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Chasing the Asia-Pacific green 'Just Transition' opportunity

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POLICY BRIEF

CONTENTS

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Introduction

Asia-Pacific economies stand at a critical juncture in outpacing the rest of the world in its green transition. China, as one example, "invested over USD 50 billion in new photovoltaic (PV) supply capacity—ten times more than Europe! It created more than 300 000 manufacturing jobs across the solar PV value chain since 2011", writes the International Energy Agency (IEA). As a result, in 2023, green industries contributed 40 per cent to China's Gross Domestic Product (GDP) growth with value added from these industries equal to the total GDP of Switzerland. Singapore's central bank (Monetary Authority of Singapore), meanwhile, is leading efforts to green the financial system and develop financial instruments to accelerate the phase-down of coal-fired power plants: In December 2023, it launched the Transition Credit Coalition (TRACTION) and two pilot projects in the region to finance early retirement of coal plants , as well as a new sustainable taxonomy to allow finance coal retirement under green finance considerations. Vietnam, on the other hand, launched its new Power Development Plan, (PDP8), which sets out clear policy and economic ambitions for a greener energy system.

Yet, a successful green transition in Asia Pacific is all but certain. Hopes for a green transition through the Just Energy Transition Mechanism (JETP) supported by Group of 7 (G7) countries in Vietnam and Indonesia, or similarly through the Energy Transition Mechanism under the Asian Development Bank (ADB) in countries including Pakistan mostly underdelivered. New coal-fired power plants are still being built across the region, for example, India plans to add 80 gigawatts (GW) by 2031, while China commissioned 47 GW in 2023.

Chasing the green-just transition opportunity in Asia Pacific requires decisionmakers in policy, business, and research to be bolder and more inclusive as well as to understand and develop solutions to sticky challenges both domestically and regionally.

Five issues stand out:

1. Energy transition and state-owned enterprises

Asia's energy demand is projected to increase by two-and-a-half times by 2050, driven by economic growth, population growth, and urbanisation. Already now, the region accounts for more than 60 per cent of global greenhouse gas emissions, mostly from energy. Most of the energy system, however, is controlled by state-owned enterprises with political and economic incentives to keep the status quo. What are the challenges for policymakers for the green energy transition to set incentives for both private investments in equipment manufacturing and electricity systems, and to address the behemoth of state-owned enterprises that control power systems across Asia based on fossil fuels?

2. Finance

Asia's emerging market and developing economies need investment of at least $1.1 trillion annually to meet climate mitigation and adaptation needs. This compares to current investments of about USD 330 million. How can financial systems become greener to mobilise more private capital, while particularly vulnerable countries (e.g., in the Pacific) can also secure more climate finance from international development finance organisations?

3. Biodiversity risks

By 2050, Asia is projected to experience the highest rates of habitat loss, primarily due to land clearing for agricultural purposes, which implies even higher human pressure on the environment. In Southeast Asia alone, up to 42 per cent of all species could be lost by the end of this century under a business-as-usual scenario. Not addressing biodiversity, puts 63 percent of Asia-Pacific GDP at risks, while nature-positive business opportunities could deliver USD 4.3 trillion of annual economic value and generate 232 million jobs in the region, according to a joint study by Singapore's state asset company Temasek, the World Economic Forum and AlphaBeta.

4. Climate-smart businesses

Corporations are facing increasing pressure to address climate change to reduce stranded asset risks as well as to expand corporate opportunities in the green economy. Some corporates have been leading and engaging in setting standards (e.g., through associations such as ASEAN or GFANZ). Others have boards that want to keep the status quo and risk not only undermining global climate goals but to undermining their fiduciary duty.

5. Just Transition

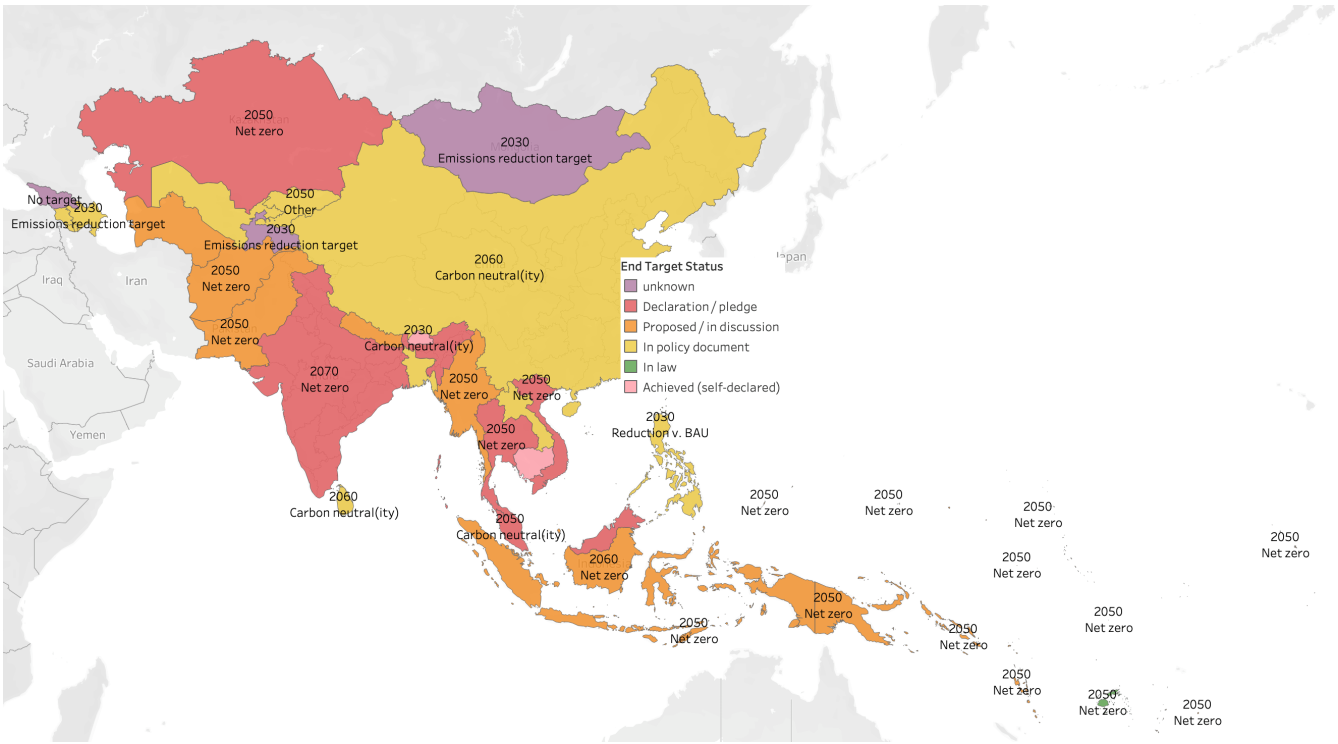
The fossil economy is currently a key source of employment, particularly among developing nations. Based on IEA's estimates, of the 8.4 million employed globally across the coal value chain, more than 80 per cent of these individuals are in Asia. The concept of a just transition in Asia must address the need to achieve net-zero targets and preservation of local biodiversity addressing issues such as job security and livelihoods

