ECONOMIC AND SOCIAL SURVEY OF ASIA AND THE PACIFIC 2026

Socioeconomic prosperity amid the transition to an environmentally sustainable economy

ESCAP
Economic and Social Commission for Asia and the Pacific

The shaded areas of the map indicate ESCAP members and associate members.*

ESCAP member States and associate members

The Economic and Social Commission for Asia and the Pacific (ESCAP) is the most inclusive intergovernmental platform in the Asia-Pacific region. The Commission promotes cooperation among its 53 member States** and 9 associate members in pursuit of solutions to sustainable development challenges. ESCAP is one of the five regional commissions of the United Nations.

The ESCAP secretariat supports inclusive, resilient and sustainable development in the region by generating action-oriented knowledge, and by providing technical assistance and capacity-building services in support of national development objectives, regional agreements and the implementation of the 2030 Agenda for Sustainable Development.

The Commission promotes cooperation among its

53 member States

9 associate members

* *The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.*

** *By diplomatic note dated 30 January 2026, the United States of America notified the Executive Secretary of ESCAP of its decision to withdraw from the Commission.*

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Foreword

The Asia and the Pacific region has long been a global growth engine, marked by economic resilience, steady growth prospects and innovative economies.

But significant external risks loom on the horizon, including rising trade protectionism, global supply chain fragmentation, slowing consumer demand, constrained government budgets and the continued effects of conflicts and unchecked climate change.

In the face of these headwinds, the *Economic and Social Survey of Asia and the Pacific 2026* highlights the tremendous potential of the energy transition. This transition can help countries of the region meet their energy security and climate ambitions. It can also unlock new sources of growth, create new jobs, expand prosperity and build more resilient and inclusive economies.

Making the most of this opportunity requires policies and investments that build on the region's remarkable progress on renewable energy in recent years.

This *Survey* includes options and approaches to reduce reliance on fossil fuels, boost renewable energy and ultimately benefit households, businesses and governments.

This is especially critical today, as we witness in real time the effects of a dependence on fossil fuels, where every conflict risks sending shockwaves through the global economy. Homegrown renewable energy provides a secure exit plan for countries to escape this trap.

Guided by the ideas and information contained in this *Survey*, countries across Asia and the Pacific can seize this moment to accelerate the transition towards sustainable energy systems and forge a future of stability, prosperity and sustainability for people and planet.

António Guterres
Secretary-General of the United Nations

Preface

The economies of Asia and the Pacific remain vibrant and continue to drive global economic growth. Millions have been lifted from poverty, and the region has become a major global manufacturing hub. Innovation and technological advancement have also flourished.

The development prospects of the region, however, are becoming more complex. Policymakers are navigating rising global trade protectionism, economic policy uncertainty and geoeconomic fragmentation. Their eventual impact would be disproportionate for countries with smaller room for policy support and for people having limited access to social protection.

Beyond these economic developments, various structural transformations are reshaping the region's future. Among the most significant is the transition to an environmentally sustainable economy, particularly the shift towards clean and renewable energy.

The energy transition is not solely a technological shift or an environmental commitment. It carries far-reaching economic and social implications. Energy choices influence living costs, jobs, enterprise competitiveness and public finances. As economies go through the transition, new sectors will emerge while some industries and communities can face disruption. How these changes are pursued and managed will affect long-term economic growth potential and broader socioeconomic progress.

Countries across the region are approaching the energy transition from diverse starting points. Some focus on reducing reliance on fossil-fuel based economic activity and boosting supply of clean and renewable energy, while others seek to lift energy efficiency or expand energy access. Institutional capacity, financial systems and technological readiness also vary widely.

This 2026 edition of the *Economic and Social Survey of Asia and the Pacific* underscores that the transition to an environmentally sustainable economy, with a focus on the energy transition, must reinforce broader development objectives such as macroeconomic stability, sustained economic growth and people's well-being. Policies that advance environmental goals and climate ambitions without fostering socioeconomic prosperity are unlikely to endure.

The transition involves trade-offs. Short-term pressures may arise even when reforms reduce longer-term vulnerabilities. Coherence across policy domains is essential so that economic activity continues uninterrupted, workers are equipped with relevant skills, vulnerable people are protected during the adjustment, and the adoption of pertinent technologies is encouraged. Effective policymaking requires credible institutions, careful sequencing and attention to distributional impacts.

The diversity of Asia and the Pacific means that there is no single transition pathway applicable to all countries. Through structured analysis and comparative perspectives, this *Survey* supports governments in identifying and formulating tailored transition strategies that are both effective and feasible.

The *Survey* also discusses how to translate policy options into policy actions, using insights from political economy and behavioural science. Through a political economy lens, building legitimacy for the transition and creating new beneficiaries

help build and sustain reform momentum. From a behavioural science perspective, many practical, low-cost nudges can increase policy uptake by consumers, firms and investors.

The coming years will be decisive. By aligning environmental and climate ambitions with socioeconomic prosperity, the region can transform structural change into renewed dynamism and secure shared prosperity for present and future generations.

Regional cooperation will be essential for navigating a rapidly evolving global economic environment and pursuing socioeconomic prosperity amid the energy transition. Increased connectivity, exchange of experiences and collective voices will help amplify the positive development impacts of national policy efforts.

The ESCAP secretariat will continue to serve as a platform for evidence-based policy exchanges and collaboration, supporting member States as they integrate long-term sustainability into development strategies that reflect national realities.

Armida Salsiah Alisjahbana
Under-Secretary-General of the United Nations
and Executive Secretary of ESCAP

Photo: adobe stock/Shutter2U

Executive summary

Navigating rising global economic protectionism and the recent conflict in the Middle East while pursuing long-term economic prosperity for all

Asian and Pacific economies have fared better than market expectations, but several risks lie ahead

Average economic growth in Asian and Pacific developing countries moderated to 4.6% in 2025 from 4.8% in 2024 and 5.3% in 2023. Despite the slowdown, the region still grew faster than other developing regions of the world and performed better than most analysts anticipated amid rising global trade protectionism and economic uncertainty. Strong goods exports underpinned by frontloading ahead of the tariff hikes by the United States of America and robust demand for high-technology items, together with steady consumer spending on the back of stable employment growth, lower inflation and fiscal stimuli drove the overall economic expansion.

Going forward, the average economic growth in 2026 is projected to decline further to 4.0%. This assumes that the recent conflict in the Middle East will not last more than a few months and that there will be a partial de-escalation and an easing of tensions later in 2026. If this turns out to be the case, the average economic growth may inch up to 4.3% in 2027. Under the alternative scenario of a prolonged conflict, economic growth could be notably lower than currently projected while inflation would be higher. Under this scenario, a surge in commodity prices and freight costs, as well as supply chain disruptions, will spike inflation and interest rates; weaker global demand will dampen merchandise exports, remittances and tourism; and subsequent job losses and plunging market sentiment will hurt consumer spending, business investment and economic growth. Meanwhile, the room for additional fiscal support has shrunk given high public debt levels and debt servicing burdens in many countries. Three major downside risks are: the further intensification of the recent conflict in the Middle East; the renewed escalation of global trade tensions; and global financial volatility driven by a sharp downgrade in the currently upbeat global prospects of high-technology sectors.

Headline numbers mask an uneven economic situation across this vast and diverse region

Encouragingly, extreme poverty in the region declined to a new low in 2025, supported by steady economic growth, higher inflation-adjusted wage levels and continued government assistance. Yet, disparities in socioeconomic performance are notable across countries and population groups. The economies of the least developed countries have grown more slowly than their regional peers. In many economies, manufacturing employment has not yet recovered from pre-pandemic levels while that in information services has surged. Similarly, the youth unemployment rate stayed above the overall rate. The impact of the increase in trade protectionism and the recent conflict in the Middle East will disproportionally hurt female workers, who are the backbone of labour-intensive, export-oriented industries, as well as informal workers, who have limited access to social protection.

Proactive policymaking focused on strengthening domestic and regional sources of demand provides a way forward

Proactive, coordinated and innovative economic policymaking is needed to navigate unusually high levels of global economic uncertainty and a context marked by a retreat of multilateralism and the rules-based economic order and by an increase in conflict. In rebuilding the fiscal space, fiscal authorities should adopt a package of quick-win policies that support vulnerable population groups. Prioritizing low-income groups and young people in broad fiscal stimulus measures is one example of such policies. Central banks pursuing monetary policy will need to strike a difficult balance to manage inflation and address threats to financial and external stability.

