

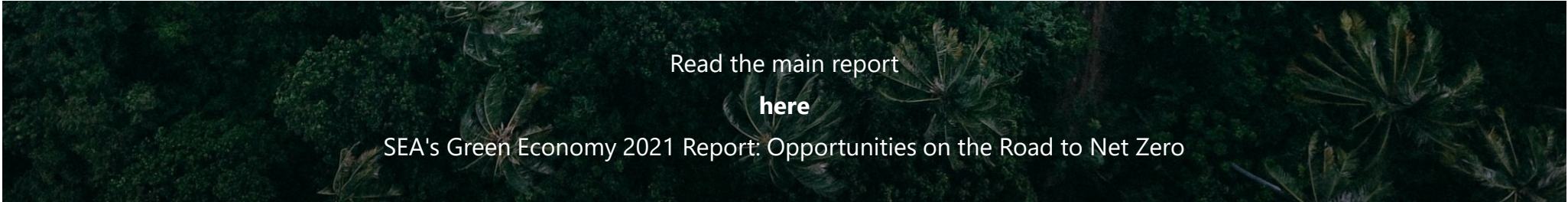
A lush green forest with a wooden walkway and a stream. The walkway is made of reddish-brown wood and has a railing. The stream is in the foreground, and the forest is dense with various types of trees and plants. The background is slightly hazy, suggesting a misty or rainy day.

01

Defining the Road to Net Zero

Regional action and awareness are building, yet pathways and results remain on the horizon

Main report



Read the main report

here

SEA's Green Economy 2021 Report: Opportunities on the Road to Net Zero

Deep-dive sections

01

Defining the Road to Net Zero
This report

02

Find out more about the building blocks for SEA's Net Zero journey
here
Catalyzing the Journey

03

Find out more about SEA's green capital flows
here
Unlocking Capital Flows

Country insights

Find perspectives on Indonesia
here

Find perspectives on Malaysia
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Find perspectives on Vietnam
here

Find perspectives on Brunei, Cambodia, Laos, and Myanmar
here

Key messages

A

Southeast Asia (SEA) has awoken to the call to climate action in the past year

- **SEA nations are beginning to mobilize**, with ambitions forming across the board: Indonesia and Laos have announced Net Zero targets and carbon pricing schemes are either implemented or under consideration in six countries
- **Corporates in the region** are leading by acting
 - **Regional champions** are coming to the table, recognizing significant threats to their future (e.g., the decline of traditional resource sectors), as well as the opportunity to position for competitiveness (e.g., increasing sustainability considerations in cost of capital and access to finance)
 - **Government-linked enterprises** are investing holistically to drive ecosystem change, e.g., Temasek established a \$600 million decarbonization fund in partnership with BlackRock and Bukit Asam has set a Net Zero target
- **Multinational corporations (MNCs)**, with significant focus on Net Zero, are decarbonizing their supply chain, many of which start in SEA, and are also working with customers to drive forward their own climate agendas
- **Family-run businesses**, which make up >85% of the region's businesses of >\$1 billion value, are particularly well-positioned to accelerate the region's transition due to shorter chains of command and long-term, intergenerational mindsets

B

While a good start, there is much more to be done

- **SEA's emissions trajectory unlikely to meet climate ambitions** based on Paris Agreement; despite this, there have been limited improvements in updated nationally determined contributions (NDCs): in 2030, there will remain a regional **~3-4 Gt gap to the 1.5°C pathway** based on latest NDCs
- SEA emissions per capita is set to increase to **~6-7 tCO₂e per capita by 2030, overtaking the global average**, while emissions intensity of GDP will see a slight decrease
- Compared to global benchmarks, SEA's national and corporate **ambitions have been modest**
- The region must take steps to **solidify its Net Zero plans** in order to achieve their targets and beyond
- **Small and medium enterprises (SMEs)**, which form ~40% of GDP and ~75% of the workforce, are feeling the pressure but **face challenges in making the shift** due to resource constraints exacerbated by Covid-19
- In the meantime, **pressure is only growing** – from regulators, investors, consumers, and employees
- While the overall trend is positive, **action needs to accelerate** – SEA-specific conditions present both challenges and opportunities for a full-scale sustainability transformation for the region

C

It is time to translate intent into action

- **Immediate focus** for SEA's climate action: **decarbonize the region's heaviest emitting sectors** (energy: 46%, land use change and forestry: 27%, agriculture: 15% of total SEA emissions)
- Scaling the **voluntary carbon markets and the "green data revolution"** are key accelerants for our Net Zero transition

Covid-19 has brought issues of regional risk and resilience into sharp focus and spurred climate awareness

In the wake of Covid-19, we have witnessed a shift in discourse in SEA:

Heightened awareness of supply chain disruptions and food security risks

Covid-19 has reinforced the need to develop a more resilient, **localized supply chain**, **improve food security**, and reduce the region's reliance on global trade flows.

For example, **Singapore launched its "30 by 30" plan** for local farms to produce 30% of nutritional needs by 2030 with tech-enabled urban and sustainable farming systems, which will also reduce emissions footprint.

Increased need for resilient government green recovery budgets

Covid-19 has highlighted the need to **move away from the BAU¹ approach** governments have taken in the past in response to external shocks such as climate events.

As part of SEA's Comprehensive Recovery Framework, a core priority is to advance **toward a more sustainable and resilient future**, including the transition to **sustainable energy** and **green infrastructure**.

Change in individual behavior and consumption habits

Covid-19 lockdowns have changed the way individuals live and work (e.g., video calls and work from home instead of traveling) and if sustained, could **potentially abate ~15% of all transportation emissions**.

The pandemic has also **accelerated the shift to digital** as a consumption platform over the past year while also **shifting consumers toward "conscious consumption"** with **~54% of SEA consumers** indicating they will be **more environmentally conscious** in the future.

Notes: 1. Business as usual

Sources: [CNA](#); [LSE](#); [Singapore Food Authority](#); [ASEAN](#); [Bain](#)
2020 SEA digital consumer [survey](#); One Earth

SEA has made progress in the past year but **more still needs to be done**



Landmark moves by SEA nations

There has been a wave of landmark announcements by SEA governments in the past year, including 2 Net Zero commitments (Laos, Indonesia) and 4 national green plans (e.g., Singapore's Green Plan 2030, Thailand's Bio-Circular-Green Economy model) to accelerate the transition toward Net Zero

Steps forward in regional collaboration

In 2021, the ASEAN¹ Taxonomy Board was set up to develop a regional, sustainable finance and transition taxonomies framework, and Phase II of the ASEAN Plan of Action for Energy Cooperation was launched

Corporations in the region leading the way

Corporations across the spectrum are taking concrete actions to accelerate sustainability within and beyond their own organization's boundaries (e.g., working with suppliers and customers to drive their sustainability agenda). Family-led businesses have also awoken to the importance of sustainability and resiliency in the wake of Covid-19 and are well-positioned to lead the charge in the region

NDCs and renewables targets lag global peers

SEA nations are behind global peers in Net Zero commitments (20% of SEA nations vs. 28% of the world), renewables supply targets (~23-29%² in SEA vs. ~40% in the US by 2040), and NDCs (latest SEA NDCs closed the gap from previous by 11-18% vs. 68% for Colombia and 64% for EU). The region still has ~3-4 GtCO₂e³ emissions gap in 2030 to achieve the 1.5°C pathway

