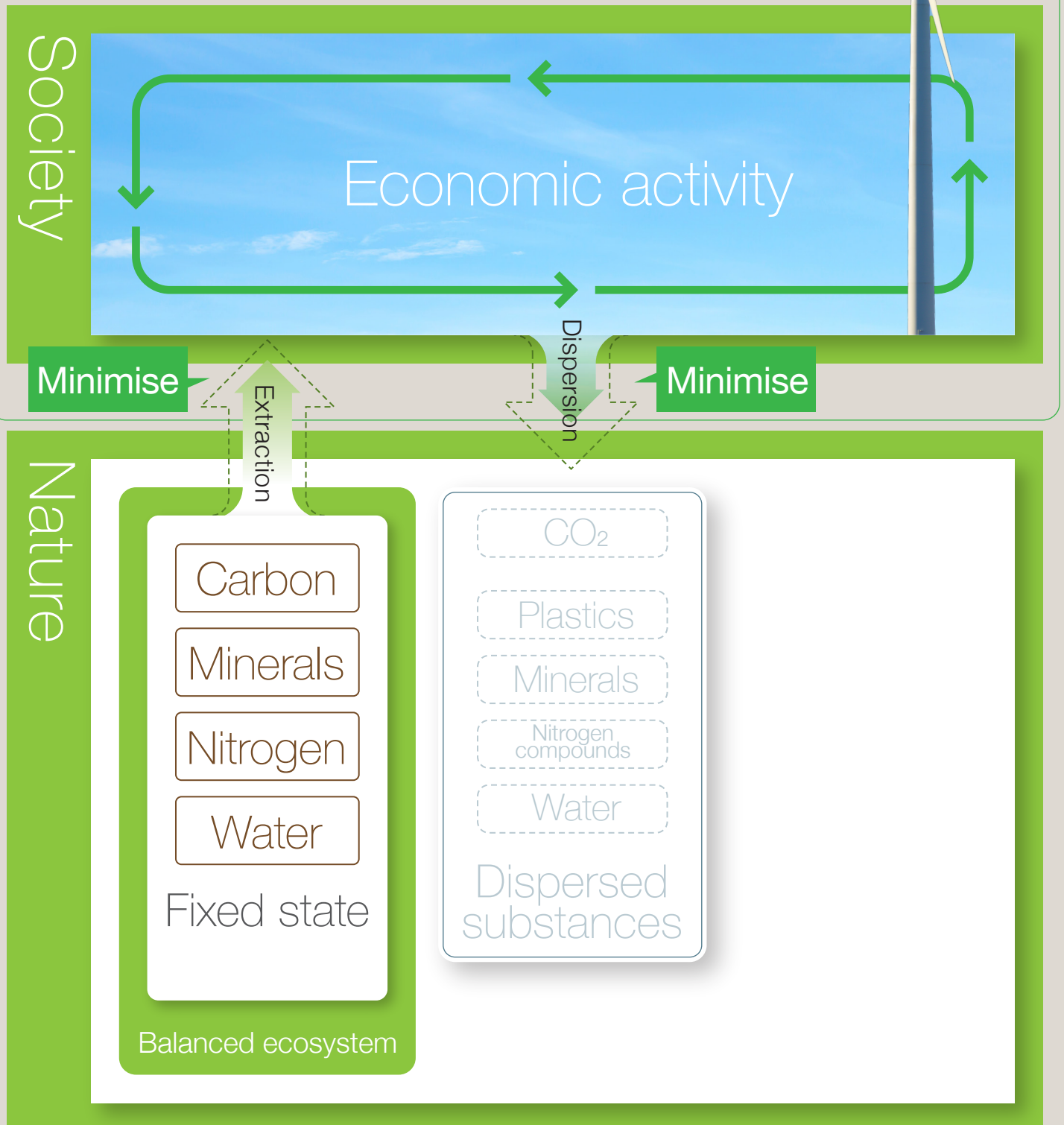
We believe the circular economy can best be understood in terms of the extraction and diffusion of materials, as outlined in the framework below. We welcome your feedback.

In the absence of human economic activity, carbon, minerals, nitrogen, and water would exist in a fixed and balanced state in nature. Human economic activity has extracted large quantities of these materials and other ecosystem inputs, and dispersed them in forms that render them unrecoverable, resulting in environmental issues such as resource depletion, ecosystem degradation, climate change, and pollution of the air, water and soil.



Circular Economy

A circular economy seeks to minimise extraction and dispersal of resources and maximise reuse and recycling to resolve environmental issues and create nature-positive outcomes.



Overview of the Executive Sustainability Forum's Activities

To realise our mission, which involves contributing to the development of a circular economy and carbon neutral ecosystem, we will engage in information sharing with forum members and supporting companies and organisations and share our learnings with the global community.