Energy transition policy and the role of state-owned enterprises in Asia

Most Asian and Pacific economies have set national climate ambitions through nationally determined contributions (NDCs) and policy commitments with net zero emission or carbon neutrality goals anchored in proposals, policy documents, and laws (see Figure 1)
The energy sector plays a vital role in achieving this transition and the energy systems across the Asia Pacific have traditionally been dependent on fossil fuels. In ASEAN economies, for example, 80-90 per cent of primary energy consumption was from coal. For a long time, green electricity additions have been slow and green energy share (solar) has increased only slightly to 2.1 per cent in 2021 through the addition of 40 TWh of capacity.
Conceptually, greening the energy sector requires a two-pronged approach: a much-accelerated phase-down of coal to reduce emissions and, simultaneously, a massive build-out of green energy including the necessary transmission and power storage facilities. This concept was generally agreed upon at COP28 in Dubai in 2023 with the commitment to triple the green energy installations. Practically, however, this continues to be difficult for various Asian economies, for three interrelated reasons:

1. Policy design and the role of SOEs: Energy markets in most countries across the world are highly regulated where planning, supply and demand, as well as the price of electricity, are partly determined by regulators. However, compared to most other global markets (even other emerging markets), energy markets in many

Figure 1: Climate commitments of ADB developing member countries



Source: Data sourced from Net Zero Tracker.

Asian economies have a peculiarity in that they are dominated by state-owned enterprises (SOEs). SOEs often dominate power generation and often monopolise power transmission and distribution in addition to oil and gas supply. SOEs often fulfil a dual mandate for social development and financial returns—governments as the SOE (State Owned Enterprises) owners, in return, regions are spending freely on providing subsidies. Asian fossil fuel subsidies increased rapidly since 2020 and were worth more than USD 4 trillion in 2022, which is more than half of the world's global fossil fuel subsidies, according to the IMF (International Monetary Fund). The government support for SOEs and the high market capture by SOEs in the region is a detriment to private companies to invest in a greener energy system. Apart from new government regulation, SOEs meanwhile have little financial incentive, no significant competition, nor any cost to keep on emitting due to the lack of significant carbon pricing that would force them to accelerate the energy transition. Any accelerated green energy transition threatens current business models and a write-down of existing assets in fossil fuels, such as coal-fired power plants (stranded asset risks). Similarly, policymakers have often little incentive to change the system, particularly in countries with strong national resource endowments in coal or gas (e.g., Indonesia, Pakistan) that bring tax revenues. Paired with the belief of many policymakers in the region that fossil fuel-based power systems are more reliable and affordable than renewables, an accelerated energy transition might get stuck. This might also explain the flip-flopping of various countries in the energy transition, such as Pakistan, which announced in 2020 to not build new coal-fired power plants under its old President, and yet continues to build new ones under new leadership.

2. Technology import dependence: Asia's green energy transition depends on technology (e.g., solar panels, distribution systems, power storage systems) imported from China. In solar, China controls 80 per cent of the global market. Few Asian excluding China countries have significant local manufacturing jobs in green energy (exceptions are, e.g., Vietnam, Malaysia and Indonesia with Chinese companies setting up factories there). Adding the need to build not only power generation plants but also significant upgrades to the transmission network and power storage systems, the current set-up is economically less attractive for many Asian countries than the current local economic value addition through fossil fuels, particularly if the country has fossil reserves in coal or gas creating stable local jobs. A technological solution particularly for smaller power grids microgrids (see Box 1).

3. Finance: The IEA estimates that about USD 190 billion investment per year is needed in Southeast Asian countries alone to reach the 1.5-degree target. While too many fingers point to the private sector for mobilising capital to finance the transition, the current power markets in many Asian economies allow for limited private sector engagement due to the strong role of SOEs – which makes private investors wary.