Lack of robust plans to achieve Net Zero targets

Most SEA countries do not have all the elements of an effective Net Zero plan (e.g., Net Zero committed to law, absolute 2030 emissions targets, full sector coverage), leaving more to be done to enhance the scope and clarity of their commitment

SMEs lacking in support and resources to make the shift

Exacerbated by Covid-19, SMEs, who form ~40% of GDP and employ ~75% of the workforce, lack financial and human resources and sustainability capabilities to keep up with the rapidly evolving sustainability standards (e.g., access to green financing)



Notes: 1. Association of Southeast Asian Nations; 2. Range dependent on ASEAN Centre for Energy's ASEAN (Phase II: 2021 – 2025) target scenario or progressive scenario; 3. Bain analysis based on latest country NDCs

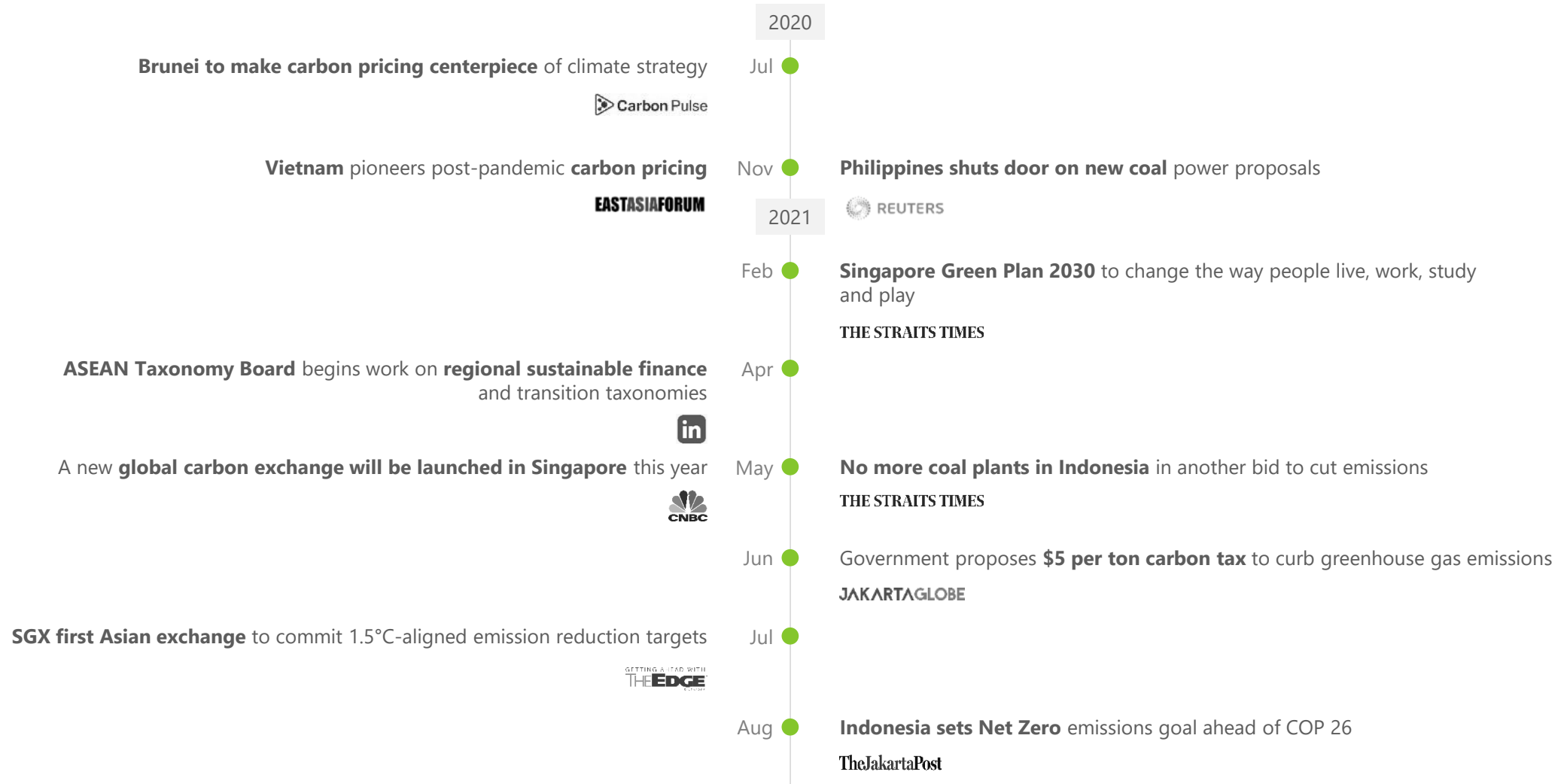
Sources: EIA; Reuters

01

ROAD TO NET ZERO

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SEA countries have made **landmark announcements and moves** in the past year alone













Sources: Bloomberg; Jakarta Post; Straits Times; Straits Times (2); Reuters; East Asia Forum; Carbon Pulse; CNBC; LinkedIn; Jakarta Globe ID; Reuters (2); The Edge

01

ROAD TO NET ZERO

National ambitions are beginning to form across the region

Only 2 countries have committed to Net Zero Singapore is the only country whose unconditional emissions are expected to fall between now and 2030 2 countries have implemented or announced a carbon tax, while 4 are considering carbon pricing

| |  Brunei |  Cambodia |  Indonesia |  Laos |  Malaysia |  Myanmar |  Philippines |  Singapore |  Thailand |  Vietnam |
|--|--|--|---|--|--|---|---|---|--|---|
| Net Zero | | | 2060 | 2050 | | | | | | |
| 2030 emissions targets¹ | | | | | Emissions intensity of GDP relative to BAU | Absolute emissions target (select sectors) | | Absolute emissions target (economy-wide) | | |
| Unconditional ² | -20% | | -29% | -60% | -45% | 600 MtCO ₂ e ³ | -3% | 65 MtCO ₂ e | -20% | -8% |
| Conditional | | -42% | -41% | -67% | | 400 MtCO ₂ e ³ | -75% | | -25% | -25% |
| <i>Implied change in absolute emissions (from 2018 levels)⁴</i> | | | | | Regional (unconditional) target of ~26% by 2030 | | | | | |
| Unconditional | +39% | | +19% | +9% | +84% | +158% | +50% | -3% | +3% | +99% |
| Conditional | | +31% | -1% | -11% | | +85% | -62% | | -3% | +62% |
| Carbon pricing | Carbon pricing to be implemented by 2025 | | Carbon tax (\$5/tCO ₂ e) announced, ETS ⁵ under consideration | | | | Carbon tax and ETS under consideration | Carbon tax (~\$4/tCO ₂ e) implemented | ETS under consideration | ETS legalized – to take effect by Jan 2022 |
| Renewables installed capacity target⁶ | ~30% by 2035 | ~25% by 2030 | ~48% by 2030 | ~30% (consumption) by 2025 | ~40% by 2035 | ~11% by 2030 ⁷ (non-hydro) | ~38% by 2035 | ~15% by 2030 ⁸ | ~30% by 2030 | ~32% by 2030 |
| | | | | | Regional target of ~33% by 2025 ⁹ (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 5.8 million ha of forests and 1.9 million 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 | Reduce deforestation by 25% by 2030 (50% conditional) | Eliminate net loss in forests, mangrove, seagrass, coral cover by 2028 | Plant 1 million more trees and add 130 ha 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 |