While the region has long benefited from globalization, the rise in trade protectionism, geoeconomic fragmentation and the recent conflict in the Middle East could hold back development progress in Asia and the Pacific. Among others, increased global policy uncertainty has exacerbated regional supply chain risks, while production overcapacity could continue in some countries as they boost investment to gain technological independence.

In this context, a transition to an increasingly demand-led economic growth model, supported by both domestic and regional sources, can provide a way forward. This requires actions in several areas, such as enhancing economy-wide productivity, improving workers' skills and the quality of jobs, expanding social protection to ensure basic income security, fostering digital and infrastructure connectivity, and easing financial and market access. Regional cooperation can amplify the development impacts of national actions in these areas, such as increased interoperability of digital payment systems and portability of social security benefits for migrant workers. Greater openness and regional cooperation can also foster regional value chain integration, enabling investment flows and job creation.

Fostering socioeconomic prosperity amid a transition to an environmentally sustainable economy

A successful transition would need to simultaneously ensure macroeconomic stability, sustained economic growth and people's well-being

Beyond navigating the socioeconomic challenges highlighted above, Asian and Pacific developing countries also need to step up efforts to meet their environmental and climate ambitions. From an economic standpoint, this is important because environmental and climate factors impact socioeconomic prosperity in a complex and multifaceted manner. In the context of a less enabling global economic environment, prospects of slower economic growth and uneven within-country development progress, how the region can foster socioeconomic prosperity amid a transition to an environmentally sustainable economy is thus an important question.

The analysis and policy messages in this year's *Survey* are based on the premise that such a transition will only succeed if it benefits households, businesses and governments – whether in the form of new job opportunities, increased productivity, improved energy access, affordability and mix, or lower climate-induced fiscal risks. Any effort to pursue climate and environmental goals that is not accompanied by socioeconomic prosperity is unlikely to succeed. In this context, socioeconomic prosperity comprises three dimensions: macroeconomic stability (including inflation and financial stability and fiscal sustainability), sustained economic growth (such as through increased productivity) and people's well-being (including decent job prospects, poverty eradication and decreasing inequalities).

While the transition to an environmentally sustainable economy is vast in nature, the 2026 *Survey* focuses on a shift in the energy sector away from fossil fuels towards clean and renewable energy. Energy underpins most economic activities, while Sustainable Development Goal 7 on affordable and clean energy is a critical enabler for achieving other Goals. However, the energy sector accounts for 75% of the region's greenhouse gas emissions, while the share of fossil fuels in the primary energy supply is projected to rise further. A reversal of this trend, therefore, is central for the transition towards an environmentally sustainable economy. Such a transition should be gradual, calculated and consultative, taking into account the pace of technological progress and availability of resources.

Economic policies to promote socioeconomic prosperity amid the energy transition

Covering 45 Asian and Pacific developing countries with available data, analysis on policy options that promote both socioeconomic prosperity and the energy transition outlines a three-step approach. First, identify national priority policy goals for the transition. Second, come up with policy options that support the respective goals and duly examine their socioeconomic implications. Third, assess the feasibility of implementing the identified policy options.

Step 1: identifying priority energy transition goals

Countries will first need to identify what matters most in achieving the energy transition in their national context. The 2026 *Survey* highlights four goals: (i) reduce reliance on fossil fuels; (ii) boost clean and renewable energy; (iii) improve energy efficiency; and (iv) ensure universal access to modern energy services. Informed by a new threshold analysis, the report shows that most Asian and Pacific countries need to pursue multiple goals. For example, the first three goals above should be a priority in up to eight countries in the region, as fossil fuels account for more than 75% of total energy supply, renewable energy constitutes less than 30% of total electricity generation, and the energy needed per unit of output exceeds the regional average in these countries.

Step 2: balancing energy transition and socioeconomic prosperity

Once countries have identified the priority transition goals, they should consider a package of fiscal, monetary and financial policy options that support the respective goal(s) and assess the implications of these policies on macroeconomic stability, economic growth and people's well-being.

Undertaking such an assessment, the 2026 *Survey* finds that trade-offs of various types, levels and magnitudes as well as across time horizons emerge. Take the example of steep cuts in oil price subsidies to reduce a country's reliance on fossil fuels. For macroeconomic stability, such cuts promote fiscal sustainability through a smaller fiscal burden as well as external balance stability through reduced exposure to oil price shocks. However, it risks price stability through higher inflation as well as financial stability through stranded assets. For economic growth, near-term performance could be held back due to weaker household consumption amid higher inflation and interest rates, but long-term growth potential could be lifted due to higher productivity from clean-technology innovation, freed-up public investment in development and a healthier workforce amid better air quality. For people's well-being, job losses due to eroded export competitiveness can increase poverty. Disruptions in carbon-heavy industries and

disproportional impacts of higher utility prices on poorer households can widen income inequality. Using fiscal savings to support people and businesses can help reduce these transition costs, although the fiscal gains from subsidy cuts will be smaller.

Step 3: assessing feasibility of policy options

Once policymakers have reached a "wish list" of policy options that help balance socioeconomic prosperity and the energy transition, they will need to evaluate a country's capacity to roll out these options. The report assesses such capacity across four dimensions: fiscal space, monetary and financial conditions, institutional capacity and technological capacity. Countries that are deemed to have stronger capacity typically have (i) larger tax revenues relative to economic output; (ii) smaller government interest payments relative to government revenue; (iii) lower and less volatile inflation; (iv) a deeper and more efficient financial sector; (v) stronger ability to collect and verify data and formulate enabling policies and regulations; and (vi) stronger capacity to develop frontier technologies and secure patents on climate and energy-related technologies.

Putting together an effective and feasible policy package

Taken together, the assessments of priority transition goals, policy options and feasibility lead to the identification of distinct country groups. This outcome reflects the diversity of economic and energy systems, macroeconomic conditions and development levels among Asian and Pacific countries. Some country groups are highlighted to illustrate how this three-step thinking framework can be used to inform national economic policies to support both socioeconomic prosperity and the energy transition.

For example, boosting clean and renewable energy and increasing energy efficiency are considered as priority transition goals for one of the country groups. Most countries in this group demonstrate favourable implementation conditions across all four dimensions. Given that they have some fiscal space, tax incentives can be provided to develop clean-technology industries, foster innovation and adopt energy-efficient technologies. Likewise, with some financial depth, countries in this group can explore more sophisticated financing instruments, such as sustainable bonds and energy efficiency-linked loans.

As another example, improving households' access to modern energy services is considered a priority transition goal for another country group. However, implementation feasibility is limited for these countries across all four dimensions. As countries in this group strive to build domestic capacity, they will need additional international support, such as financial grants and transfers of green technologies to enhance energy access.

Turning policy options into action – insights from political economy and behavioural science

Even when policymakers have at hand a policy package that is deemed feasible from the fiscal, monetary, financial, institutional and technological perspectives, its implementation is not automatic. The 2026 *Survey* goes beyond proposing an analytical framework to establish which policies should be adopted and discusses how they can be implemented successfully. The focus is on leveraging insights from political economy and behavioural science.

A clear understanding of the vested interests of the state, market and society, the evolving balance of power and institutional arrangements can help governments build coalitions and deliver long-lasting reforms

An energy transition redistributes rents and subsidies, reshapes investment patterns and challenges incumbent carbon-heavy industries. This sometimes results in societal and political resistance. Based on a framework which maps key stakeholders, identifies their objectives and situates these within broader context, the report highlights several political economy challenges of the energy transition in the context of the Asia-Pacific region.

First, under political survival pressures, many energy transition plans have been abandoned to avoid electoral backlash. Second, government coordination is often fragmented, with ministries in charge of finance, energy, climate and industrial development having different, sometimes conflicting, objectives, such as fiscal sustainability, energy affordability and carbon emissions reduction. Third, while seeking to deliver their mandates such as stable financial performance, powerful state-owned enterprises have delayed the transition through "lock-ins" where business contracts and infrastructure investments result in long-term dependence on fossil fuel. Fourth, a top-down approach to formulating energy transition plans results in justice deficits and opposition by communities. Finally, because of international asymmetries, reliance on international climate finance has led to fiscal volatility while dependence on foreign technologies limits the ability of developing countries to shape their own transition pathways.

To overcome political economy challenges, governments should build legitimacy for the energy transition, align the timing of reforms with political cycles, and consolidate the momentum by creating new beneficiaries

To sequence actions that can address these challenges, the *Survey* 2026 adopts a *build-align-consolidate* framework. Governments must first build the legitimacy and foundation for transition by establishing and empowering a central coordination mechanism to steer transition implementation and mediate inter-agency disputes; institutionalizing dialogue with local governments, unions, civil society and communities; localizing the energy transition, for example, through solar mini-grids managed by indigenous groups; and repurposing state-owned enterprises with decarbonization as one of the core mandates. Together, these actions create early reform momentum.