Box 1 | Early retirement of coal plants

ACEN has launched its Just Energy Transition (JET) Roadmap for the South Luzon Thermal Energy Corporation coal-fired power plant at COP28. Developed in partnership with the Coal Asset Transition Accelerator (CATA), the roadmap focuses on clean energy replacement, decommissioning, asset repurposing, community transition, worker reskilling, and continuous improvement. ACEN's CEO, Eric Francia, highlighted the importance of a proactive and inclusive transition process, setting a precedent for the industry in Asia. The collaboration with CATA aims to support a smooth transition away from coal while prioritising the well-being of workers and communities.

The partnership with CATA, consisting of Climate Smart Ventures, Carbon Trust, and Rocky Mountain Institute, signifies a global effort to accelerate the shift from coal to clean energy in a just and sustainable manner. ACEN's JET Roadmap sets a new standard for private power companies in Asia, showcasing innovative models for repurposing coal assets and ensuring a smooth transition for affected stakeholders. The initiative not only emphasises environmental benefits but also prioritises the holistic development of communities and workers, setting a replicable model for future coal-to-clean transitions globally.

Finance for a sustainable Asia Pacific

Asia's emerging market and developing economies need investment of at least $1.1 trillion annually to meet climate mitigation and adaptation needs. This compares to current investments of about USD 330 million making a massive mobilisation of resources urgently necessary. Earlier investments will allow for lower peak emissions and thus lower climate risks, while possibly creating more jobs (see Table 1).

However, with vast differences in their economic and institutional settings, Asia-Pacific economies have vastly diverse needs and access to climate finance (see Figure 2). Countries with no capital stock and dependence on fossil fuels but good economic development potential can be considered first movers (potentially Myanmar) and might access development finance and microfinance. Countries like Indonesia, meanwhile, could be categorised as fossil fuel extractor countries with high transition risks and the need for financial transfers to accelerate the green energy transition. Most Pacific islands would be considered climate-vulnerable countries with a high need for development finance. More developed Asian countries such as China, India, Thailand, Korea, and Singapore would be considered large current and future emitters with often strong domestic capital markets and the ability to mobilise all types of finance. These countries also often have more developed green capital markets to issue domestic green bonds (see Figure 3), partly even in domestic currencies. These countries are then also often leading in developing green finance taxonomies to spur more investors to invest

Table 1: Impacts of climate transition scenarios on Asia-Pacific economies

	Current Unconditional Net Zero (based on stated policy without international support)	**Net Zero 2050** (based on stated policies, with international support)	**Net Zero 2050** (cost optimised with international support)
Earliest year in which caron emissions peak in the Asia Pacific	2025	2022	2022
GDP impact relative to baseline	Peaking at +5.0% in 2033 +1.9% in 2060	Peaking at +6.3% in 2031 +1.8% in 2060	Peaking at +6.1% in 2031 +1.9% in 2060
Cumulative investment required	USD 53.1 trillion	USD 71.2 trillion	USD 69.0 trillion
Change to Asia-Pacific trade balance by 2060	+USD 782billion	+USD 824 billion	+USD 872 billion
Absolute Jobs impact	Peaking at +25.1 million in 2033 +11.0 million in 2060	Peaking at +36.5 million in 2032 +5.4 million in 2060	Peaking at +34.6 million in 2032 +5.3 million in 2060
Household energy cost impacts by 2060	-USD 261 billion	-USD 265 billion	-USD 270 billion

Source: Asia Society Policy Institute

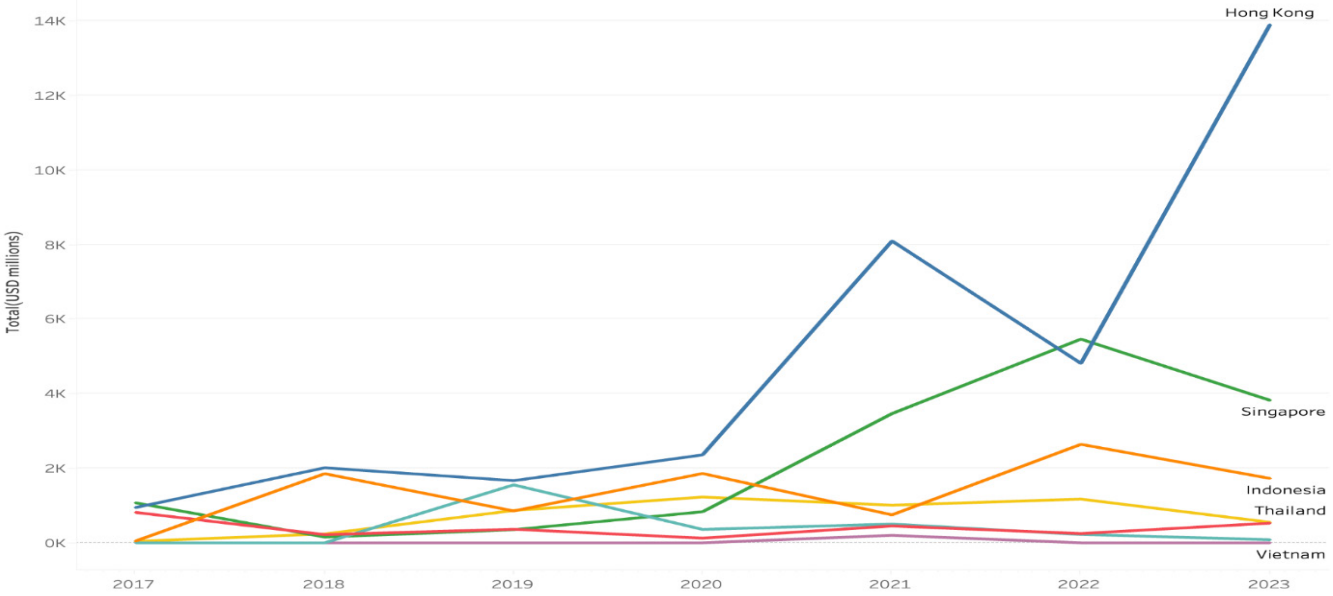
Figure 2: Types of Asia-Pacific economies and the need for climate finance