Connect/Mutual learning

Supporting Companies and Organisations


(Asian and multinational companies and organisations)

Contribute to ecosystem development by sharing information about transitioning to a circular and carbon neutral economy

Discuss

Executive Sustainability Forum members

Discuss solutions at biannual forum



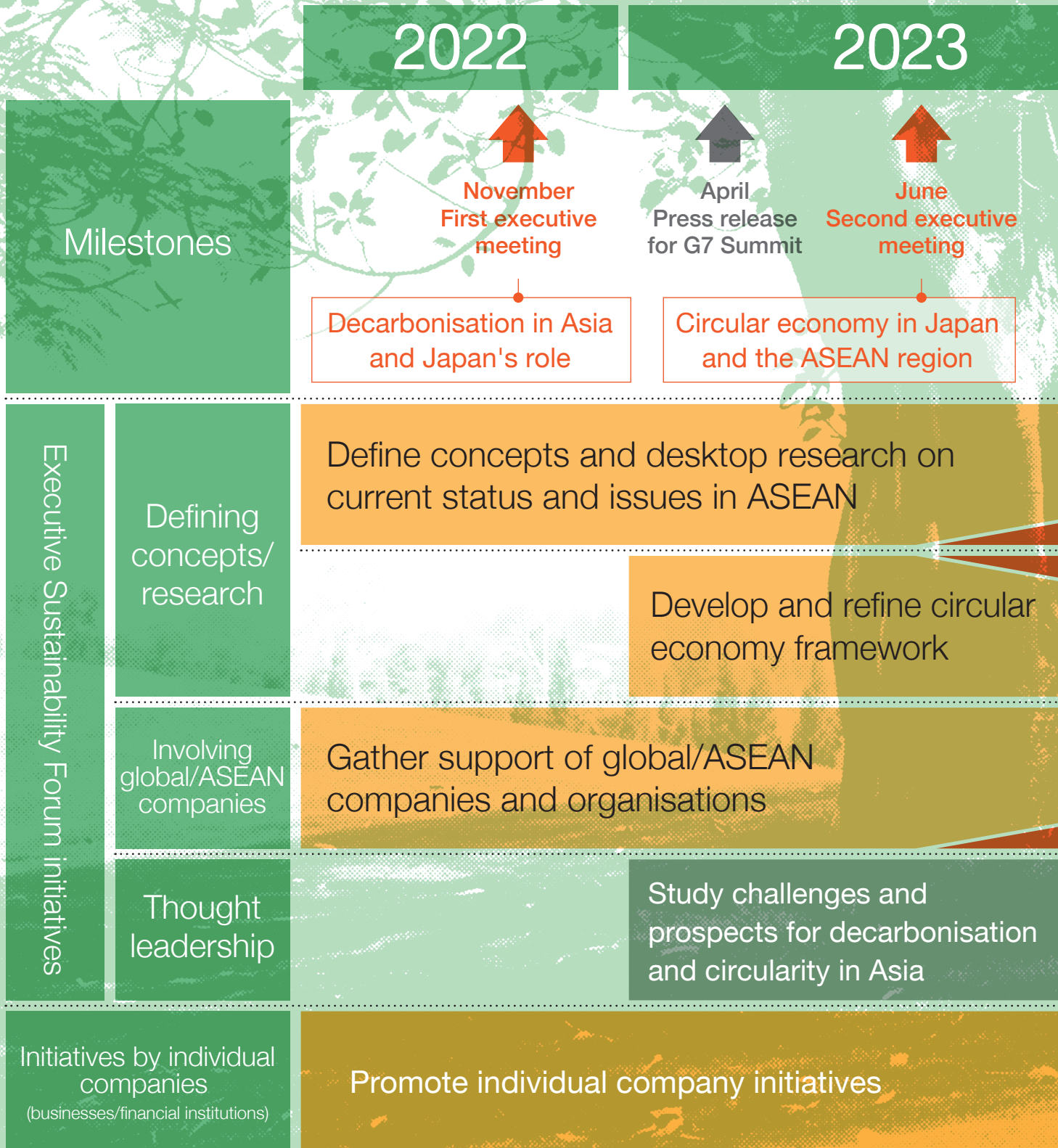
Transition to a Circular Economy
and Carbon Neutral Ecosystem
in ASEAN

Share Global community

Share learnings with key actors and organisations,
both in Asia and globally

Achievements and Future Prospects

Contributing to the creation of a circular economy and carbon neutral ecosystem.



2024

2025 and beyond

December
Third executive meeting

January
World Economic Forum, Davos

Until June
Events in Japan and Asia for discussing key learnings

ASEAN x circular business + launching at Davos

Gather local perspectives on issues and current situation in ASEAN

Refine circular economy solutions in line with ASEAN countries' needs

Share information with supporting companies and organisations

Build ecosystem

Study circular economy frameworks and indicators to measure progress and achievements

Study growth forecast for circular economy in Asia

Evolution of individual company initiatives

Executive Sustainability Forum Members



Taro Fujie
President and CEO
Ajinomoto Co., Inc.