As the transition progresses, governments should align the timing of reforms with the domestic political cycle and manage distributional effects. This includes timing politically sensitive measures when governments have strong political capital, such as right after elections; deploying automatic and legally binding compensation mechanisms; and reframing public narratives around tangible co-benefits, such as fairness and energy sovereignty. Finally, to consolidate the reform momentum, governments should anchor climate objectives within broader structural economic transformation, such as fostering clean-technology sectors to create new beneficiaries who will have a substantial stake in enduring reforms.

Understanding human behaviour is important to improve policy uptake

Uptake of public policies by consumers, firms and investors is often below the government's expectations even when information, incentives and regulations are in place. This "last mile" challenge arises because individuals' responses to policy measures are shaped by cognitive biases, habits, limited attention, social norms and sense of fairness. For example, consumers may shy away from cost-competitive electric vehicles if they are not the social norm. Many investors are skeptical of green finance instruments because they distrust unconventional products.

By understanding behavioural tendencies, nudges offer a practical, low-cost way to improve policy uptake. For consumers, governments can make renewable energy-based electricity tariffs the default option to benefit from the human tendency for inertia. For firms, peer benchmarking and simplified information can increase the adoption of low-carbon technologies. For investors, framing environmentally sustainable assets as forward-looking investment strategies can reduce the status quo bias and short-termism. More broadly, public support for a carbon tax is greater when the use of additional fiscal revenues is considered socially fair.

Despite these benefits, it is important to recognize that behavioural approaches are most valuable when used to strengthen implementation rather than replacing core policy tools. Clear safeguards are also needed to ensure that such interventions remain transparent, fair and respectful of people's autonomy.

Moving forward

The socioeconomic outcomes of a transition to an environmentally sustainable economy would depend on which policy instruments are chosen and how they are combined, sequenced and paced over time. The 2026 *Survey* shows that the role of macroeconomic policies is largely missing in the nationally determined contributions submitted by Asian and Pacific countries. While almost 90% of these documents mention “gross domestic product”, only 12% refer to “fiscal policy” and none to “monetary policy.”

As the region seeks to integrate socioeconomic prosperity into their transition plans, the ESCAP secretariat can support its member States in this endeavour. For instance, it can work with policymakers to refine and conduct country-tailored analyses on how to implement economic policy options that simultaneously pursue socioeconomic prosperity and promote energy transition. Regional dialogues and cooperation that dive deeper into policy issues examined in this report, such as how to boost regional and domestic demand amid a more fragmented global economy, would benefit many developing countries of the region.

Photo: adobe stock/Kornkanok

Infographics

Key question:

Amid a difficult **global economic environment** and **a changing development landscape** in Asia and the Pacific…

…how can the region foster socioeconomic prosperity **while** advancing the transition to an environmentally sustainable economy?

1 Identifying desirable policy options

Transition policies need to be good for:

- Macroeconomic stability
- Economic growth
- People's well-being

2 Realizing desirable policy options

- Increase policy space and institutional quality
- Leverage political economy for long-lasting reform momentum
- Increase policy uptake through behavioural nudges
- Enhance multilateral cooperation to amplify national policy efforts

Macroeconomic prospects, challenges and policies

Rising global trade protectionism and fragmentation will have wide-ranging socioeconomic implications

Export and economic slowdown

Employment and wage losses

Lower government revenues

Loan losses and financial instability

Productivity decline

Increased poverty

Greater inequality

The economic outlook is subject to several downside risks

Further escalation of geopolitical tensions and conflicts

Increase in trade and policy uncertainty

Global financial volatility

Retreat of multilateralism and the rules-based global economic order

Proactive, coordinated and innovative economic policymaking is required to navigate the unusually high uncertainty and a fragmented global economy

Quick-win fiscal boost that supports vulnerable people

Rebuild fiscal space

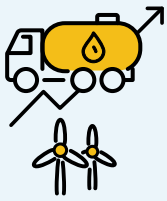
Ensure inflation stability while monitoring external and financial stability risks

Boost domestic and regional sources of demand

- Enhance economy-wide productivity
- Improve workers' skills and job quality
- Expand social protection and promote long-term savings
- Foster digital and infrastructure connectivity
- Ease financial and market access

Transition to an environmentally sustainable economy: potential pathways and macroeconomic impacts

State of decarbonization



Fossil fuels dominate the energy mix in the region, with carbon emissions doubling since 2000 despite strong renewables growth

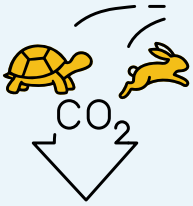
Renewable energy has become cost-competitive but **critical mineral and labour shortages** and **limited financing** hold back decarbonization

Emissions intensity has declined, offering optimism for net-zero transition

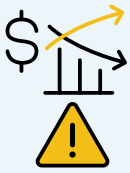
Decarbonization pathways

Decarbonization pathways must be gradual, calculated and consultative, balancing transition objectives with socioeconomic prosperity

Potential macroeconomic impacts



Gradual decarbonization pathways minimize macroeconomic disruptions but delay environmental benefits, while rapid decarbonization risks economic slowdown and job losses



Inflation, debt and financial stability could be adversely affected due to transition policies, declining fossil revenues and asset stranding, requiring careful planning

Policy implications

Market mechanisms can be the basis of decarbonization policies but must be supported by state intervention where markets are inefficient

Carbon taxes need efficient recycling of their fiscal proceeds to offset negative economic impacts

Nuclear revival and renewable energy storage technologies can provide reliable and stable energy delivery

A clearly articulated role of macroeconomic policies in nationally determined contributions of Asian and Pacific countries is needed

Socioeconomic prosperity amid the transition to an environmentally sustainable economy: policy options

Integrating transition and sustainability aspects into economic policymaking is essential for fostering socioeconomic prosperity

The challenge is not the lack of policy options, but which policies should and can be implemented

A three-step thinking framework to simultaneously promote socioeconomic prosperity and energy transition

Step 1 — Set priority transition goals

Use transparent thresholds to identify the goals

- GOAL 1 — Reduce fossil dependence
- GOAL 2 — Scale clean and renewable energy
- GOAL 3 — Increase energy efficiency
- GOAL 4 — Ensure energy access

Step 2 — Assess implications on socioeconomic prosperity

- Macroeconomic stability
- Sustained economic growth
- People's well-being

Step 3 — Assess implementation feasibility

- Fiscal space
- Monetary and financial conditions
- Institutional capacity
- Technological readiness

Regional cooperation helps expand what is feasible nationally by

- Pooling risks
- Aligning standards
- Managing spillovers
- Leveraging scale
- Integrating systems
- Reducing fragmentation

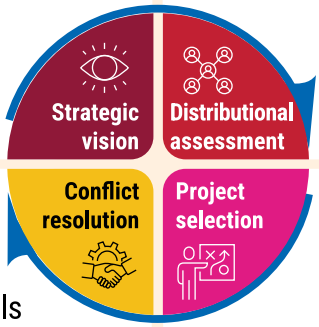
Socioeconomic prosperity amid the transition to an environmentally sustainable economy: policy implementation

Turning policy options into policy action

Analytical tools help policymakers navigate policy trade-offs

Integrated assessment models
Technology maturity versus energy transition ambition

Computable general equilibrium models
Economy-wide gains versus sectoral losses



Multicriteria decision analysis
Social acceptance, economic growth versus environmental goals

Cost-benefit analysis
Financial return versus economic cost

Politically successful reforms require a "build-align-consolidate" approach

1 Build

- Build and strengthen an internal "transition core"
- Localize energy transitions
- Institutionalize dialogues

2 Align

- Reframe the public narrative
- Time transitions politically, with compensation

3 Consolidate

- Repurpose state-owned enterprises' mandate for the transition
- Create new industries as beneficiaries

Behavioural insights help increase policy uptake

- **Framing** fossil fuel subsidy cuts as national solidarity
- Setting renewable energy as the **default option** to benefit from human inertia
- **Peer benchmarking** to increase the adoption of energy-efficient technologies
- **Simplified information** on the financial benefits of solar power

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Explanatory notes

Analyses in the *Economic and Social Survey of Asia and the Pacific 2026* are based on data and information available up to 15 March 2026.