Source: Authors, extended from Gallagher et al, 2023.

in green. In 2023, for example, ASEAN economies agreed to a sustainable finance taxonomy that spurs green investment and allows financing of the retirement of coal plants (adopted further, for example, by the Monetary Authority of Singapore. In that vein, these countries were also leading efforts by the Glasgow Alliance for Net Zero (GFANZ), an alliance of global financial institutions, to develop guidelines for financing early coal retirement in the Asia Pacific.

Meanwhile, countries receiving overseas support, such as through JETP (e.g., Vietnam, Indonesia), have often struggled to make use of these support mechanisms, often due to foreign exchange rate issues that make use and repayment of any foreign currency-denominated loans challenging without foreign exchange (FX) insurance. Finally, countries without a significantly developed financial system, e.g., several Pacific islands, and high climate vulnerability are calling for new financing instruments to address their climate finance needs (in particular for adaptation), e.g., through the Bridgetown Initiative or new IMF resilience and sustainability facility , as well as through the reform of the Bretton Woods Institutions such as the World Bank to provide more climate financing to emerging economies, e.g., through guarantees.

Figure 3: Green bond issuances per year and Asian economy



Source: AsianBondsOnline, Asian Development Bank.

Biodiversity risks in the Asia Pacific

The Asia-Pacific region is home to 17 of the 36 global biodiversity hotspots rich in biodiversity, including coral reefs, tropical forests, and other ecosystems that provide essential resources such as food, clean water, and economic opportunities. About 200 million people in the region directly depend on nature for food, medicine, fuel, and other needs. However, biodiversity in the Asia Pacific is under threat from population growth, rapid industrialisation, and urbanisation, leading to environmental degradation and economic costs (see Figure 4).

In other words, business as usual is leading to irreparable damage to biodiversity and the ecosystem putting 63 per cent of gross domestic product (GDP) equivalent to USD 19.5 trillion in the Asia Pacific at risk (a higher proportion than the global average). Biodiversity risks also have "significant impacts on sovereign creditworthiness, default probability and the cost of capital" – particularly against the backdrop of improved environmental macroeconomic models.

To address biodiversity loss, economic activities that drive biodiversity loss need to be transformed. Apart from climate change, which contributes to 11-16 percent of biodiversity loss in the region, the following issues have been identified to drive biodiversity loss:

- food, land, and ocean use systems,
- infrastructure and built environment, and
- energy and extractive systems.

For example, Asian economies accounted for 45 per cent of global meat consumption already in 2019 which led to both significant climate emissions (meat consumption contributes to about 30 per cent of global GHG emissions) and biodiversity loss. Tropical regions in Southeast and South Asia are converting tropical rainforest to agricultural land to produce plant-based commodities such as coffee, tea, bananas, citrus fruits, palm oil, rubber, sugarcane, and grazing food for animal-based food production. Great opportunities exist in alternative protein production, urban farming, and higher efficiency agriculture. The study by Temasek and others found that addressing biodiversity loss in these three sectors alone could protect significant parts of biodiversity, while simultaneously generating economic opportunities worth USD 4.3 trillion annually and creating 232 million jobs.

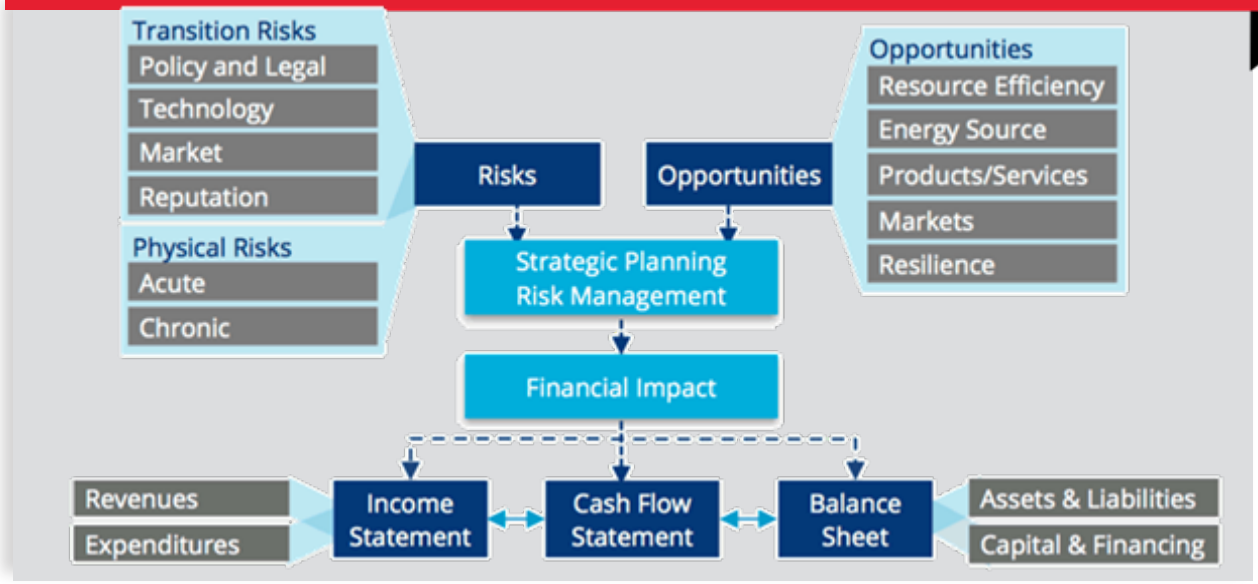
Box 2 | Alternative protein opportunities