Takahito Tokita
CEO
Fujitsu Limited



Toshihiro Mibe
President and CEO
Honda Motor Co., Ltd.



Yukio Kani
Global CEO and Chair
JERA Co., Inc.



Seiji Izumisawa
President and CEO
Mitsubishi Heavy Industries, Ltd.



Akimoto Uchikawa
President and CEO
Teijin Limited



Toshiaki Sumino
President
The Dai-ichi Life Insurance Company, Limited



Kanetsugu Mike
Chairman
Mitsubishi UFJ Financial Group



Kentaro Okuda
President and Group CEO
Nomura Holdings, Inc.



Toru Takakura
Director, President
Sumitomo Mitsui Trust Holdings, Inc.



Mitsuru Ota
Deputy President
Development Bank of Japan Inc.



Nobumitsu Hayashi
Governor
Japan Bank for International Cooperation



Koichiro Kimura
Chairman
PwC Japan Group

Executive Sustainability Forum Working-level Group Members



Yukiko Takatori

Corporate Executive, General Manager,
Sustainability Development Department

Ajinomoto Co., Inc.



Takeshi Yamazaki

Head of Sustainability Transformation Division

Fujitsu Limited



Masaharu Suzuki

General Manager, Assistant Vice President,
Corporate Strategy Operations

Honda Motor Co., Ltd.



Masato Otaki

Head of the Low Carbon Fuel Planning Group,
Low Carbon Fuel Value Chain Division

JERA Co., Inc.



Takehiko Kikuchi

Senior Fellow,
Head of Business Strategy Office

Mitsubishi Heavy Industries, Ltd.



Shuichi Osaki

Mission Executive, General Manager of
Sustainability Development and
Engagement Department

Teijin Limited



Yusuke Mushi

Head of Sustainability Office,
Corporate Planning Department

The Dai-ichi Life Insurance Company, Limited



Kazuki Takarada

Vice President, Sustainability Office,
Corporate Planning Division

Mitsubishi UFJ Financial Group



Yuki Sano

Head of Group Sustainability COO Office

Nomura Holdings, Inc.



Kazuteru Wakao

Managing Executive Officer

Sumitomo Mitsui Trust Holdings, Inc.



Akihiro Suzuki

Head of Sustainability Management Office,
Corporate Planning & Coordination Department

Development Bank of Japan Inc.



Hiroko Yano

Executive Officer, Director General,
Sustainability Management Department

Japan Bank for International Cooperation



Yuki Isogai

Lead Partner,
Sustainability Centre of Excellence

PwC Japan Group

Statements from Executive Sustainability Forum Members

Ajinomoto Co., Inc.	Contributing to the well-being of all human beings, our society, and our planet with “AminoScience”.
Fujitsu Limited	Contributing to a viable circular society through technology and innovation.
Honda Motor Co., Ltd.	Aiming for 100% use of sustainable materials by 2050 to transition to a circular economy in Asia.
JERA Co., Inc.	Promoting decarbonisation through renewable energy and zero-emission thermal power utilizing hydrogen and ammonia.
Mitsubishi Heavy Industries, Ltd.	Working with key energy business players to help transition to carbon neutrality in Asia.
Teijin Limited	Helping build the circular society through highly durable, high-quality materials and recycling technologies.
The Dai-ichi Life Insurance Company, Limited	Providing long-term funding and diverse risk money to new industries for future generations.
Mitsubishi UFJ Financial Group	Contribute to transformation towards a circular economy, by making use of expertise acquired through efforts to achieve carbon neutrality.
Nomura Holdings, Inc.	Contributing to corporate growth and economic development by supporting the circulation of risk capital.
Sumitomo Mitsui Trust Holdings, Inc.	Contributing to the construction of a circular economy by supplying risk capital and expert talent.
Development Bank of Japan Inc.	Contributing to building a circular economy in the Asia region conducive to sustainable development through the supply of risk capital.
Japan Bank for International Cooperation	Contributing to the realisation of a circular economy and society by leveraging our risk-taking function as a policy-based financial institution and our cross-regional and cross-industry partnerships.
PwC Japan Group	Leveraging our global network and knowledge to discuss issues and provide solutions.

Contributing to the well-being of all human beings, our society, and our planet with “AminoScience”.

The Ajinomoto Group is working to achieve its goals of helping extended the healthy life expectancy of 1 billion people and reducing its environmental impact 50% by 2030.

We also believe that reducing our environmental footprint by addressing climate change, ensuring the sustainability of food resources and conserving biodiversity can extend the healthy life of our planet and contribute to the well-being of all people.

Asia is not only one of our most important markets, but we also source many of our raw materials from the region. The circularity of foodstuffs and natural resources in Asia is an essential foundation for our business.