Groupings of countries and territories/areas referred to in the present edition of the *Survey* are defined as follows:

- **ESCAP region:** Afghanistan; American Samoa; Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People's Republic of Korea; Fiji; French Polynesia; Georgia; Guam; Hong Kong, China; India; Indonesia; Iran (Islamic Republic of); Japan; Kazakhstan; Kiribati; Kyrgyzstan; Lao People's Democratic Republic; Macao, China; Malaysia; Maldives; Marshall Islands; Micronesia (Federated States of); Mongolia; Myanmar; Nauru; Nepal; New Caledonia; New Zealand; Niue; Northern Mariana Islands; Pakistan; Palau; Papua New Guinea; Philippines; Republic of Korea; Russian Federation; Samoa; Singapore; Solomon Islands; Sri Lanka; Tajikistan; Thailand; Timor-Leste; Tonga; Türkiye; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu and Viet Nam.
- **Developing ESCAP region:** ESCAP region, excluding Australia, Japan and New Zealand.
- **Developed ESCAP region:** Australia, Japan and New Zealand.
- **East and North-East Asia:** China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea and two associate members, Hong Kong, China and Macao, China.
- **North and Central Asia:** Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.
- **Pacific:** Australia, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu, as well as American Samoa, Cook Islands, French Polynesia, Guam, New Caledonia, Niue and Northern Mariana Islands as associate members.
- **Pacific island developing economies:** All those listed under "Pacific" except for Australia and New Zealand.
- **South and South-West Asia:** Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka and Türkiye.
- **South-East Asia:** Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam.
- **Least developed countries (LDCs):** Afghanistan, Bangladesh, Cambodia, Kiribati, Lao People's Democratic Republic, Myanmar, Nepal, Solomon Islands, Timor-Leste and Tuvalu. Note: Bhutan, Maldives, Samoa and Vanuatu were least developed countries prior to their graduation in 2023, 2011, 2014 and 2020, respectively.
- **Landlocked developing countries (LLDCs):** Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Mongolia, Nepal, Tajikistan, Turkmenistan and Uzbekistan.
- **Small island developing States (SIDS):** American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Maldives, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Singapore, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu.

Owing to the limited availability of data, selected small island developing States are excluded from the analysis. For the purpose of this *Survey*, Singapore is not considered to be a small island developing State due to its high level of development and high-income status.

Bibliographical and other references have not been verified. The United Nations bears no responsibility for the availability or functioning of weblinks/URLs.

Many figures used in the *Survey* are calculated on a fiscal year basis and are assigned to the calendar year which covers the major part or second half of the fiscal year.

Growth rates are on an annual basis, except where indicated otherwise.

References to dollars ($) are to United States dollars, unless otherwise stated.

The term “billion” signifies a thousand million. The term “trillion” signifies a million million.

In the tables, a blank indicates that the item is not applicable.

In dates, a en dash (–) is used to signify the full period involved, including the beginning and end years, and a stroke (/) indicates a crop year, fiscal year or plan year.

Units of mass are expressed in tons (t), million tons (Mt) and gigatons (Gt). Energy and power are expressed in megajoules (MJ), exajoules (EJ), kilowatt-hour (kWh), megawatt-hour, (MWh) terawatt-hour (TWh), megawatts (MW) and gigawatts (GW), unless otherwise specified.

Acronyms

ADB	Asian Development Bank
AI	artificial intelligence
AIM	Asia-Pacific Integrated Model
AOC	actors–objectives–context
ASEAN	Association of Southeast Asian Nations
BAU	business as usual
BIU	behavioural insight unit
CAPEX	capital expenditure
CBA	cost-benefit analysis
CBAM	European Union's carbon border adjustment mechanism
CCPT	climate change and principle-based taxonomy
CEIC	CEIC Data, part of ISI Emerging Markets Group
CGE	computable general equilibrium model
CO_2	carbon dioxide
COP	Conference of Parties (United Nations Climate Change Conference)
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESI	energy savings insurance
ETM	energy transmission mechanism
ETS	emissions trading systems
EV	electric vehicle
FDI	foreign direct investment
GDP	gross domestic product
GHG	greenhouse gas emissions
GSS+	green, social, sustainability and sustainability-linked instruments (bonds)
GST	goods and services tax
IAEA	International Atomic Energy Agency
IAM	integrated assessment model
IEA	International Energy Agency
IFC	International Finance Corporation
ILO	International Labour Organization
IMF	International Monetary Fund
IRENA	International Renewable Energy Agency
JETP	Just Energy Transition Partnerships
KLM	Bank Indonesia's macroprudential liquidity incentive
LCOE	localized cost of electricity
LPG	liquefied petroleum gas
LTV	loan-to-value

MCDA	multicriteria decision analysis
MDB	multilateral development bank
MSME	micro, small and medium-sized enterprise
NDC	nationally determined contribution
NGFS	Network for Greening the Financial System
NGO	non-governmental organization
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
PLI	production-linked incentive
PPP	purchasing power parity
PV	photovoltaic
RMG	ready-made garments
SDGs	Sustainable Development Goals
SME	small and medium-sized enterprise
SNA	System of National Accounts
SOE	state-owned enterprises
UHV	ultra-high voltage
UNCTAD	United Nations Trade and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSD	United Nations Statistics Division, Department of Economic and Social Affairs
WTO	World Trade Organization

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Chapter 1

Macroeconomic prospects, challenges and policies

1.1. Introduction

The Asia-Pacific region continues to face a challenging global environment. Elevated tariffs, changes in global trade patterns, moderating global economic growth and rising geopolitical tensions and conflicts have contributed to heightened uncertainty. This uncertainty is weighing on economic activity, as well as on trade and investment decisions across the region, even as inflation has moderated due to lower international food and energy prices. Against this backdrop, economic growth in the region, as measured by GDP, was subdued in 2025.

Despite these headwinds, the Asia-Pacific region continued to grow faster than other regions, contributing close to 60% of global economic growth and around 40% of global GDP in 2025. Domestic demand in most economies remained resilient, supported by adaptive fiscal and monetary policy responses. Economic performance, however, remained uneven across subregions and economies, reflecting differences in exposure to external developments, the available policy space and underlying structural conditions.

While continued economic expansion helped lower extreme poverty, moderate poverty remains a concern.[1] At the same time, more than half of Asian and Pacific countries experienced an increase in inequality[2] between 2019 and 2022 relative to 1990–2019 (ESCAP, 2024a). It may widen further in the near term when the impacts of rising trade, economic protectionism and conflict in the Middle East – especially for employment – unfold. High sovereign debt risks and limited productive capacities in many Asian and Pacific economies, together with an increasingly fragmented global economy, are undermining the region's ability to sustain economic growth and effectively pursue the Sustainable Development Goals.

This chapter provides an overview of the region's macroeconomic performance while also shedding light on the near-term macroeconomic outlook and emerging risks and challenges in 2026 and 2027. The last section highlights and discusses salient policy recommendations.