Companies in the Asia Pacific have raised billions for alternative protein companies to reduce environmental impacts from animal husbandry while providing healthy food and employment. The Singapore-based company Next Gen Foods has developed a plant-based chicken replacement raised about USD 100 million in the largest ever Series A funding round in 2022. The Hong-Kong based alternative protein company OmniFoods – known for its plant-based pork products, is expanding its presence across the region. Similarly, coconut-based alternatives to yogurt provide growth opportunities, e.g., such as Coconut Palm Group Co. Ltd. (Chinese) or Coyo (Australian).

To rethink our growth model from exploiting nature and seeing biodiversity loss as a social externality in the economy, a whole society effort including policy makers, financial regulators, businesses, research and civil society need to take responsibility to not only change entrenched behaviours and interests (e.g., in regard to food consumption), but to create positive opportunities through pricing externalities, improved biodiversity reporting standards, green innovation (e.g., in alternative foods) and new financial mechanisms to reward and incentivise biodiversity protection.

Particularly in Asia-Pacific economies this can also include improving the use of nature as infrastructure to provide better climate adaptation means (e.g., through natural flood barriers through mangroves), which can also serve as mitigation means (e.g., through carbon sequestration and storage) and financial revenue models (e.g., through generation of carbon credits).

Box 3 | Climate-related risks, opportunities and financial impact



Climate-smart business

Business leaders and corporate boards in Asia-Pacific economies have a short window of opportunity left to shape the green transition and benefit as innovators or fast followers in a rapidly transitioning market.

In contrast, businesses not prepared for the accelerating changes are at risk of becoming stranded. A useful framework to understand and address climate risk is provided by the Task Force for Climate Related Financial Disclosures (TCFD). According to the framework, boards and corporate leaders in Asia-Pacific businesses need to take note of transition risks and physical risks and adjust their business models accordingly. As noted above, physical risks from climate change and biodiversity loss have been rapidly increasing in the region, for example due to increased floods, fires, and droughts impacting food supply chains, infrastructure, and assets (which might get destroyed). These risks, however, are not only localised: For example, changing rain patterns have more than halved the shipping capacity of the Panama Canal through which more than 6 per cent of global trade flows. This increases cost and time for more than 6 per cent of global trade particularly for trade routes between Asia, Pacific and North America.
On the policy and legal side, Asia-Pacific businesses must be on top of new disclosure regulations, not least through the International Sustainability Standards Board (ISSB) released in June 2023, but also through stronger ESG-related disclosure regulations across markets. At the same time, businesses following such disclosure and green transition pathways can unlock significant amounts of green finance from public investors, capital markets and financial institutions focused on ESG-aligned financing in line with green financial standards flourishing in the region (e.g., new sustainable finance standards have been published in Mongolia, Singapore, Indonesia, Philippines, Thailand, ASEAN, China and many other countries in the region). At the same time, regulatory standards across the world aiming to reduce emissions aim to hamper trade with high-polluting goods. As an example, the European Union's (EU) Carbon Border Adjustment Mechanism (CBAM) came into force in 2023 and will be fully operational in 2026 to reduce import of carbon-intense products, such as steel and price it at a carbon price like the EU (valued at around USD 80 per ton).

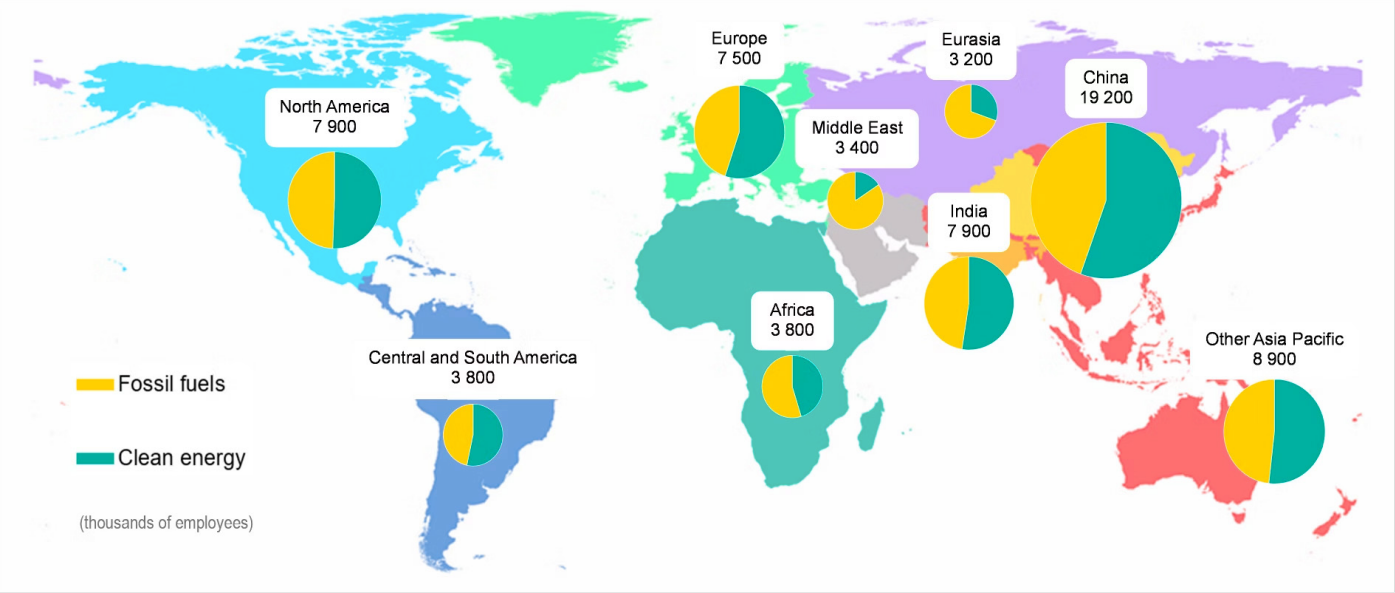
For example, exports worth USD 0.7 to 1.1 billion per year will be affected for each of the Southeast Asian countries Vietnam, Indonesia and Thailand , while Indian and Chinese exporters face even higher risks. While large companies exporting from the Asia Pacific into Europe obviously require strong carbon accounting for Scope 1, Scope 2, and Scope 3 emissions to comply with CBAM (and more stringent national regulations), also micro-, small- and medium-sized enterprises (MSMEs) will be indirectly affected by carbon accounting needs as they are part of broader supply chains that need to do a full supply chain carbon accounting.