A Notes: 1. "Emissions targets" refers to target reduction by 2030 from business-as-usual (BAU) unless stated otherwise; 2. Unconditional reduction not dependent on external support. Conditional targets dependent on sufficient international support; 3. Myanmar's NDC largely addresses only energy and land use change and forestry, which make up ~65% of their emissions today; 4. Implied change estimated as percentage difference of calculated absolute emissions level in 2030 based on targets from 2018 levels; 5. Emissions trading scheme; 6. Refers to installed capacity, not to be confused with power supply/generation; 7. Unconditional target for non-hydropower renewables; 8. Based on 2 Gwp solar capacity target by 2030 as % of estimated total power capacity of ~13.8 GW; 9. Based on ASEAN Centre for Energy's ASEAN target scenario (Phase II: 2021 – 2025)

Sources: Reuters; Mongabay; CNA; Greenplan; Power-technology; The Edge; JTC; Eco-business; Global Data; icap; Business Inquirer; Bangkok Post; IEA; Export.gov; Platform 2020 redesign; Nupi; UNFCCC; All NDCs; UOB; ASEAN Energy



Increasing commitments and taking tangible action to drive sustainability forward

SEA SBTi signatories



Regional Champions

Increasing recognition of sustainability risks and opportunities

Improved business operations to **achieve efficiencies from sustainability**

“(In 2020, CDL)¹ achieved 44% reduction in carbon emissions intensity against 2007 levels... over \$30 million in energy savings from energy efficient retrofitting and initiatives across all its commercial buildings



Sustainability initiatives to capitalize on **lower costs of capital**

“(The \$255 million sustainability-linked loan has) a mechanism to **adjust to lower interest rates based on Indorama’s ESG² score** (with maturity in 2025)



Government-linked Enterprises

Investments and partnerships to develop holistic infrastructure and drive ecosystem change

TEMASEK

Established \$600 million decarbonization fund in partnership with BlackRock



Acquisitions of renewable companies such as Amplus and SOLS Energy to boost clean energy portfolio



Targeting Net Zero by 2060 and increased transparency through partnership with CDP Global



Accelerating electric vehicles adoption in partnership with Foxconn

MNCs

Collaboration with **suppliers and customers** to decarbonize supply chains

78%

Will remove suppliers that endanger their Net Zero transition by 2025³

30%

Have offered **preferential pricing** to sustainable suppliers³



Targeting Net Zero by 2039 for entire supply chain (~90% of palm oil suppliers in SEA)



Requires 100% RSPO⁴-certified palm oil by 2023 from suppliers (>90% in SEA)



Requires supplier certification for environmental management (~44% in SEA)

...and with customers and ecosystem drive forward sustainability agenda



Developing digital environmental solutions and established AI for Earth and \$1 billion climate innovation fund


Notes: 1. City Developments Limited; 2. Environmental, social, and governance; 3. According to survey with 400 of the world’s largest MNCs, conducted by Standard Chartered in Mar 2021; 4. Roundtable on Sustainable Palm Oil


Sources: The Global Economy; SC; SCMP; Reuters; Energy Voice; PTBA; IEEFA; Unilever suppliers; Nestlé suppliers; Samsung suppliers; Indorama; Climate Bonds; Petronas; Global Data; CDL; Company websites; Industry interviews


Family-run businesses are poised to play a pivotal role in SEA's transition

> 85% of SEA businesses valued at >\$1 billion **are family-run**¹

Family businesses have multiple strategic advantages in shifting to sustainability:

- 

Shorter chain of command
allows for more nimble decision-making and transformations
- 

Majority family ownership
results in reduced external pressures to manage for short-term profitability
- 

Generational mindset
enforces an inherent sense of stewardship in building longevity and resilience for intergenerational transfer

“**Founder and family-led businesses hold the key to a dramatic change** (for sustainability in ASEAN)

VP Sales & Marketing, Global Tech Co

“**Family businesses have unique advantages** that may enable them to bring more **immediate impact** (in sustainability)

Managing Director, Government Investor Co

“**As a family business, longevity is the key common theme, be that in commerce, sustainability, or people management**

General Manager, Family Conglomerate Co

Examples of family businesses leading the charge



Targeting **group-wide Net Zero** by **2030** (scope 3 by 2050) **through** renewables (100% by 2030), energy efficiency, low-carbon products and nature-based solutions



Introduced innovative **circularity** practices and **energy efficiency** assets and installed **renewable energy** in group subsidiaries (Shangri-La Group, Kerry Logistics, etc.)



Developed Singapore's **first carbon neutral building** and **eco-mall** by focusing on energy efficiency and carbon offsetting

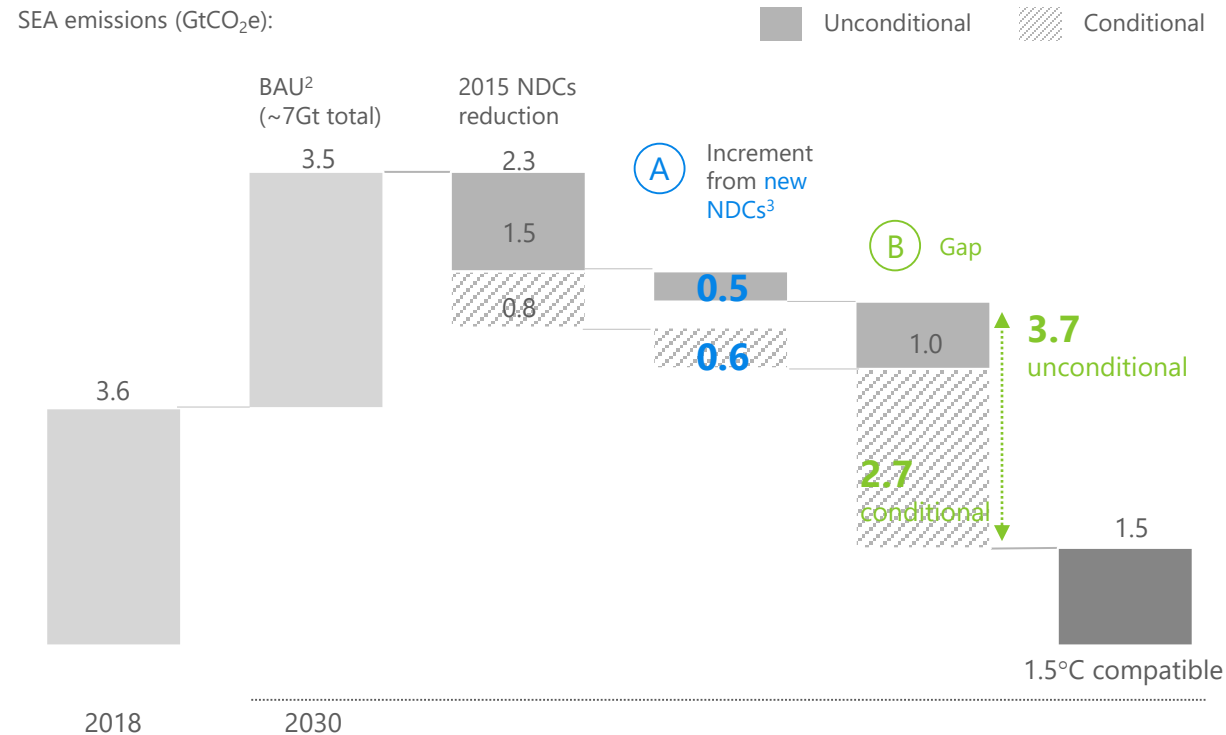
Notes: 1. Family-run businesses have more than half of their shares controlled by (more than 1) members of the same family