1.2. Recent economic developments

1.2.1. Global economic context: rising trade protectionism and economic uncertainty

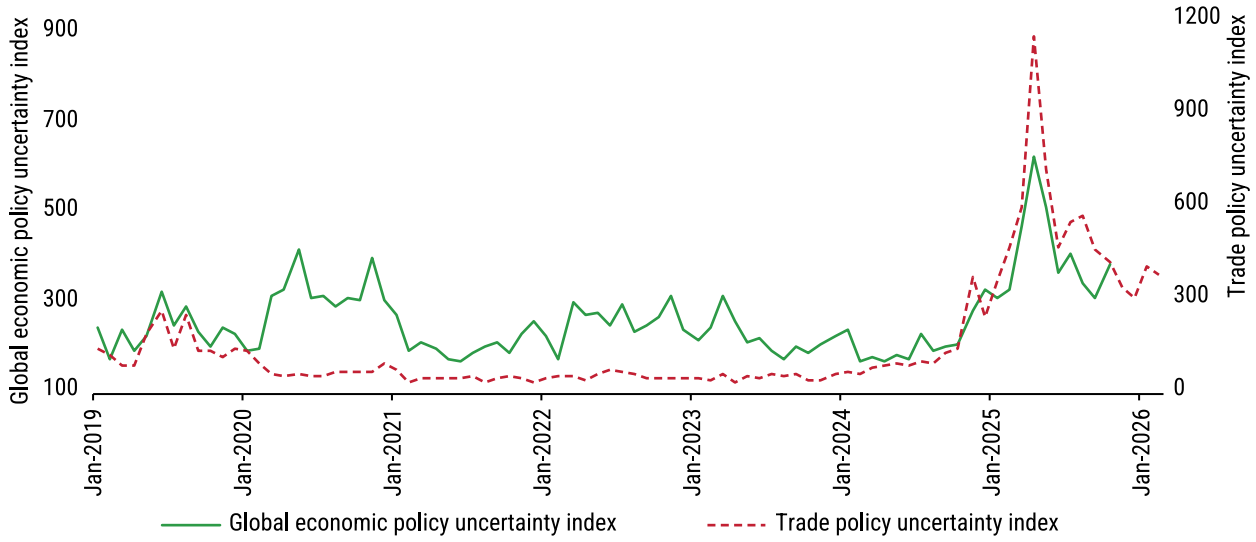
The global economy faced new headwinds in 2025 – rising trade protectionism and economic uncertainty. After experiencing successive shocks since 2020, such as the COVID-19 pandemic followed by a cost-of-living crisis, surging borrowing costs and high debt vulnerabilities, the global economy experienced a new headwind of rising trade protectionism in 2025. In April 2025, the United States of America announced tariff hikes which comprised a universal baseline tariff of 10% and country-specific tariffs that were largely determined by bilateral trade imbalances and perceived market access restrictions. Throughout 2025, various exemptions at the country and product levels were announced along with postponement of effective dates, several changes in waived products and tariff rates, as well as some retaliatory measures by affected countries. These unpredictable and rapid changes spiked the global economic and trade policy uncertainty index to a record high in April 2025 (fig. 1.1). While recent agreements between the United States and its trading partners have eased some concerns, consumers in the United States are facing an average effective tariff rate of 16.8% as of November 2025, the highest level since 1935 (The Budget Lab, 2025). The 2025 tariff hike in the United States reflects a continuation of the country's shifting trade policy over the past decade away from a multilateral orientation towards a more unilateral approach with growing emphasis on strategic competition and domestic economic security.

Adding to existing trade uncertainties, the conflict in the Middle East, which began on 28 February, has resulted in disruptions of energy, gas and fertilizer production and shipments through the Strait of Hormuz; a critical maritime trade route. This has led to a surge in global oil prices and freight costs, interrupted supply chains and economic activities across the globe. The conflict has further heightened global uncertainty, particularly regarding its duration and consequently the adverse socioeconomic consequences (box 1.1).

[1] Extreme poverty is measured as the number of people living below the international poverty line which is set at $3 per day for low-income economies. The international poverty line for moderate poverty is $4.20 per day for lower-middle income economies and $8.30 for upper-middle-income economies based on the World Bank's global poverty lines as of June 2025 (World Bank, 2025a).

[2] Refers to inequality in multiple forms, including income, wealth and access to opportunities.

Figure 1.1. Global economic policy and trade uncertainty, January 2019–February 2026



Source: Based on CEIC and Caldara and others (2019).

Box 1.1. Socioeconomic implications of the recent conflict in the Middle East on Asia and the Pacific

The recent conflict in the Middle East, which began with an attack on the Islamic Republic of Iran by Israel and the United States of America on 28 February 2026, is a major unfolding crisis, with substantial and far-reaching human and socioeconomic consequences. Noting great uncertainty, especially regarding the duration of the conflict, this box highlights some immediate macroeconomic impacts and identifies main socioeconomic implications going forward in case of a prolonged conflict.

Macroeconomic impacts so far

Higher global commodity prices, freight costs and supply constraints. Several countries in the Middle East are major producers of oil, gas and fertilizer, while the Strait of Hormuz accounts for 20–30% of global shipments of these commodities. Amid concerns over disruptions in oil production and shipment, Brent crude oil price rose to $120 per barrel as of 9 March but then decreased to below $90 per barrel as G7 countries explored the possibility of releasing oil reserves. Yet the latest oil price still marks a 45%[a] surge since 28 February and is at the highest level since 2022. Meanwhile, global gas prices have surged by about 55% (Saba and Elimam, 2026) since the conflict began, while the price of urea, a key component of fertilizers, increased by 35% to a three-year high level (Munz, 2026). Finally, container freight rates across major routes have increased by 3–10% amid increases in maritime insurance premiums from 0.25% to 3% (Hussain and Saini, 2026) as well as higher emergency and fuel surcharges.

Capital outflows and weaker exchange rates. The composite stock indices in India, Japan and the Republic of Korea have plunged by 5–16% compared to pre-conflict levels. While global investors reallocated funds to "safe haven" markets, domestic investors were also part of the sell-off to increase cash holdings amid elevated uncertainty. Partly underpinned by financial market sell-offs, currencies in India, the Republic of Korea and South-East Asian countries have depreciated by 0.4–1.5% against the United States dollar since the conflict started.

Box 1.1. continued.

Rising sovereign credit risks. Reflecting an increase in perceived sovereign credit risks, government bond yields in Indonesia, the Republic of Korea and Thailand have risen by 18–27 basis points since the conflict started.[b] For countries such as Sri Lanka and Pakistan, the governments' long-term borrowing costs are as high as 10.8% and 12%, respectively.

Potential socioeconomic implications if the conflict expands, persists or both

Slower economic growth. Globally, an early assessment suggests that a 10% rise in energy costs over a year could reduce global economic growth by 0.2 percentage points (Jiao, 2026). So far, there are no official updates of economic growth projections for 2026 for economies in the Asia-Pacific region. The economy of the Islamic Republic of Iran could be the hardest hit while the magnitude of impact on other countries in the region will depend largely on how much the conflict affects inflation, interest rates, external receipts (from goods exports, remittances and tourism), supply chains and fiscal positions (see below). While early estimated economic growth impacts are modest, they could be more notable if the scale and duration of the conflict increase. Under such a scenario, global import demand and market sentiment could deteriorate further, with uneven effects on exports and employment conditions across sectors in the region.

Higher inflation and interest rates. Several factors will determine the scale of the inflation impact on individual economies, such as dependence on and ability to find new sources of imported energy and food; the size of domestic energy reserves; energy intensity level; the extent of currency depreciations and thus imported inflation; and government policy measures put in place. On dependence, net oil and gas imports account for as much as 7.2-8.4% of GDP in the Republic of Korea, Singapore and Thailand (Park and Lanzafame, 2026). Countries such as Japan, Malaysia, the Philippines and the Republic of Korea rely heavily on imported food for domestic consumption. Meanwhile, Japan sources over 90% of its oil imports from the Middle East, while this figure stands at around 70% for the Republic of Korea and 50% for China and India (Reuters, 2026). Finding alternative energy sources could be a challenge and will come at a higher cost. To manage inflation expectations, central banks in countries with relatively low inflation may postpone policy interest rate reductions while those where inflation is already high may have to raise the rates. Even when policy rates are unchanged, credit growth could slow as lending becomes more stringent. In some countries, however, a surge in investments in renewable energy in response to higher oil prices may help sustain credit growth.

Food security, poverty and inequality at increased risk. Higher fertilizer prices raise agricultural production costs, and thus food prices. The impact would be more notable on poorer households that allocate a larger proportion of their expenditure to food items. More broadly, higher food prices would hold back progress towards Sustainable Development Goal 2 on zero hunger, especially in countries such as Afghanistan, Papua New Guinea and Solomon Islands where 20.0–28.7% of the population remains undernourished. With the risk of economies slowing down, job prospects becoming dimmer, and purchasing power eroding due to higher inflation, poverty and inequality will increase. The ability of many governments to cushion the impact through fiscal measures is also limited due to constrained fiscal positions and high debt vulnerabilities.

Weaker remittances and tourism directly affect lower-income households. A large proportion of foreign workers in the Middle East are from Asian and Pacific countries, particularly Bangladesh, India, Indonesia, Nepal, Pakistan and the Philippines. For example, about 50% and 65% of foreign employment in the Philippines and Nepal is in the Middle East,

Box 1.1. continued.

respectively (Banjade and Tamang, 2026; PSA, 2025). Likewise, a large share of tourist arrivals to countries such as Malaysia, Maldives and Thailand are from the Middle East. Tourism in general will be affected by travel disruptions, higher transport costs and weaker consumer confidence. Weaker remittances would directly dampen the livelihoods of low-income households while many workers in the tourism sector are low-skilled and have no formal work arrangements. More broadly, weaker external receipts could jeopardize external balance stability, especially if foreign exchange reserves are already at a low level.