For this reason, we are working with farmers in Thailand and other Asian countries to develop sustainable agriculture and food value chains. We are also utilising our products and services to improve farm productivity and product quality and increase farmers' income. In addition, given the significant impact on natural capital from discarded plastic food packaging, we regard plastic reduction, waste collection and recycling as urgent issues.

In addition to developing more environmentally friendly packaging, we are working with Asian consumers and other stakeholders in the value chain to collect and recycle waste. In order to expand these activities and create greater impact, through this forum we are seeking to increase opportunities for collaborations with like-minded leading companies in Asia and around the world to drive the transition to a circular economy.

Taro Fujie, President and CEO, Ajinomoto Co., Inc.

Current initiatives		Future initiatives	
<p>Partial changes to our products and facilities</p> <ul style="list-style-type: none"> -Reduce use of plastic in product packaging. -Extend shelf life of products with packaging that keeps foods fresher for longer. 	<p>Optimise customers' use of our products</p> <ul style="list-style-type: none"> -Offer consumers recipes and ideas for how to reduce food loss at home. 	<p>Build circular value chains for existing products</p> <ul style="list-style-type: none"> -Use bio-cycle to convert by-products of manufacturing processes into fertiliser and feed for crops and livestock. -Effectively utilise residues from raw material production and processing. -Build agricultural support ecosystems for sustainable production. (increase productivity and income) -Implement schemes for collecting and recycling plastic packaging. 	<p>Develop circular products and business models</p> <ul style="list-style-type: none"> -Adopt recyclable packaging materials. -Contribute to a recycling-oriented society and create positive impact by expanding the bio-cycle. -Offer agricultural materials that contribute to sustainable agriculture. -Offer foods and ingredients made with low environmental impact materials and production methods (cultured meat, plant-based foods, etc.).

Drive the transition to a circular economy by expanding opportunities for collaborations with like-minded leading companies in Asia and around the world.

Contributing to a viable circular society through technology and innovation.

To address the rapidly worsening global environmental and biodiversity crisis, the Fujitsu Group is committed to its purpose of making the world more sustainable by building trust in society through innovation.

To achieve this purpose, we consider it essential to contribute to solving global environmental problems, developing a digital society, and improving people's wellbeing. Additionally, under our vision of becoming a technology company that realises Net Positive through digital services, we aim to make a positive impact on society.

Technology has great potential to ensure visibility and traceability of supply chains across companies and borders, and to radically improve productivity in developing new materials or exploring possible alternative energies.

We are committed to increasing value creation for our customers and supporting their success, while empowering people to work more creatively.

To realise this goal, we will accelerate our initiatives with other forum member companies and with supporting companies in Asia and around the world.

Takahito Tokita, CEO, Fujitsu Limited

Current initiatives	Future initiatives
<p>Provide solutions related to circularity on a company-by-company basis and build demonstrations and platforms to scale up in the future.</p> <ul style="list-style-type: none"> -Provide company-specific solutions that promote circularity (such as SCM/ERP/MES for the manufacturing industry). -Provide solutions for any stage of the value chain (such as procurement and manufacturing process optimisation). -Build platform to ensure the transparency and reliability of transactions using blockchain technology. Start forming an ecosystem that ensures traceability of various market transactions (recycled materials, water, textiles, rice, etc.). -Visualisation of CO₂ emissions throughout the supply chain and demonstration of data linkage (World Business Council for Sustainable Development PACT program). 	<p>Solutions for the entire value chain and cross-company initiatives</p> <ul style="list-style-type: none"> -Design eco-friendly materials and products using bio/recycled resources and improved manufacturing technologies. Example: Development and exploration of new materials. -Design eco-friendly business models to promote waste collection and reuse by gathering information on product manufacturing, use, and repair history. Example: DDPP support (EV batteries, textiles, building materials, etc.), LCA improvement. -Improve operations and management processes using digital-technologies. Contribute to the expansion of accompanying ecosystems and support corporate value enhancement. Examples: Blockchain, HPC, AI.

Aiming for 100% use of sustainable materials by 2050 to transition to a circular economy in Asia.

Asia is a main driver of global economic growth. At the same time, regional growth is exacerbating environmental challenges. As our presence has grown in the region, we have come to realise that people in Asia want both higher standards of living and a cleaner environment.

Honda is exploring a wide range of practices and technologies to promote reuse and recycling in the production of all parts and materials across our mobility product lineup, as well as the use of renewable energies such as biomass and the electrification of motorcycles and rickshaws. We have set a goal of achieving 100% use of sustainable materials by 2050.

Through this forum, we hope to accelerate our transition to a circular business model in Asia through closer cooperation with not only other Japanese companies, but also companies in other Asian countries, local recycling businesses, and global materials and IT companies.

Toshihiro Mibe, President and CEO, Honda Motor Co., Ltd.