Sources: [Brunswick Group](#); [UNESCAP \(CP Group\)](#); [Hong Leong](#); [Company websites](#); [Institute for Family Business](#); industry interviews

However, SEA is not on track, and there is a lot of work to do

Based on latest NDCs

SEA expected gap to 1.5°C compatible emissions levels in 2030¹

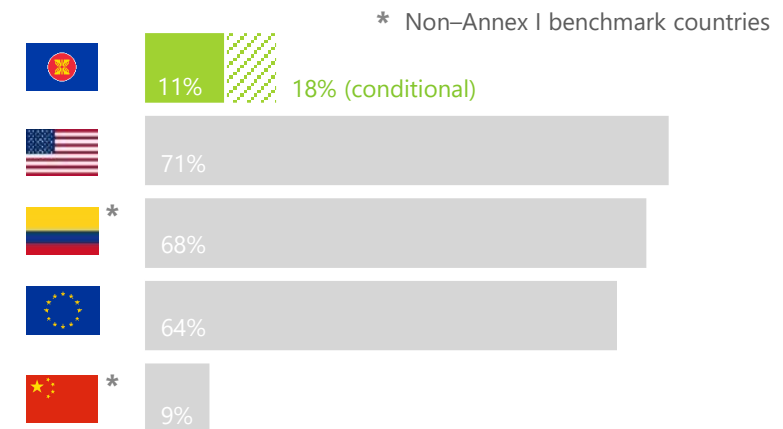


(A) SEA's latest NDCs predict a **marginal improvement of 0.5–0.6 GtCO₂e** from previous, which leaves projected emissions levels at **>4-5GtCO₂e in 2030**

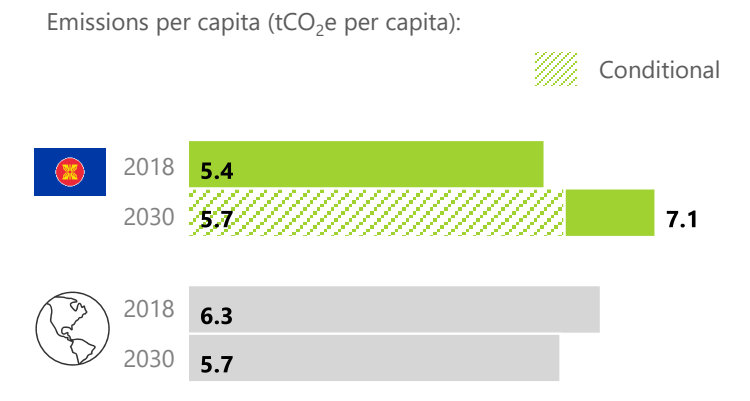
(B) ~2.7–3.7 GtCO₂e gap to 1.5°C pathway compatible scenario remains in 2030

Notes: 1. 1.5°C compatible emissions levels based on Intergovernmental Panel on Climate Change (IPCC) estimate that annual emissions will need to fall by 45% from 2010 levels by 2030; 2. BAUs emissions taken from country NDCs where available; 3. Myanmar's latest NDC had a significant contribution to the increment from new NDCs, as they did not provide previous mitigation targets in the old NDCs. Myanmar's BAU only accounts for selected sector emissions, which contribute to ~65% of total emissions today. Laos' BAU emissions used in place of their old NDCs as targets provided in old NDCs were not comparable; Sources: IPCC; Country NDCs; Euromonitor; EIU; Bain analysis

2030 emissions gap closed by latest NDCs (from 2015 NDCs)



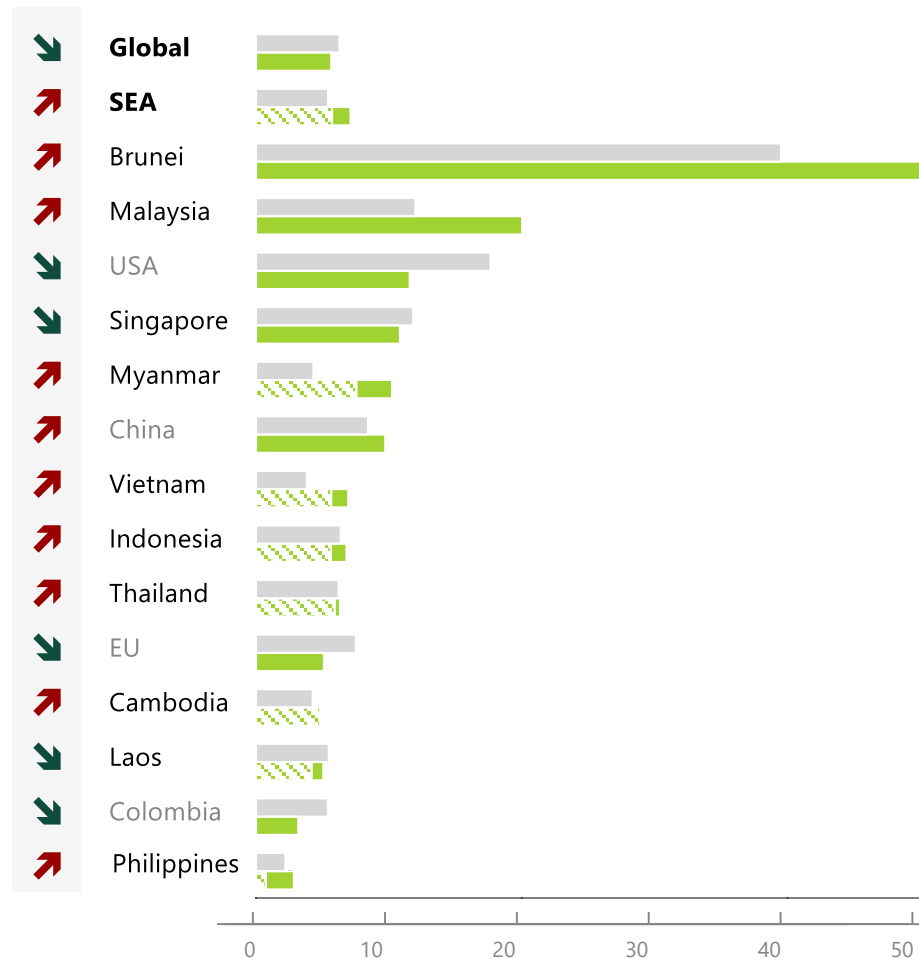
SEA emissions per capita is set to overtake global average by 2030