A further risk for climate-smart businesses to consider come from increasing number of lawsuits due to climate change which have risen from less than 100 per year in 2015 to over 250 in 2022 often focusing on neglect by board of directors to address climate change risks in corporate strategy: While the majority of lawsuits are in the US, businesses in Asia-Pacific economies including Australia are becoming increasingly exposed to law suits from investors and others. Similarly, customers in Asia are increasingly holding businesses accountable for their sustainability impacts and choosing their brands according to the impact of the product on the environment.

Just transition

Asia is home to the world's fastest employment growth in the energy sector. About 36 million people across the Asia Pacific worked in the energy sector in 2019 (most of them in India and China) (see Figure 5). It is noteworthy that most workers in the region are already employed in the clean energy sector, e.g., in manufacturing of solar PV, new energy vehicles and others.

Nevertheless, just transition considerations are key when transforming Asia-Pacific economies to a green economic model, not only due to continued significant employment in the traditional sectors (e.g., coal mining) that might be at risk, but also due to secondary effects of the transition such as inclusion of MSMEs into supply chains affected by regulatory or business transitions as well as inclusive growth questions of equity (e.g., women seem disproportionately affected by climate change regulation impacting gender inequality, amongst others due to their "disproportionate responsibility for securing food, water" and thus working in areas affected by climate change).



Box 4: Transition Example in Asia

An example of the pathways to a just transition can be seen in Vietnam. Vietnam's coal reserves are concentrated in Quang Ninh province and the Red River Delta basin. There are now efforts to transition to a more sustainable economy, with a shift from brown to green industries and an increase in foreign direct investment in non-mining sectors in Quang Ninh. Furthermore, Vietnam has implemented policies and strategies for a just energy transition. One specific policy is the National Green Growth Strategy for 2021–2030, adopted in October 2021. The transition strategy also noted that there were low levels of employment related to the coal industry and that a great proportion of the economy is benefiting from investments in green-related industries.

Addressing these challenges requires a comprehensive approach that encompasses international collaboration, technological innovation, business transformation, effective government policies, and consideration of social equity. Governance of the transition is the key to economic, social, and environmental success.

Summary and recommendations

This paper examined five key challenges in the pursuit of a sustainable and equitable future for the Asia Pacific. To navigate the challenges and harness the opportunities, policymakers are urged to focus on strategic interventions in six critical areas.

Policymakers in the Asia Pacific are encouraged to implement regulatory frameworks that stimulate innovation and competition in the energy sector. The aim is to use the dominance of state-owned enterprises to pave the way for investments in green energy and drive a transformative shift in the regional energy landscape.

RECOMMENDATION 1

Accelerate the green energy transition in the Asia Pacific

1. Work under the assumption that state-owned enterprises (SOEs) will continue to play a significant role in the power sector across Asia. Greening state-owned power companies requires a different engagement strategy than aiming to convince private investors to set up new power facilities. Rather, it requires support in strategic and governance capacity development for SOEs including their ability to mobilise new equity and debt financing to invest in their green transition.

2. Provide avenues for structured early retirement of coal-fired power plants to accelerate emission reduction while simultaneously providing financing for renewable energy projects. This can be done through innovative financing instruments (such as a mix of refinancing, blended finance, carbon credits). Early coal plant retirement also needs to address just transition considerations (e.g., job loss) and technical impediments (e.g., are alternatives viable, what are the cost). This requires a more systematic analysis of coal plants than is currently available.

3. Provide incentives for indigenous manufacturing capacity development in the green energy sector, also to compensate for job losses in the fossil sector. International partners can provide financing and technical capacity to build local manufacturing and improve factor endowment (e.g., infrastructure, skills).

Bridging the financial gap for climate mitigation and adaptation demands innovative solutions bespoke to the specific needs of diverse types of economy in the Asia-Pacific region. Policymakers are recommended to craft policies that not only foster private capital mobilisation but also establish fruitful partnerships with international development finance organisations. This approach seeks to amplify financial resources, particularly in vulnerable countries, and propel the region towards its climate goals.

RECOMMENDATION 2

Address green finance gaps in the Asia Pacific

1. Utilise and expand existing green financial instrument use in more developed countries, such as green credits, green bonds. This might require a tweaking of specific incentives (e.g., central bank incentives for lower capital adequacy ratios for green financial instruments, such as in China and Indonesia), financial and technical support for green bond issuances (e.g., in Japan).