Current initiatives		Future initiatives	
Partial changes to our products and facilities -Adopt sustainable materials. -Reduce CO ₂ emissions in manufacturing processes.	Optimise customers' use of our products -Extend product life spans through optimised service of leased vehicles.	Build circular value chains for existing products -Build recycling ecosystems in collaboration with local vehicle dismantling and recycling businesses. -Promote horizontal recycling. -Develop feasible management and evaluation methods (including CO ₂). -Reduce Scope 3 CO ₂ emissions.	Develop and deploy circular products and business models -Design for easy disassembly, adopt modularisation. -Develop manufacturing processes adapted for recycled materials. -Expand recycling ecosystem in collaboration with parts suppliers.

Promoting decarbonisation through renewable energy and zero-emission thermal power utilising hydrogen and ammonia.

The biggest challenge now facing the world is how to simultaneously achieve energy sustainability, affordability, and stability.

This is particularly an issue in Asia, where approximately 40% of the population lives below the poverty line, and where energy demand is expected to increase. A combination of energy solutions that takes affordability into consideration will be necessary to achieve decarbonisation in the region.

In order to achieve zero CO₂ emissions by 2050, JERA is committed to promoting decarbonisation through a combination of renewable energy and zero-emission thermal power utilising hydrogen and ammonia. To share our goal of decarbonisation with the world, we will collaborate with companies worldwide and take the lead in creating more new energy options.

Yukio Kani, Global CEO and Chair, JERA Co., Inc.

Current initiatives		Future initiatives	
		By 2030 Immediate Action	By 2040 Ambitious Agenda
Transitioning to zero-emission thermal power	Shut down inefficient power stations	-Shut down all inefficient coal-fired power plants by 2030.	
	Ammonia	-Replace fuels used in coal-fired power plants. -Start full-scale operation at conversion rate of 20%.	-Increase ammonia conversion rate from 20% to 50%. -Start operation of progressive hydrogen conversion.
	Hydrogen	-Demonstrate fuel conversion in LNG-fired power plants. -Solve technical issues (hydrogen carriers).	-Implement single-fuel combustion of ammonia. -Increase hydrogen conversion rate. -Utilise CO ₂ offset and CO ₂ -free LNG.
Renewable energy		-Promote development of offshore wind. -Support adoption of storage batteries.	

Transition to CO₂ net zero emissions

Working with key energy business players to help transition to carbon neutrality in Asia.

As one of the pioneers working to increase market adoption of decarbonisation technologies on a global basis, MHI is pleased to participate in this forum and share our Carbon Neutral vision.

In Asia, rapid economic development is driving a growing need for affordable, environmentally friendly, and stable energy sources. As part of a realistic energy transition, we are collaborating with customers to accelerate the use of biomass, a resource abundant in Asia, and co-firing of ammonia or hydrogen with existing facilities, and are also participating in projects for CO₂ capture and storage.

To help achieve net zero in Asia, we wish to cultivate relationships with like-minded partners in other Asian countries and serve as a nexus for creating an ecosystem of Carbon Neutral solutions by developing and commercialising new technologies. Through this forum, we hope to contribute to the region by advancing discussions toward solving critical issues on the path to sustainable growth.

Seiji Izumisawa, President and CEO, Mitsubishi Heavy Industries, Ltd.

Helping build the circular society through highly durable, high-quality materials and recycling technologies.

The transition to a circular economy requires structural changes to society, away from a model characterised by waste generation to one where resources are reused without generating harmful waste.

The Teijin Group is committed to providing highly durable, high-quality materials that extend product life spans and encourages sharing and reuse. We are also working to improve material recyclability across the value chain through partnerships to develop new recycling technologies.

Our goal is to advance science and technology while taking people and the environment into consideration, in order to provide society products and services that have less environmental impact.

In particular, using key technologies necessary for the transition to a circular society, such as carbon fiber and chemical recycling technology, we will focus on developing next-generation materials and work to realise their early adoption in society.

To ensure that our technologies can have the broadest impact possible, we will collaborate with participants across various industries who share our goal of transitioning to a circular society.

Akimoto Uchikawa, President and CEO, Teijin Limited

Current initiatives

Make partial changes to our products and facilities

- Improve energy efficiency in mobility using high-functionality materials, such as carbon fiber.
- Extend product life spans using more durable materials, such as aramid fibers for tyres.
- Provide materials and products that support the transition to alternative energy, such as carbon fiber for wind turbine blades and hydrogen storage and transportation tanks.
- Promote material and chemical recycling of polyester products.

Optimise customers' use of our products

Build circular value chains for existing products

- Build end-of-life product collection networks.
- Introduce material separation technology.
- Ensure traceability of recycled materials.
- Visualisation of environmental value through life cycle assessments.