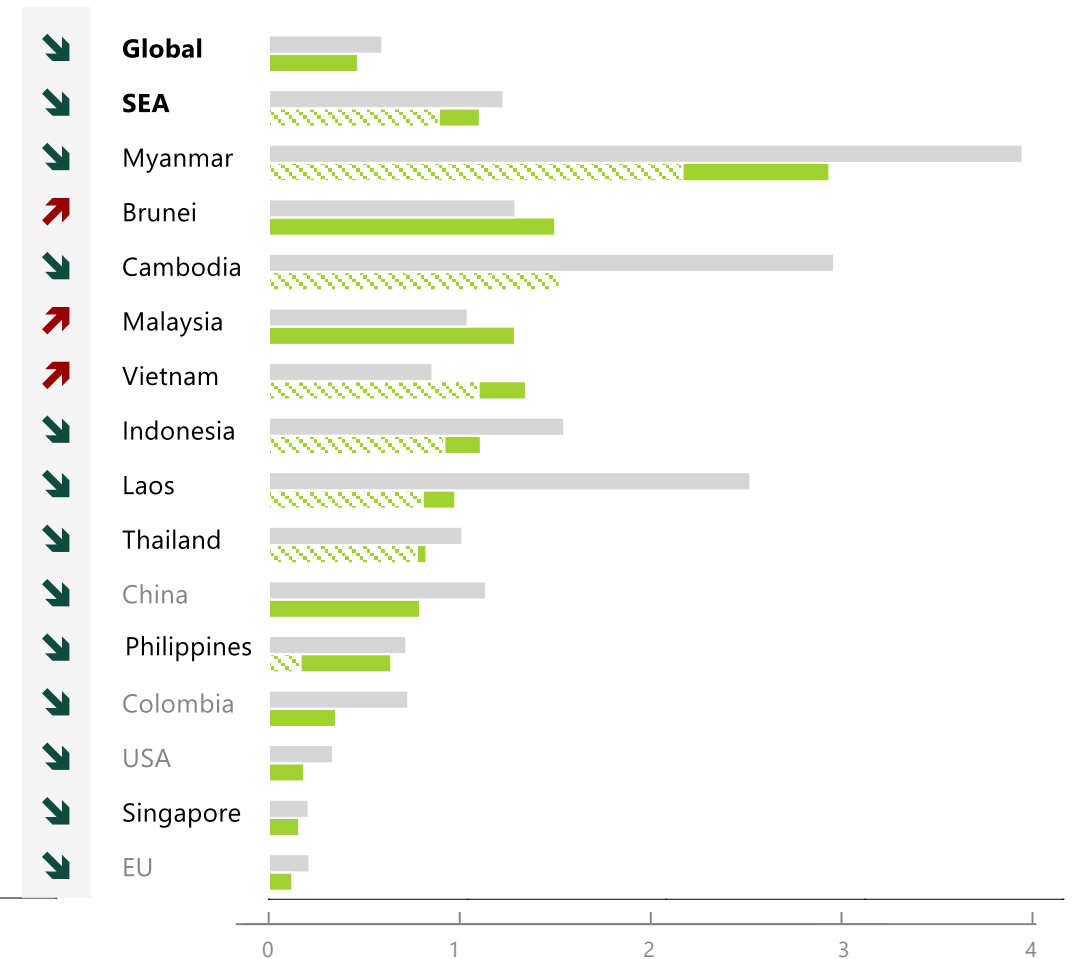
Based on latest NDCs, most SEA countries expect **emissions per capita to increase** amid falling global average and **emissions intensity of GDP to decrease** slightly

■ 2018 (actual) ■ 2030 (unconditional NDC) ▨ 2030 (conditional NDC)

Emissions per capita (tCO₂e per capita)



Emissions intensity of GDP (tCO₂e per US\$ 1,000)

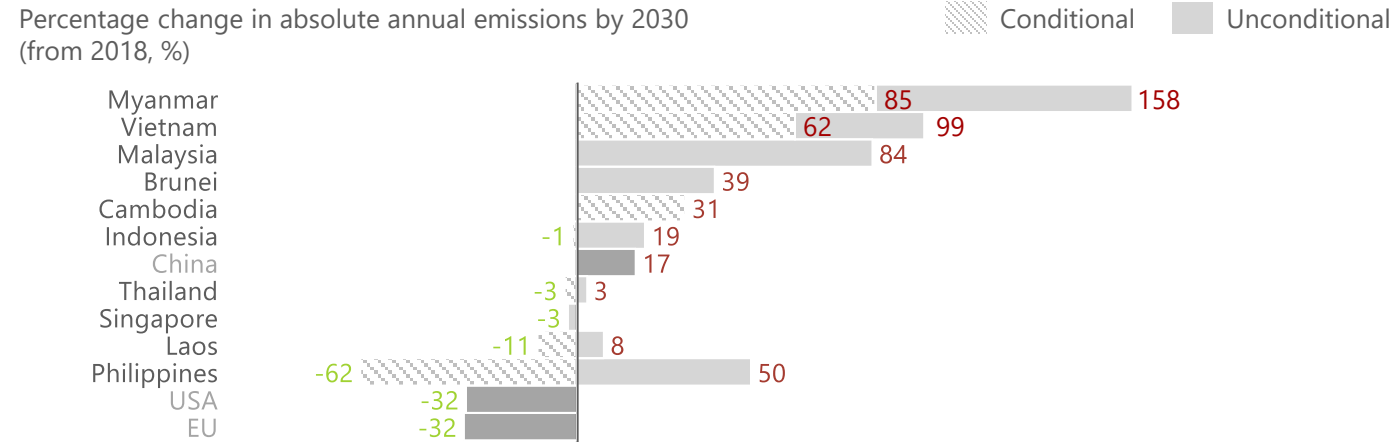


Notes: GDP at current prices used for Brunei, Cambodia, Laos and Myanmar, while GDP at constant prices (2010) used for the rest of countries listed

Sources: Bain analysis; EIU; Euromonitor; Climate Watch; Country NDCs

Compared with global benchmarks, SEA's climate ambitions appear modest

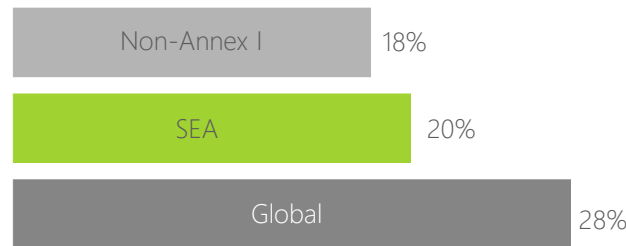
Most of SEA's latest NDC targets lead to an increase in annual emissions by 2030 in absolute terms



Notes: 1. Non-Annex I countries as categorized by United Nations Framework Convention on Climate Change (UNFCCC). Net Zero commitments do not consider targets under discussion; 2. SEA carbon price range based on carbon tax implemented or considered in Singapore (SG) and Indonesia (ID). European Union (EU), and United States (US), based on 2021 ETS prices from International Carbon Action Partnership (ICAP) as of June 2021. China prices based on debut price of National ETS in July 2021; 3. Emissions trading scheme; 4. Climate policy agenda of President Biden omits any mention of carbon pricing

SEA Net Zero commitments are in line with non-Annex I countries, but trail global average

Countries with Net Zero commitments,¹ percentage (%)



Prices of EU ETS are in line with Paris goals (high enough to trigger fuel switching)

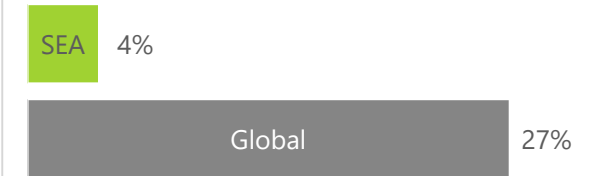
Regional carbon pricing is still insufficient