2. Improve trust of international investors in green financial instruments such as bonds and ESG funds by reducing greenwashing risks through standardised and timely disclosure regulations (e.g., through ISSB) and third-party verification. This requires expansion of skills and capacity with regulators, verifiers, and corporations.

3. Apply innovative green finance instruments and in particular development finance for countries with less developed capital markets and with higher needs for adaptation. This might include the use of guarantees to reduce foreign exchange risks, blended finance to reduce financing costs, environmental insurance, and default clauses to securitise climate and other environmental risks.

Integrating biodiversity into national economic models becomes paramount for sustaining the rich ecosystems of the Asia Pacific. Policymakers are advised to implement policies that value natural areas and biodiversity as national investments. Furthermore, fostering nature-based market programs with rigorous certification ensures sustainable production practices and addresses the urgent need to reverse biodiversity loss.

RECOMMENDATION 3

Address biodiversity risks in Asia-Pacific economies

1. Improve policy design in the region with three goals:
   a. Asian governments can support global biodiversity conservation by implementing national strategies as mandated by the Convention on Biological Diversity and the Nagoya Protocol.
   b. Enhancing company disclosure requirements to include environmental risks, using frameworks like TNFD or the Natural Capital Protocol, can boost transparency.

2. Expand funding for nature protection, e.g., through innovative financing instruments such as debt-for-nature swaps, blue/biodiversity bonds, as well as by using proceeds from carbon markets to fund nature-positive activities and by providing avenues for carbon offsets through nature-based solutions (e.g., coastal restoration). This requires strong policy design to avoid greenwashing and ensure the integrity of the underlying projects.

3. Price externalities of biodiversity loss based on regional needs to avoid further loss of biodiversity and to allow for local communities to benefit.

4. Improve business opportunities for nature-positive innovation by supporting innovation through investment in research and development, as well as regulatory support mechanisms (e.g., reduction of administrative hurdles for green foods).

Aligning corporate interests with environmental sustainability is pivotal. Policymakers should incentivise businesses to adopt circular economy principles and incorporate environmental, social, and governance (ESG) factors into decision-making. By doing so, businesses become catalysts for positive change, contributing to the broader climate goals and fostering a climate-smart business landscape. Not doing so means Asia becomes less competitive as ESG standards rise globally.

RECOMMENDATION 4

Address climate-smart business practices in Asia Pacific

1. Improve board leadership and corporate governance to include expertise in climate and biodiversity risks and opportunities driving business strategy and accountability of management.
2. Rapidly improve expertise in ESG and climate-related disclosure and risk management to reduce frictions and be prepared for upcoming domestic and international disclosure regulations (e.g. ISSB, CBAM). Ensure voluntary commitments and disclosures (e.g., through the Assess, Commit, Transform and Disclose—ACD-T framework) to share results and best practices.
3. Invest in green innovation within the corporation and the supply chain to reduce emissions (and nature impacts) and develop green products in line with customer, investor, and regulatory needs.
4. Provide stewardship and engagement for supply chains including MSMEs to ensure their participation in the green business and supply chain transformation.

Achieving a just transition necessitates a change in governance perspectives. Policymakers in the Asia Pacific are urged to integrate distributive and procedural justice elements into transition frameworks, ensuring fairness and inclusivity. Considering fair share principles and measuring socio-technical transition impacts become key strategies in steering the region towards a balanced and socially sustainable future. Transition risk planning should be localised to people who are impacted.

RECOMMENDATION 5

Address just transition considerations in the Asia Pacific

1. Labour-oriented concept: Focus on the labour-oriented concept of just transition to develop social protection programs for workers to manage the impact of energy and economic transitions on employment.

2. Integrated framework for justice: Just transition is an integration of many justice-related frameworks such as environmental, climate, and energy justice and needs to include distributive and procedural justice elements.

3. Country specific consideration of fair share: Identifying the fair share ranges for mitigation, based on agreed-upon principles defined by the United Nations Framework Convention on Climate Change can allow financing needs.

4. Measuring and forecasting socio-technical transition: Understanding the trajectory of technological change and its social implications is vital. Computational economic analysis of the distribution of social benefits and burdens of transition scenarios can identify leverage points in the transition process to ensure equity and social sustainability at a macro level.

5. Governance strategy and not a single policy: Framing transition as a governance strategy can guide policymakers in managing changes in the desired direction. It has been noted that authoritarianism in Asia focuses on high-level goals to achieve environmental goals (transition) without considering the more politically controversial concept of procedural justice for people affected.

6. Public engagement and perception: Policymakers should consider public engagement at the micro level to understand how different stakeholders are impacted by and perceive impacts. Such localised knowledge assists in developing policies that are more responsive to the needs and concerns of various groups affected by the transition.

7. Provide green skills and capacity: Focus on upskilling and reskilling initiatives to meet the increased demand for existing green jobs. Additionally, policymakers should create specialised training for direct green jobs and develop new educational pathways for emerging green jobs, involving curriculum development, vocational training, and collaboration with industries to address skill gaps effectively. These actions are crucial to foster a fair and inclusive transition, support the rise of a Green Collar workforce, and seize the potential of 180 million additional jobs in the green economy by 2050.

As the demand for green jobs rises, policymakers should proactively expand training programs. Recommendations include developing specialised training for jobs with evolving task profiles and creating educational pathways for emerging green jobs. Collaboration with industries becomes crucial to identify and bridge skill gaps effectively, ensuring a skilled workforce for the region's green transition.

These recommendations collectively form a strategic roadmap, guiding policymakers to enact targeted and impactful measures for a sustainable, inclusive, and environmentally responsible future in Asia.