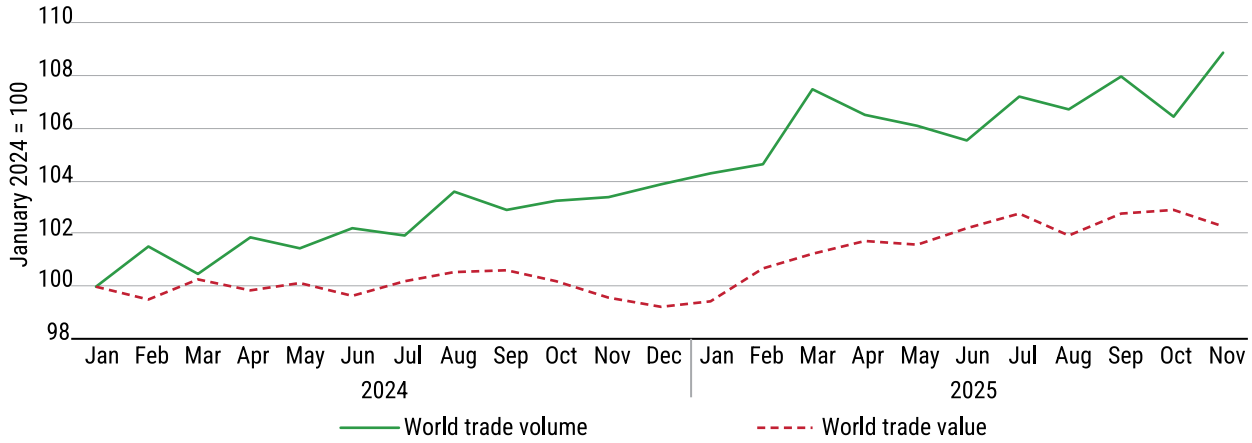
Constraining fiscal space. Slower economic growth would hold back government revenues while higher market interest rates and perceived sovereign risks will push up government borrowing costs. In countries where price subsidies for food and fuel are maintained, fiscal expenditures will likely be higher. Weaker exchange rates will also increase the value of external public debt in local-currency terms, thus increasing the debt-servicing burden. Taken together, these would further constrain fiscal space at a time when more fiscal support is needed to navigate the impact of conflict.

[a] Based on CEIC data.
[b] Based on CEIC data.

Global economic growth is estimated to have declined slightly to 2.8% in 2025 from 2.9% in 2024 (United Nations, 2026), partly driven by increased trade protectionism and elevated economic uncertainty, together with technology decoupling and restrictions on shipping. Somewhat paradoxically, and despite anticipated disruption to global trade flows, global economic growth in 2025 was mainly driven by international trade and investment activities. This is because most countries pre-empted the coming into effect of the new United States tariffs in August 2025 and frontloaded export-related activities. Global merchandise trade is estimated to have grown by 3.8% in volume terms, up from 3.5% in 2024; a stronger than expected performance reflecting trade resilience amid tariff headwinds and uncertainties (United Nations, 2026) (fig. 1.2). Trade in services also remained strong in 2025, supported by digital services and travel while demand for transport weakened.[3]

[3] See United Nations (2026).

Figure 1.2. Global merchandise trade growth, January 2024–November 2025



Source: ESCAP, based on data from CPB Netherlands Bureau for Economic Policy Analysis (2025).

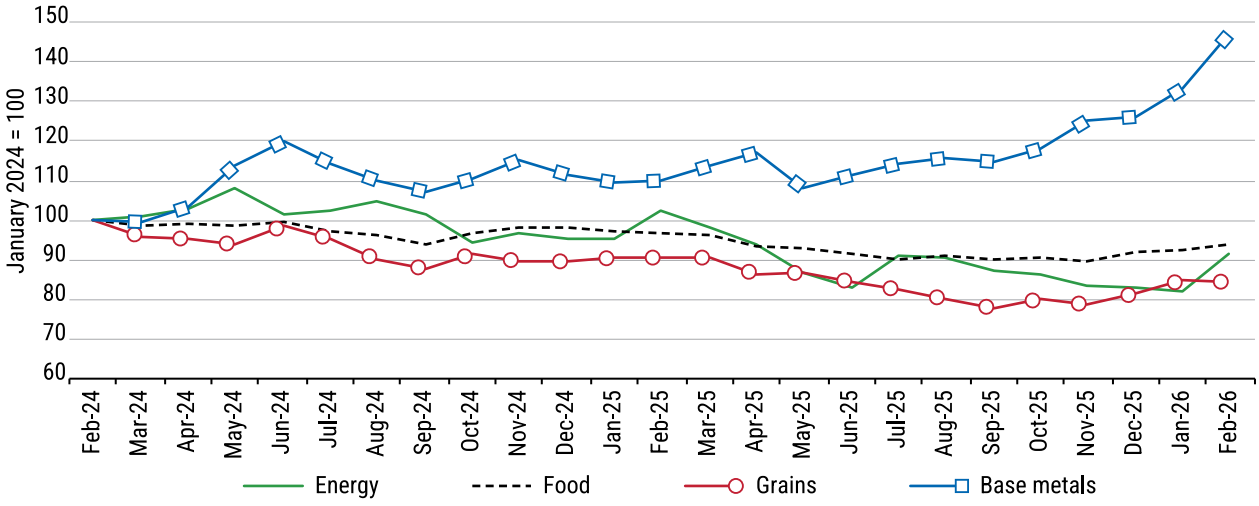
Globally, lower inflation helped support household spending. On average, prices of primary commodities such as food, energy, fertilizer and metals declined by about 7% in 2025 (World Bank, 2025b), reflecting rising uncertainty and weaker growth prospects (fig. 1.3). Oil prices declined steadily as of early April 2025 as OPEC+ increased oil production with brief spikes in oil prices in mid-June, triggered by geopolitical tensions in the Middle East, and a second time in October due to United States' sanctions on Russian oil refineries. Oil prices reached $69 per barrel by the end of 2025, which is a significant decline compared to $80 per barrel at the start of 2025.

As of 12 March 2026, disruptions in oil production and shipments due to the Middle East conflict sent the price of Brent crude oil soaring by 45%, reaching $120 per barrel, after which it receded to below $100 and remained volatile due to elevated uncertainty. Although food prices declined by approximately 7% in 2025 due to lower grain prices – notably rice, wheat and maize as a result of ample global supplies (World Bank, 2025b) – they remain higher than prior to the cost-of-living crisis. Global food price inflation has outpaced headline inflation since 2020. Rising food prices reduce the well-being of people and significantly undermine their food security and nutrition (FAO, IFAD, UNICEF, WFP and WHO, 2025),[4] particularly for poor people as they spend a large share of their income on food.

Global monetary conditions eased in 2025, with currency appreciations in many developing countries in the context of a weaker United States dollar helped contain inflation of imported goods and services. Nevertheless, as public debt levels, fiscal deficits and interest rates are already high in several economies, shifts in investor confidence due to trade-related uncertainty can push up borrowing costs and limit governments' fiscal space. In 2025, technology stocks account for a large share of equity market capitalization in the United States, with major AI firms having reached high valuations to become central drivers of global equity performance. This is raising financial stability concerns (fig. 1.4).

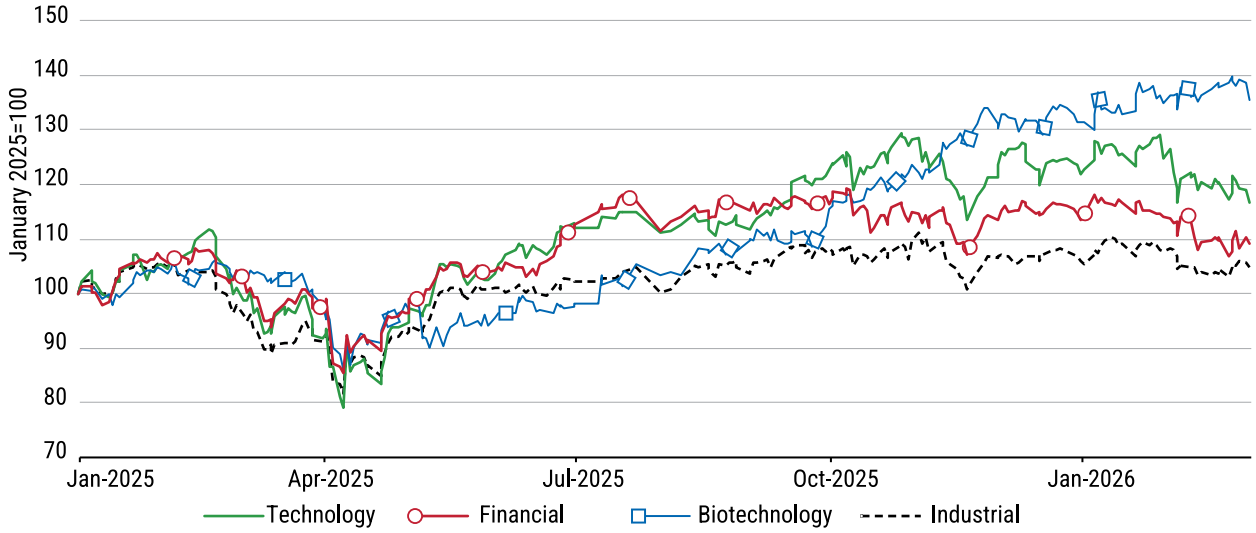
[4] Food price increases can reduce households' welfare in the short run resulting in people lacking the means to secure access to sufficient safe and nutritious food for normal growth and development and an active and healthy life. A 10% increase in food prices is associated with a 3.5% rise in moderate or severe food insecurity and a 1.8% increase in the proportion of individuals experiencing severe food insecurity (FAO, IFAD, UNICEF, WFP and WHO, 2025).