Price per tCO₂e²

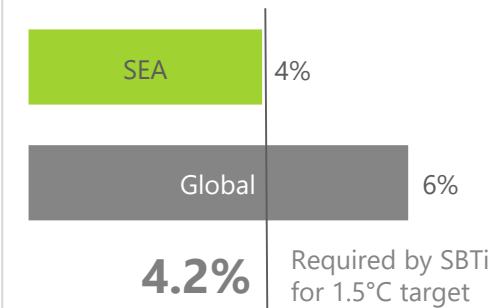
| | | |
|--|--------------|---|
| | \$4 - \$5 | 2 SEA countries have set or proposed a tax |
| | > \$7 | China national ETS ³ |
| | > \$18 | California Cap-and-Trade ⁴ |
| | > \$60 | EU ETS |
| | \$50 - \$100 | Range required by 2030 to be Paris 1.5°C compatible |

SEA corporates have been less ambitious relative to global peers

SBTi signatories as percentage of total market cap (%)



Average annual emissions reductions of SBTi companies since start year, percentage (%)



Scope 3 emissions footprints remain a challenge to measure and address globally, even among leading companies. There is urgent need for binding carbon-accounting and reporting standards

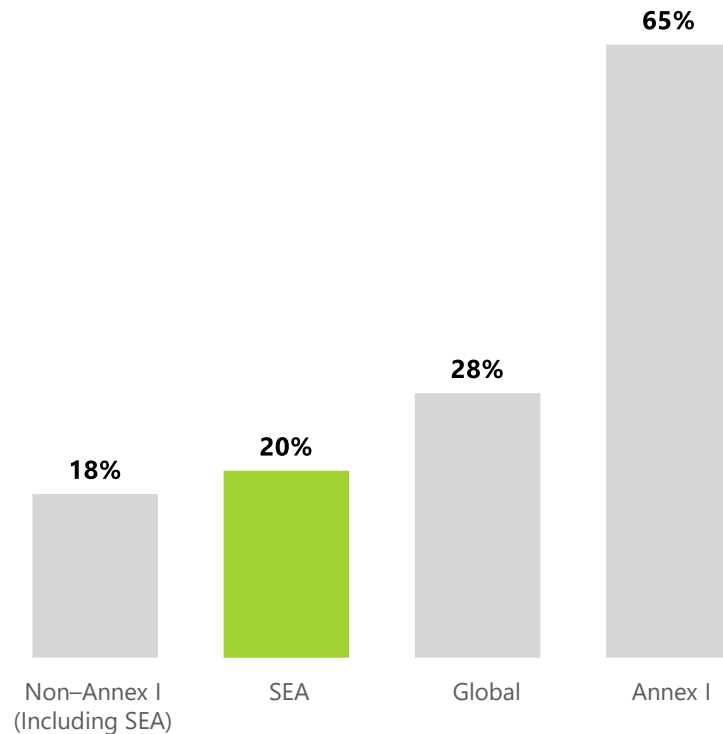
Sources: Bain analysis; IPCC; CAT; ECIU; Ember; Reuters; Reuters (2); SBTi

SEA countries are slightly ahead of other non-Annex I countries in proportion of Net Zero commitments but are trailing global average

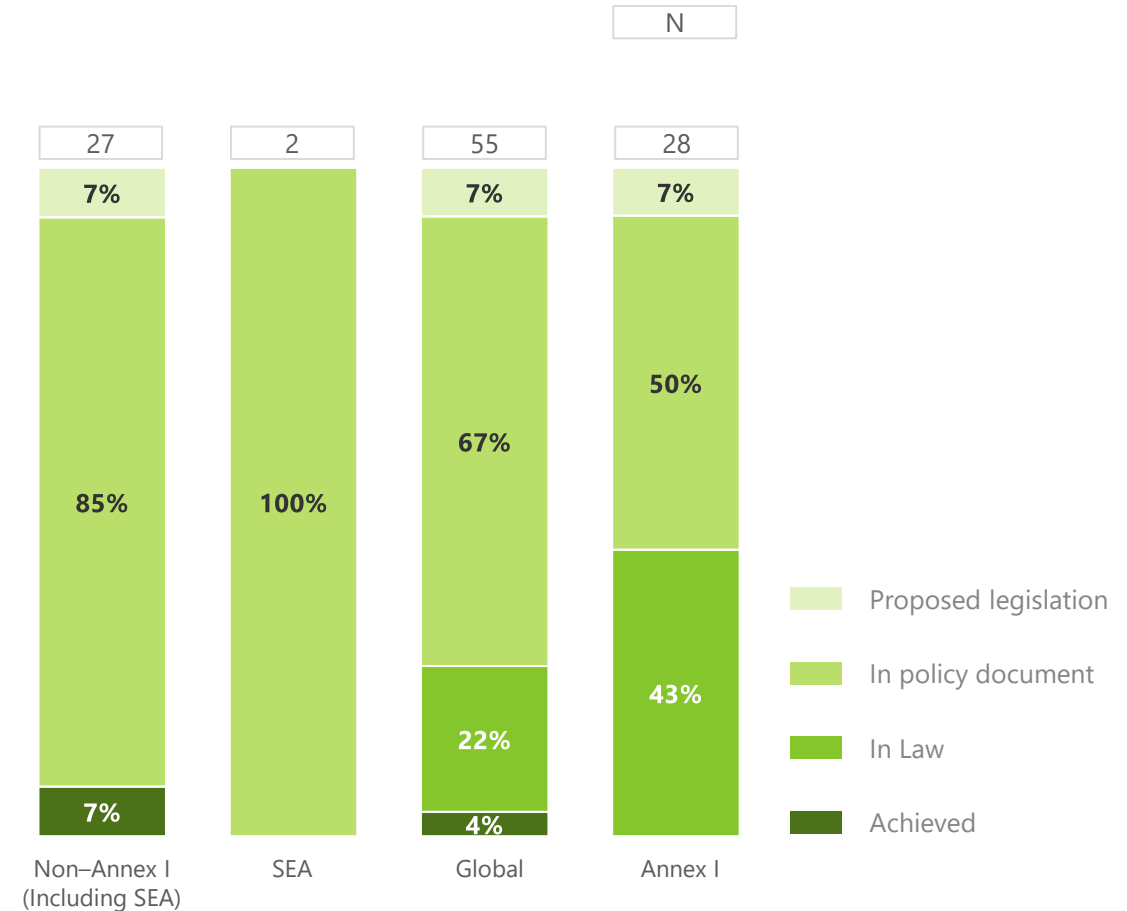
While SEA is on par with non-Annex I countries, more can be done to catch up globally

SEA countries with Net Zero commitments can push the envelop by committing their Net Zero targets to law

% of countries with Net Zero commitments¹



% in each stage of Net Zero commitments



Notes: 1. Net Zero commitments do not consider targets that are still under discussion

Sources: Bain analysis; ECIU; UNFCCC

01

ROAD TO NET ZERO

The plan for Net Zero must be crystallized – few SEA countries have all the elements of a robust plan

Unlike global benchmarks, most SEA countries **have not materially improved ambitions**, nor **set Net Zero targets**

SEA countries can strengthen their commitments by setting **absolute targets** and having **full sector coverage**