Future initiatives

Develop and deploy circular products and business models

- Complete recycling of high-functionality, highly-recyclable composite materials.
- Introduce mono-material products.
- Carbon capture and utilisation (CCU).

Providing long-term funding and diverse risk money to new industries for future generations.

The mission of Dai-ichi Life Group is "By your side, for life", on this basis, we wish to deliver continuously for the well-being of our customers and their loved ones, enabling them to lead richer, and healthier lives with peace of mind for their future.

Launched in Vietnam in 2007 with the goal of sustainable growth, our overseas operations now extend to nine countries worldwide, eight of them in the Asia-Pacific region. This region is facing complex issues such as climate change, biodiversity loss, and resource depletion. Transitioning to a circular economy is crucial to address these challenges. This forum unites companies eager to collaborate as fellow members of Asia, committed to tackle these problems unitedly.

Realising a circular economy will require new technologies and business models, as well as investment not bound by the pursuit of short-term profits. We believe our role as a life insurance company and an asset owner, and the mission of Dai-ichi Life Group, is to provide long-term funding and to diverse risk money for new industries.

Through the discussion with other forum members, we would like to explore and take our role as a life insurance company and an asset owner, to fulfill our responsibility to ensure a sustainable society and environment for the future.

Toshiaki Sumino, President, The Dai-ichi Life Insurance Company, Limited

Contribute to transformation towards a circular economy, by making use of expertise acquired through efforts to achieve carbon neutrality.

MUFG embraces our responsibility to help resolve the world's serious environmental and social issues. We have a societal duty as a leading financial institution in Asia to help lead collective efforts to achieve carbon neutrality throughout the region, including Japan, and contribute to transformation towards a circular economy which requires integrated action together with response to climate change.

The transformation of the industrials sector towards a circular economy has implications for MUFG in terms of both business continuity risks and growth opportunities. It is important for MUFG with capital ties to partner banks in the ASEAN region to support the transformation in Asia as well as Japan.

We think that for the transformation towards a circular economy, it is required to develop grand design to achieve overall optimisation across industries and establish measurable quantitative indicators. While acquiring the data necessary for these actions will be an enormous task, it is essential for attracting private-sector funding. MUFG will contribute to transformation towards a circular economy, by making use of expertise acquired through efforts to achieve carbon neutrality such as financing support as a result of customer engagement and international rulemaking.

Kanetsugu Mike, Chairman, Mitsubishi UFJ Financial Group

Contributing to corporate growth and economic development by supporting the circulation of risk capital.

It is extremely important to construct a path towards a circular economy which affords the promise of enhanced competitiveness and economic growth while securing natural resources and reducing the burden on the environment.

But we cannot get there with existing technologies alone.

We need to develop, apply and deploy innovative new technologies, and that in turn will require significant investments.

The role of financial institutions like ours is to help improve people's lives, society and the economy by connecting investors and companies through financial and capital markets, supporting the circulation of risk capital, the lifeblood of the economy, while providing liquidity and ensuring sound business practices.

The circulation of risk capital enables companies to invest in new growth opportunities, and the fruits of their success are returned to investors, contributing to achieving higher living standards. As a result, the economy as a whole grows and countries progress.

Nomura Holdings has set a target to deploy \$125bn in sustainable financing over the five years until March 2026.

As part of these efforts, we have created the Greentech Industrials & Infrastructure (GII) team to provide high value-added advisory services to both startups, which holds innovative technologies in areas such as low-carbon, digital, resource optimisation and existing players.

Kentaro Okuda, President and Group CEO, Nomura Holdings, Inc.

Contributing to the construction of a circular economy by supplying risk capital and expert talent.

Today's growing global population is increasing competition for natural resources. At the same time, a surge in resource consumption on the one hand and waste disposal on the other is exacerbating climate change and biodiversity loss. This has prompted much talk about the need to transition to a circular economy. Taking this into account, we believe it is imperative that society and businesses strive to accomplish three things. One, transition from a linear economy to a circular economy. Two, promote a "buy local" approach to waste management, collecting and disposing of waste locally, without it being shipped overseas. And three, build new supply chains connecting stakeholders within the circular economy.

We will continue to support initiatives that contribute to solving challenges such as these through two primary methods. By providing risk capital in the form of positive impact finance and impact equity investment based on key resource circularity indicators, and by providing specialised personnel with technical expertise.

While this is still a developing field in Japan, going forward we hope to contribute to solving social issues in the ASEAN region using the Japanese circular economic model, through collaboration with Asian partner companies.

Toru Takakura, Director, President, Sumitomo Mitsui Trust Holdings, Inc.

Contributing to building a circular economy in the Asia region conducive to sustainable development through the supply of risk capital.

In addition to offering solutions to global challenges such as climate change and biodiversity loss, the transition to a circular economy can serve as a driver of economic growth through the creation of new technologies, industries, and supply chains. Achieving a circular economy that supports sustainable growth is particularly important in ASEAN countries and elsewhere in the Asia region, where continued population growth is expected to lead to greater demand for natural resource as economies grow.