Notes

1. Abdelilah et al., "Executive Summary – Solar PV Global Supply Chains – Analysis."
2. Myllyvirta, "Analysis."
3. Monetary Authority of Singapore (MAS), "Transition Credits."
4. Monetary Authority of Singapore (MAS), "MAS Launches Consultation on Coal Phase-Out Criteria under the Singapore-Asia Taxonomy."
5. Wengel, "Vietnam's Eight National Power Development Plan (PDP8) – Green Finance & Development Center."
6. Rachman, "Indonesia's JETP Energy Transition Is Running into Financial Problems."
7. Modi, "India to Add 80GW of Coal-Fired Capacity by 2031-32 | Argus Media."
8. Myllyvirta, "China Energy and Emissions Trends."
9. Basu and Lim, "Explainer."
10. Farhadinia et al., "Current Trends Suggest Most Asian Countries Are Unlikely to Meet Future Biodiversity Targets on Protected Areas."
11. Eurasia Group and Suntory, "Addressing Nature Loss in Asia."
12. Temasek, World Economic Forum, and AlphaBeta, "New Nature Economy: Asia's Next Wave."
13. Wetzer, Stuart-Smith, and Dibley, "Climate Risk Assessments Must Engage with the Law."
14. International Energy Agency (IEA), "Executive Summary – World Energy Employment 2023 – Analysis"; Monetary Authority of Singapore (MAS), "Transition Credits."
15. Net Zero Tracker, "Net Zero Tracker | Welcome."
16. Ritchie and Rosado, "Electricity Mix."
17. "Fossil Fuel Subsidies Surged to Record $7 Trillion."
18. White, "How China Cornered the Market for Clean Tech."
19. International Energy Agency (IEA), "Southeast Asia Energy Outlook 2022."
20. ACEN, "COP28."
21. Basu and Lim, "Explainer."
22. High Level-Policy Commission on Getting Asia to Net Zero, "Getting Asia to Net Zero."
23. ASEAN Taxonomy Board (ATB), "ASEAN Taxonomy for Sustainable Finance - Version 2."
24. Monetary Authority of Singapore (MAS), "MAS Launches Consultation on Coal Phase-Out Criteria under the Singapore-Asia Taxonomy."
25. GFANZ, "GFANZ's APAC Network Opens Consultation for Managed Phaseout of Coal in Asia-Pacific."
26. Gallagher et al., "Reforming Bretton Woods Institutions to Achieve Climate Change and Development Goals."
27. Yue and Nedopil, "Bridgetown Initiative."
28. International Monetary Fund (IMF), "The Resilience and Sustainability Facility (RSF)."
29. Gallagher et al., "Reforming Bretton Woods Institutions to Achieve Climate Change and Development Goals."
30. Yue and Nedopil, "Bridgetown Initiative."
31. United Nations Environment Assembly of the United Nations Environment Programme (UNEP), "Scientists Warn of Dangerous Decline in Asia-Pacific's Biodiversity."
32. WWF, Living Planet Report 2022 - Building a Nature-Positive Society.
33. Temasek, World Economic Forum, and AlphaBeta, "New Nature Economy: Asia's Next Wave."
34. Agarwala et al., "Nature Loss and Sovereign Credit Ratings."
35. Balasubramanian et al., "Asia's $5 Trillion Green Business Opportunity."
36. Xu et al., "Global Greenhouse Gas Emissions from Animal-Based Foods Are Twice Those of Plant-Based Foods."
37. Balasubramanian et al., "Asia's $5 Trillion Green Business Opportunity."
38. Good Food Institute APAC, "Alternative Proteins in APAC - 2023 State of the Industry Report."
39. Kopstad, "Largest ever funding round for plant-based meat."
40. Asian Infrastructure Investment Bank (AIIB), "Nature as Infrastructure."
41. The Economist, "Severe Drought Is Constraining the Panama Canal."
42. Task Force on Climate-Related Financial Disclosures (TCFD), "Recommendations of the Task Force on Climate-Related Financial Disclosure."
43. Several regulatory bodies in Asia have supported the development of ISSB, although there are currently no plans to mandate disclosure in alignment with ISSB standards in the region
44. Marquardt, "Trading-Off."

45. Shaw, "What Does the EU's Carbon Border Adjustment Mechanism Mean for Asian Economies?"
46. World Business Council for Sustainable Development (WBCSD), "Accelerating Carbon Accounting in Asia."
47. Wetzer, Stuart-Smith, and Dibley, "Climate Risk Assessments Must Engage with the Law."
48. World Economic Forum et al., "Accelerating Asia's Advantage: A Guide to Corporate Climate Action."
49. International Energy Agency (IEA), "Overview – World Energy Employment – Analysis."
50. International Energy Agency (IEA).
51. UN Women, "Explainer."
52. Anh and Nhien, "Just Transitions and Coal Power Phase Out in Vietnam."
53. Georgieva, Chamon, and Thakoor, "Swapping Debt for Climate or Nature Pledges Can Help Fund Resilience"; Nedopil, Yue, and Hughes, "Are Debt-for-Nature Swaps Scalable."
54. Nedopil, "Integrating Biodiversity into Financial Decision-making."
55. Capitals Coalition, "ACD-T: High Level Business Actions on Nature."
56. Hughes and Rescalvo, "Just Transition Beyond the Energy Sector"; International Labor Organization (ILO), "A Just Energy Transition in Southeast Asia"; Wang and Lo, "Just Transition."
57. 004062228270/p1723000e5e0d20908c790a5ffdda147f1.

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