Elements of an effective Net Zero plan¹

Lacking Leading

Global benchmarks

Annex I

Non-Annex I

| | Brunei | Cambodia | Indonesia | Laos | Malaysia | Myanmar | Philippines | Singapore | Thailand | Vietnam | EU | USA | Colombia | China ² | Best-in-class |
|--|---------------|---------------|---------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|-----------------|-----------------|--------------------|-----------------|
| Improved ambition | Material | Slight | No | NA ³ | Slight | Material | Slight | No | No | No | Material | Material | Material | Slight | Material |
| Net Zero target year | No | No | 2060 | 2050 | No | No | No | No | No | No | 2050 | 2050 | 2050 | 2060 | Achieved |
| Legal status (Net Zero) | NA | NA | Policy Document | Policy Document | NA | NA | NA | NA | NA | NA | In Law | Policy Document | Policy Document | Policy Document | In Law |
| 2030 reduction target type | Relative | Relative | Relative | Relative | Intensity | Absolute | Relative | Absolute | Relative | Relative | Absolute | Absolute | Absolute | Intensity | Absolute |
| Coverage (sector and gases) | Partial | Partial | Partial | Partial | Complete | Incomplete | Partial | Complete | Partial | Partial | Complete | Complete | Partial | Partial | Complete |
| Conditionality | Unconditional | Conditional | Both | Unconditional | Unconditional | Both | Conditional | Unconditional | Both | Both | Unconditional | Unconditional | Unconditional | Unconditional | Unconditional |
| Intl. aviation and shipping ⁴ | Not specified | Not specified | Not specified | Not specified | Not specified | Not specified | Not specified | Not specified | Not specified | Not specified | Partial | Not specified | Not specified | Not specified | Full coverage |
| Use of removals outside borders | Limited | Not specified | Not specified | Intend to use | No | Not specified | Limited | No | Limited | Not specified | No | No | Intend to use | Not specified | No |
| Removal transparency | Partial | Not specified | Not specified | Not specified | Not specified | Partial | Not specified | Partial | Not specified | Partial | Partial | Partial | Partial | Not specified | Full |
| Review process (Net Zero) | NA | NA | Non-legally binding | Non-legally binding | NA | NA | NA | NA | NA | NA | Legally binding | Not specified | Not specified | Not specified | Legally binding |
| Pathway and measures | Limited | Quantified | Limited | Quantified | Limited | Quantified | Limited | Quantified | Limited | Limited | Limited ⁵ | Limited | Quantified | Not specified | Quantified |
| Consideration of fairness ⁶ | Included | Included | Included | Included | Included | Included | Included | Included | Included | Included | Included | Included | Included | Not included | Included |

Notes: 1. Elements adapted from Climate Action Tracker's Net Zero evaluation methodology and IPCC guidelines. None of the countries listed had separate reduction and removal targets; 2. China categorization based on latest NDC proposal at 2020 Climate Ambition Submit – latest NDC has yet to be officially submitted; 3. Not applicable as Laos' previous NDC targets not comparable with latest targets; 4. Intl. aviation and shipping refers to accounting of all emissions from intl. bunkers (beyond Carbon Offsetting and Reduction Scheme for International Aviation [CORSIA] and International Marine Organization [IMO]); 5. EU's ambitious "Fit for 55" package and plan has been proposed, but not yet submitted; 6. Based on whether latest NDCs include explanation on why targets are fair

Sources: IPCC; ECIU; Country NDCs; CAT; Bain analysis

SEA faces **specific conditions for change**SEA-specific nuances present multiple **challenges**

Reliance **on natural resource extraction** such as fossil fuels and forestry for livelihood of communities and workforce



Need **to balance transition with socioeconomic growth** while protecting jobs and livelihoods, with regional GDP forecasted to grow by 5.5% in 2021



Significant risk of **stranded assets** – for example, ~\$60 billion¹ in stranded value from coal assets in Indonesia, Vietnam, and the Philippines, which make up ~75%² of SEA's coal-power capacity



Diverse regional populations and socioeconomic needs as a loose federation of countries with uneven pattern of development across the region, unlike the EU



Challenge in **measuring carbon footprint** due to longer and more complex supply chains (small, geographically siloed suppliers such as smallholder farms)

Notes: 1. Estimated by CarbonTracker in 2018, using a cost-optimized asset-level methodology and scenario analysis which phases out coal power in a manner compatible with the temperature goal in the Paris Agreement;

2. Based on International Energy Agency (IEA) data for 2019

Sources: [Brunswick Group](#); [Carbon Tracker](#); [IEA](#); Industry interviews

Covid-19 presents significant challenges but could also be an opportunity to accelerate the transition

Many SEA countries and businesses are in survival mode due to Covid-19, with little attention or resources available to focus on sustainability

-7.8 % pt. reduction in overall SEA GDP growth in 2020 vs. forecasted

By country
(% pt.):



-14



-10



-10



-10



-7



-7



-6



-5



-5



-4

“ *Businesses are fighting their own **existential issues**. With cash flow suffering from Covid-19, **survival is the first order of business** - sustainability is not top of mind.*

Managing Director,
SEA investment group

However, the pandemic could also present a unique opportunity to jump-start the green economy:

Green recovery budgets

Position stimulus packages to fundamentally restructure the economy toward a low-carbon future

Fiscal measures promoting long-term sustainability vision

Provide industry bailouts conditional upon enhanced sustainability measures and KPIs¹ after the pandemic

Fossil fuel subsidy reforms

Reduce fossil fuel subsidies and reallocate spending to support players who are making the effort to transition to cleaner energy

Shift to digital

Piggyback on the economy-wide digitalization to enhance measures for resource efficiency and sustainability reporting

“ *(Pandemic) green recovery funds offer a **once-in-a-lifetime** opportunity to tackle climate change*

Christian Figueres,
Former U.N. climate chief

“ *Covid-19 has led many **SMEs to go digital**, which is a boost to carbon measuring and reporting*

SEA Government
Trade Department

Notes: 1. Key performance index

Sources: Business Times; IMF; Industry interviews

SMEs, who form ~40% of SEA GDP, are feeling the pressure but face resource constraints exacerbated by Covid-19

In SEA, SMEs account for:

~75% of total employment

~40% of total GDP

Rising awareness of sustainability among SMEs due to



Demand from customers looking to reduce their carbon footprint across the supply chain



Incentives from governments (e.g., grants) to adopt green technologies



Pressure **from private investors** trying to decarbonize their portfolios

However, **levels vary significantly**

“ Only **SMEs serving large MNCs will know** about environmental sustainability, the others (the majority) are **not aware**

SEA Country SME association leader

“ As scope 3 emissions become a larger goal for export partners, **SMEs will have no choice but to hop onto the bandwagon**

Senior manager, SEA Government agency

Most **SMEs are facing challenges** in making the shift



Covid-19 pandemic demanding urgent attention to **cash flow** with most fighting to stay afloat financially



Lack of sustainability **capabilities** and **know-how** in leadership/decision-making roles



Lack of (financial and human) resources to embark on capital-intensive transformations more generally



Difficulty in keeping up with **complex audit and compliance processes and rapidly evolving standards** (e.g., for green financing)

In the meantime, **pressure is only growing**

B

Regulators

6

Carbon pricing regimes implemented or under consideration as of 2021 in SEA

“ A **carbon price** that **starts low and rises steadily** could help Asian countries **reach their targets** under the Paris climate accord over the next decade

Head,
International Monetary Fund

Investors

57%

SEA investors are integrating sustainability into their investment thesis

“ **HNIs and family offices** are increasingly directing their capital flow to sustainable assets... and there are now **many more financial products** (beyond bonds) in the market, e.g., sustainability-linked loans

SEA Strategy Head,
International Banking Group

Consumers

80%

SEA consumers value sustainability and have made **greener lifestyle choices** in 2020

“ **[SEA] consumers are becoming more aware** – that's going to drive visibility and choice

Chief Procurement Officer,
Global Consumer Products Co

Employees

52%

Increase **in employee concern about environmental impact** in 2020 (global)

“ **Sense of purpose (in sustainability)** can be a rallying cry to unify the employees behind a common goal

THE BUSINESS TIMES

There is no reason for inaction – there is **significant upside** for SEA if we get it right

Significant **opportunities** present in SEA...