To support the transition to a circular economy in ASEAN countries and elsewhere in the Asia region, the DBJ Group aims to utilise its network of leading local business partners, including groups, conglomerates, and sovereign wealth funds, to provide local companies and funds with risk capital and other investment services, as well as Japanese companies with advisory services such as introducing M&A projects and offering negotiation support.

The DBJ Group's mission is "Design the Future with Financial Expertise - Continue to expand financial frontiers; Provide the best solutions for customers and society; Pursue sustainable development for Japan and the world." We will continue to dialogue with our stakeholders based on discussions at this forum as we conduct our investment and financing operations, with the aim of achieving positive impact through the Asia region's circular transition.

Mitsuru Ota, Deputy President, Development Bank of Japan Inc.

Contributing to the realisation of a circular economy and society by leveraging our risk-taking function as a policy-based financial institution and our cross-regional and cross-industry partnerships.

Initiatives for a circular economy are extremely meaningful in contributing to solving various issues that the international society faces today, including not only environmental issues such as climate change, nature positive, and biodiversity, but also economic issues such as economic security, in terms of securing stable supplies of natural resources, and strengthening of the resilience of supply chains.

In addition, the transition to a circular economy requires changes in existing industrial structures and social styles, while it affords new business opportunities for companies and new value-added creation opportunities for the global economy. As a circular economy and society is difficult to achieve with existing technologies and business models, innovation is indispensable. It also requires a cross-regional and cross-industry perspective that takes into consideration the global value chain as a whole.

Based on the recognition of these issues, JBIC, with the mission of improving the international competitiveness of Japanese industries, securing stable supplies of natural resources for Japan, and pursuing sound development of Japan and the international economy and society through preserving the global environment, will further support initiatives for a circular economy by Japanese companies and by developing and emerging countries in Asia and other regions with which Japan has close economic ties and which are expected to continue to be drivers of the global economy, by leveraging our risk-taking function as a policy-based financial institution and our cross-regional and cross-industry partnerships.

Nobumitsu Hayashi, Governor, Japan Bank for International Cooperation

Leveraging our global network and knowledge to discuss issues and provide solutions.

Even in a changing and uncertain business environment, investors expect companies to consistently achieve sustainable growth. We believe that by leveraging its strengths in advanced technologies and creating impact in collaboration with stakeholders, Japan can contribute to solving global environmental and social issues while also creating economic value.

Asia is a major driver of global economic growth. At the same time, the conventional linear growth model is pushing our planet to its limits. Until now, Asia has been an important partner for Japan's manufacturing industry, both as a producer and a consumer of its goods. But the time has come to transform and restructure this entire value chain to make it more sustainable. Leveraging its global network and expertise, the PwC Japan Group will lead discussions and offer solutions to promote sustainable growth in Asia while building trust with leading companies, start-ups, NGOs, governments, international organisations, and others.

Koichiro Kimura, Chairman, PwC Japan Group

Collaboration with Supporting Companies and Organisations

Discussions were held with approximately 50 ASEAN companies and organisations across diverse sectors.



Participants: **50** companies/
organisations



Finance **2** companies/
organisations



Energy **6** companies/
organisations



Food and
agriculture **14** companies/
organisations



Materials **17** companies/
organisations



Other **11** companies/
organisations

- A majority of the participants agreed with the mission and activities of the Executive Sustainability Forum.
- In particular, there was strong agreement with the concept of Asian business leaders discussing Asian issues.

Global Executives and Experts Express High Hopes for the Executive Sustainability Forum

“ I hope the Executive Sustainability Forum will serve as a critical hub to connect sustainability leaders in Asia and the rest of the world to address issues in ASEAN and realise a circular economy.

-Feike Sijbesma, Honorary Chairman, DSM

“ With geopolitics and sustainability more important than ever, it's becoming increasingly critical for Japanese companies to implement circular initiatives in Asia as a strategy for risk reduction.

-Ian Bremmer, President and Founder, Eurasia Group and GZERO Media

“ The Asia-Pacific region is rapidly shifting and conventional models of meaningful growth are no longer holding up. The Executive Sustainability Forum can help confront challenges in a coordinated, integrated and cohesive manner to meaningfully address multifaceted and complex problems.

-Rebecca Fatima Sta Maria, Executive Director, APEC Secretariat

“ The Executive Sustainability Forum provides a unique platform for us to connect with industry leaders and experts to explore and scale innovative strategies and investments to fight plastic pollution and climate change, and advance the circular economy in Asia.

-Rob Kaplan, Founder and CEO, Circulate Capital

“ Pertamina recognises the pivotal role of the Executive Sustainability Forum in shaping the energy landscape and fostering sustainable practices, through knowledge sharing and engagement among the global leaders.