Figure 1.3. Major commodity price movements, January 2024–February 2026



Source: CEIC and World Bank "Pink Sheets" (commodities price data).

Figure 1.4. Nasdaq index – selected sectors, January 2025–February 2026



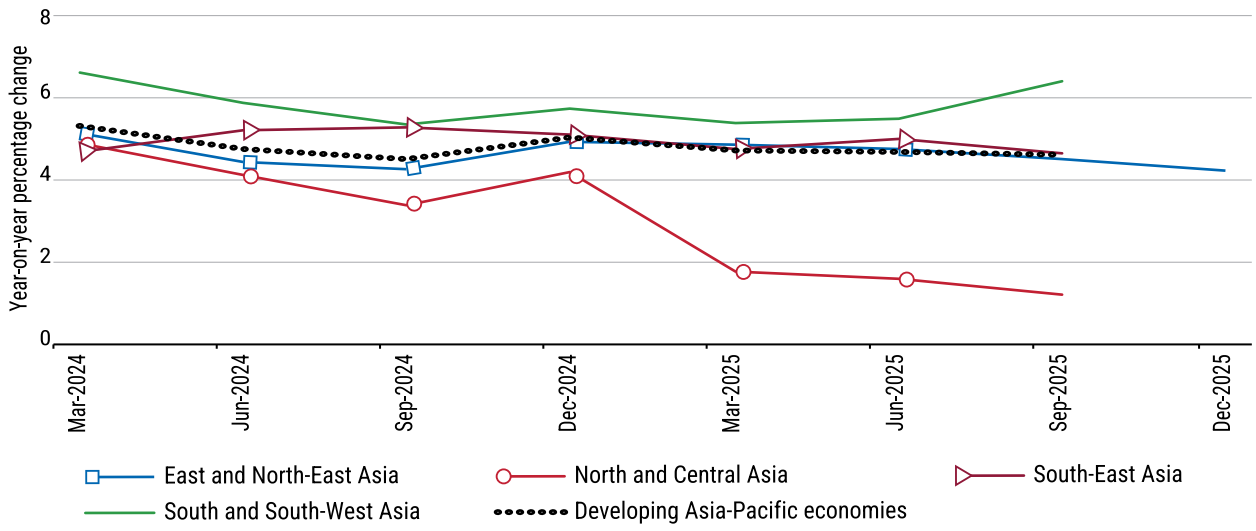
Source: United Nations (2026) based on Federal Reserve Economic Data database and CEIC.

Note: Technology represents the Nasdaq-100 Technology Sector Index; biotechnology, industrials, and financials reflect broader Nasdaq sector indices.

1.2.2. Recent economic developments in Asia and the Pacific: economic growth is estimated to moderate further in 2025

The average economic growth in developing Asian and Pacific economies is estimated to have moderated to 4.6% in 2025 from 4.8% in 2024 and 5.3% in 2023 (fig. 1.5). Despite this slowdown, the economic growth of developing Asian and Pacific economies remained higher than other developing regions, contributing to almost 60% of global growth. However, these rates remain below the average of 5.5% during the pre-pandemic years of 2015–2019. Moreover, the least developed countries in the region are lagging. With an estimated economic growth of 3.1% in 2025, they continued to fall short of the 7% target set out in Sustainable Development Goal target 8.1. This will slow down poverty reduction, decent work and inclusive growth in the region's least developed countries.

Figure 1.5. Real GDP growth, in %, in developing Asian and Pacific economies, March 2024–December 2025



Source: ESCAP based on CEIC.

Note: Subregional aggregates are GDP-weighted averages, based on 28 economies in Asia and the Pacific for which quarterly GDP data are available. Pacific island economies are not included due to lack of quarterly data.

Figure 1.6. Trade growth in developing Asian and Pacific economies, 2024–2025

Source: ESCAP based on CEIC.

The region's economic expansion was underpinned by growth in merchandise exports and private consumption. The value of exports of goods grew by 5.3% in 2025.[5] Goods export volumes grew by 3.3% in 2025; slower than the 7.9% growth in 2024 (ESCAP, 2025c). In services trade, growth declined to 5.4% in 2025 from 12.7% in 2024 (ESCAP, 2025c). Much of this growth is attributed to frontloading of shipments ahead of the tariff hike by the United States that took effect in August 2025 (fig. 1.6).

Trade within the Asia-Pacific region has increased. For example, Japan's export growth of 6.4% in the first half of 2025 was largely due to exports of machines to other East Asian economies for manufacturing semiconductors (WTO, 2025a). While China's total value of goods exports grew by 5.4% in 2025, its direct exports to the United States dropped by 20% during this same period (fig. 1.7). This was offset by increased shipments to other parts of the world, including 26% growth to Africa and 13% to South-East Asia. In October 2025, greater clarity on the tariffs and signs of relaxation of trade measures after several bilateral agreements were reached, supporting continued export growth in the last quarter of 2025.[6] Moreover, robust global demand for artificial intelligence (AI)-related products, such as semiconductors, processors, computers, servers and telecommunications equipment, which are still exempt from additional tariffs, also underpinned the export increase. Two-thirds of global AI-related trade growth in the first half of 2025 was from Asia and the Pacific (WTO, 2025a).

FDI inflows to developing Asian and Pacific economies declined amid trade tensions and geopolitical uncertainty. After an increase of 0.6% in 2024, FDI to the region declined by 2% in 2025, even as global flows increased by 14% (UNCTAD, 2026). Worryingly, however, the overall global FDI in sectors that are critical for several SDGs, such as health, education, water, sanitation and hygiene, renewable energy, infrastructure and agrifood systems, dropped by 7% in the first half of 2025.[7] Within the Asia-Pacific region, the countries that attracted the largest share of greenfield[8] FDI in the first three quarters were India, Australia, the Republic of Korea and Kazakhstan with $50 billion, $30 billion, $25 billion and $21 billion in announced investments, respectively.[9] Investment pledges were concentrated in the manufacturing sector (metals, semiconductors and automotive) and the services sector (communications, renewable energy and real estate).

Resilient household consumption also supported economic growth in 2025, on the back of stable labour market conditions, lower inflation and government support measures such as cash handouts, price stabilization on key food items or subsidies for utilities. Consumer sentiment, however, became fragile, reflected in sluggish spending on less essential items, such as tourism.

[5] Export growth was rather broad-based, reaching double digits in economies such as Cambodia; Georgia; Hong Kong, China; Malaysia; Nepal; the Philippines; Singapore; Thailand; Türkiye; Uzbekistan and Viet Nam.