High-potential value in **protecting SEA's natural capital** such as forests, peatlands, and mangroves

Establish SEA as a **global leader** in supplying **high-quality carbon credits** to help accelerate decarbonization, preserve SEA's natural capital and generate socioeconomic co-benefits (e.g., cleaner air and water quality)



Abundant renewable energy resources such as geothermal, solar, and offshore wind – opportunity to scale capacity of low-carbon energy amid falling prices

Accelerate the transition by **removing regulatory hurdles, collaborating regionally, and leveraging decreasing costs** to scale capacity and establish new baseload energy source



Significant **infrastructure still to be developed**, especially in less developed countries (~\$2 trillion investment need over the next decade for the region's sustainable transition)

Leapfrog to development of sustainable infrastructure and practices with green construction, electrification, modern grids, etc.



Streamlined/top-down corporate structures position family-run businesses to play a pivotal role in SEA's sustainability transition

Accelerate adoption of **sustainability initiatives** by leveraging the inherent strategic advantages that SEA businesses possess



A generational shift is changing consumption habits, with the younger population being more cognizant of sustainability imperatives

Leverage shift to **conscious consumption** to catalyze change in purchasing habits as early movers have the potential to reap rewards



Opportunity to **accelerate R&D¹ and innovation** with increasing entrepreneurial spirit, willingness for cross-sector collaboration and capital interest in green opportunities

Propel SEA to the **forefront of sustainability innovation** to accelerate the region's Net Zero transition and build position on a global stage (e.g., as an alternative-protein hub)

...that are **ripe for action**

All actors in SEA need to come together to **capitalize on SEA's distinct advantages to drive the shift to a green economy**

Notes: 1. Research and development

Sources: Industry interviews; Bain analysis

Building blocks on SEA's Net Zero journey

Decarbonize



Energy transition

Address growing energy security and demand through cleaner sources



Valuing nature

Assign value to and protect the region's natural capital as carbon sinks and biodiversity banks



Agri-food system transformation

Empower smallholders to adopt sustainability while building out SEA as the alternative-protein hub



Others: Waste and industry emissions management

Leverage enablers



Voluntary carbon markets

Compensate for hard-to-abate emissions, scale decarbonization solutions by pricing carbon, and protect SEA's natural capital while leveraging its potential to serve global need and contributing to the region's socioeconomic development



Data and digital

Catalyze innovation and scale sustainability impact through the green data revolution

A range of levers available as we embark on our Net Zero journey

Decarbonizing SEA's heaviest-emitting sectors



Energy transition

Efficient production and design

Renewable energy generation

Alternative fuel

Grid modernization

Electrification

Carbon capture, utilization, and storage



Conservation and restoration

Avoided forest loss

Blue carbon ecosystem protection

Avoided peat impacts

Peat restoration

Reforestation and afforestation

Blue carbon ecosystem restoration

Natural forest management

Working land management



Agri-food system transformation

Sustainable production

Optimized protein mix and production

End-to-end traceability

Minimal food loss and waste

Dietary shift



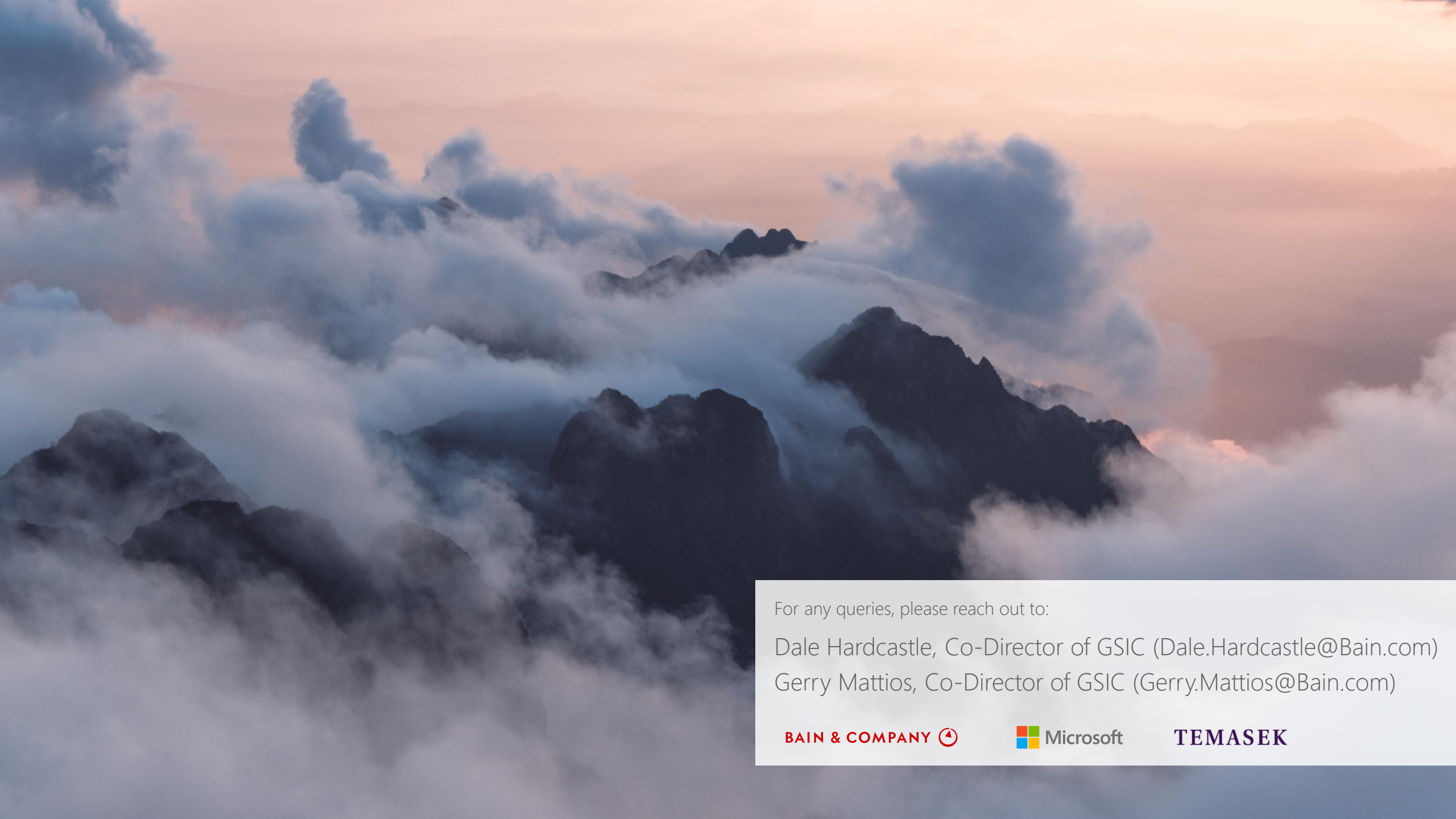
Waste and industry emissions management

Optimized production and consumption

Improved waste management

Reduced embodied carbon in construction

Reduced process-related emissions



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