-Emma Sri Martini, Director of Finance, Pertamina

“ By embracing the collaborative spirit of Executive Sustainability Forum, HHI will share our expertise in certified post consumer recycled plastics material and a deep understanding of the Southeast Asia recycling infrastructure with like-minded champions.

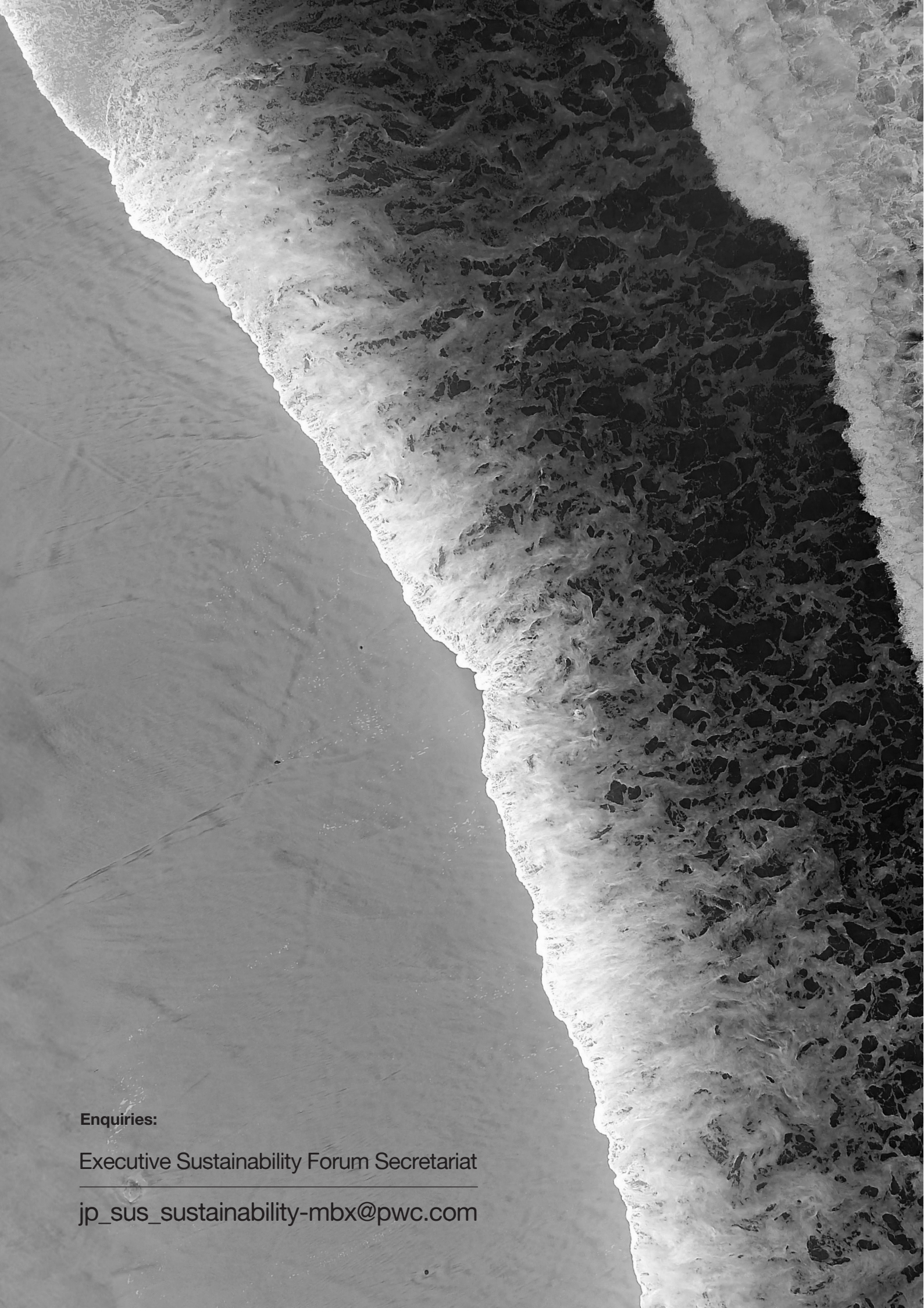
-Seah Kian Hoe, Founder and CEO, Heng Hiap Industries

“ We anticipate that the Executive Sustainability Forum will serve as a catalyst for collaboration toward a more circular and responsible electronic waste ecosystem.

-John Jonghun OH, Chief Strategy Officer, TES-AMM

“ The concept can be called “qualitative growth” that creates fantastic opportunities for absolutely everybody, a fully green but futuristic mode of growth. The new business models make the world a better place.

-Dr. Markus Gabriel, Philosopher, Professor, University of Bonn



Enquiries:

Executive Sustainability Forum Secretariat

jp_sus_sustainability-mbx@pwc.com