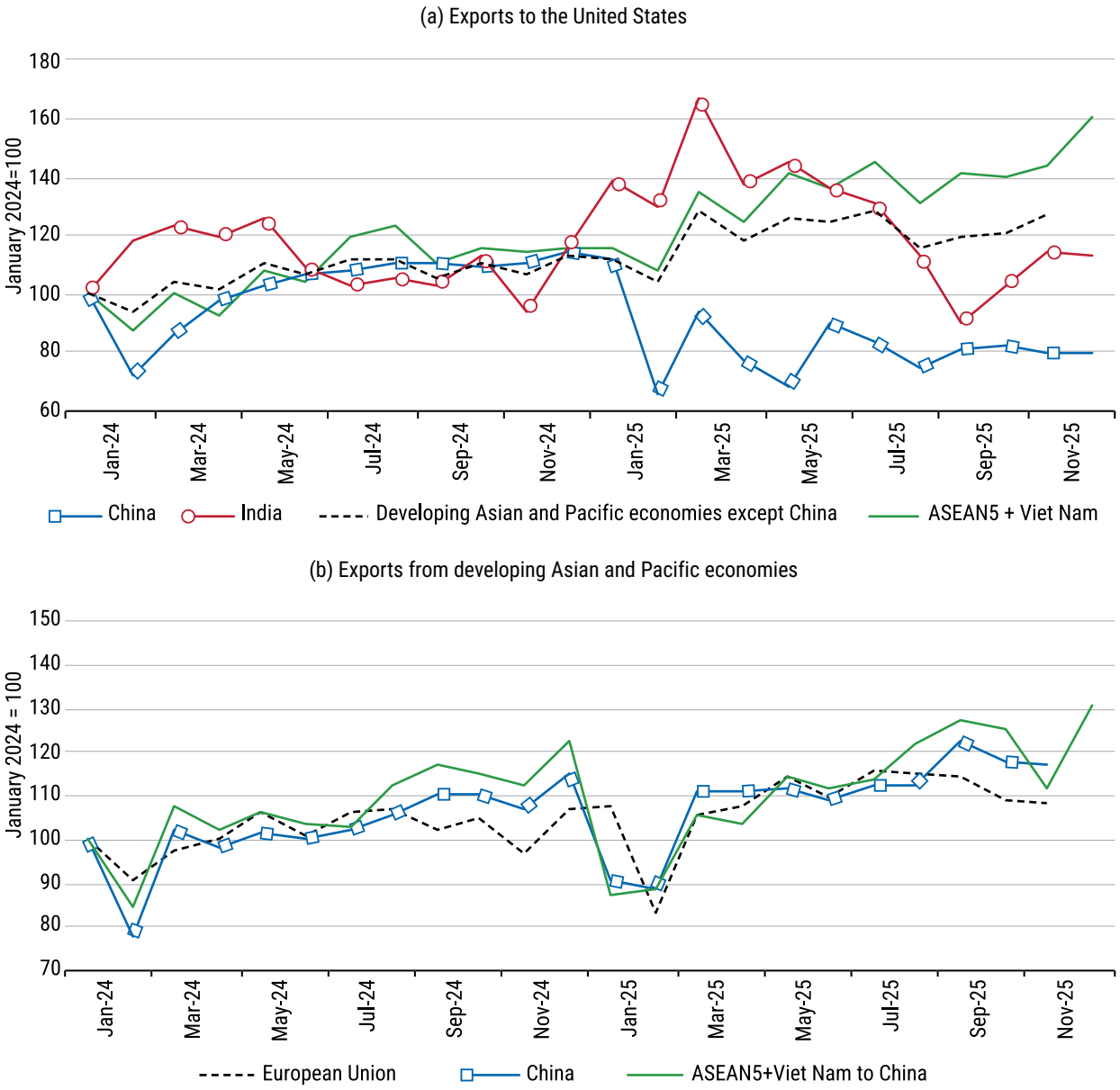
[6] The United States accounts for around 14% of global imports (WTO, 2025b) and up to 15% of exports of Asian and Pacific economies (ESCAP, 2024b).

[7] See UNCTAD (2025a).

[8] When companies set up new or expand existing business operations abroad.

[9] See ESCAP (2025b).

Figure 1.7. Trade between other regions and within the Asia-Pacific region, 2024–2025



Source: ESCAP based on CEIC.

Note: ASEAN5+VN refers to Indonesia, Malaysia, Philippines, Singapore, Thailand plus Viet Nam.

1.2.3. Rising global trade protectionism and fragmentation will have wide-ranging socioeconomic implications

Developing Asian and Pacific economies were faced with some of the highest tariff rates on exports to the United States in 2025, such as 47% for China from November 2025 onwards and 50% for India starting in August 2025. The average additional effective tariff rate on Asian and Pacific developing economies stands at around 15%, up from about 2.8% in 2024.[10] Several smaller and least developed countries, such as Bangladesh, Cambodia, Lao People's Democratic Republic and Myanmar, face high tariffs of 19-40%. This would likely hold back their economic development and delay graduation from least developed country status. Further tariff adjustments were announced following the United States Supreme Court ruling in February 2026 (The White House, 2026) and policy changes remain highly unpredictable. As of February 2026, tariff rates faced by developing Asian and Pacific economies remain higher than what they were in 2024.

[10] ESCAP calculations, based on Center for Global Development (2025).

The potential economic effects of rising global trade protectionism could be significant for some Asian and Pacific economies. Based on an estimate in July 2025, the tariff hike could cut China's economic growth by 0.7 percentage points, and by 0.4 percentage points in the rest of the region (Quintos, Villanueva and Lanzafame, 2025). Among countries with large exports to the United States, such shipments account for about 10% of GDP in Malaysia and Thailand, 21% in Cambodia and 25% in Viet Nam. Subdued export orders would hamper employment, wages and business investment in affected and related sectors, eventually impacting economic growth and government revenues. Beyond direct exports to the United States, economies that supply raw materials, parts and components to the region's value chains would also face weaker demand. For example, about one third of Bangladesh's exports of textiles and textile products are derived from inputs from other countries or upstream trade partners (Anukoonwattaka, Duval and Chanda, 2025). In the longer term, a country's potential economic growth could be constrained due to slower productivity growth amid disrupted value chains and trade diversion.

The implications for workers would vary, depending on gender, age group, skills and economic sectors. Tariff hikes are estimated to have sizeable employment impacts. Around 3% of total employment in the region, or roughly 56 million jobs, are linked to final demand in the United States through trade and supply chains, with manufacturing employment most exposed.[11] Given varying sector-specific tariffs, some economic sectors would be more affected than others. Examples include a 25% tariff on automobile parts and semiconductors and 50% on copper, steel and aluminium. The tariff on automobiles and parts would notably affect the Republic of Korea where exports of these items account for one third of the country's shipments to the United States. Tariffs on steel and aluminium would disproportionally affect exports from India, the Republic of Korea and Viet Nam, while those on semiconductors could especially hamper Malaysia, the Philippines, Singapore, Thailand and Viet Nam. The eventual impact of these sectoral tariffs on countries in the region will also hinge on the United States' ability to substitute these imports with domestic production and on tariff exemptions or reductions through negotiations.

Lower exports could dampen employment and wages, pushing vulnerable workers into poverty. For example, the garment sector in countries such as Bangladesh, Cambodia, Pakistan and Sri Lanka employ large numbers of informal workers including many women (box 1.2). According to ESCAP analysis of Cambodia, 49% tariffs could reduce output by 13% with more than 400,000 Cambodian workers losing their jobs. More than 70% of these workers would be female, as the textiles sector is female-dominated (Chanda and others, 2025). Compared to registered workers, informal workers are more vulnerable, as they have limited bargaining power, rights protection, access to social protection and are often paid below the minimum wage levels. If trade tensions ease, persistent trade policy uncertainty may deter firms from rehiring displaced workers. This situation would push workers into poverty or force them to cut spending on food, health and education, with longer-term intergenerational implications. Historical evidence shows that a plunge in export demand during the COVID-19 pandemic left millions of garment workers in the region very vulnerable (ILO, 2020).

The extent of tariff-induced employment losses is partly determined by the scale and timeliness of government support. In this regard, many governments in the region have introduced support measures, such as a scheme to support the financial liquidity of exporters in industries such as garments, seafood, leather and jute in Bangladesh; a credit guarantee scheme with subsidized fees in Cambodia; tax relief for workers in sectors such as footwear, textiles, furniture and leather goods in Indonesia; hedging risks through trade insurance for smaller exporting firms in the Republic of Korea; and subsidized credits for trade facilitation schemes in Pakistan.

In late 2025, many countries in the region sought new trade partnerships, including the China-ASEAN enhanced free trade pact (The State Council of The People's Republic of China, 2025) the Comprehensive Economic Partnership Agreements between India and Oman, between Indonesia and the European Union (European Commission, 2025) and between Indonesia and Canada (Prime Minister of Canada, 2025). Smaller or less developed countries in the region may find such diversification more challenging due to limited competitiveness and increased global trade competition.

[11] This includes approximately 25.7 million workers in East Asia, 16.8 million in South Asia, 13.0 million in South-East Asia and 400,000 in the Pacific. See ILO (2025a).

Box 1.2. The likely poverty and distributional implications of increases in tariffs by the United States

Exports of labour-intensive manufactured goods from Asian and Pacific economies are expected to decline in the near term following the tariff hikes by the United States. Countries such as Bangladesh, Cambodia, Pakistan, Sri Lanka and Viet Nam, facing tariffs of around 20%, are particularly exposed, as garments, textiles, footwear and leather goods account for a sizeable share of their exports to the United States. For example, in Bangladesh and Cambodia, garments and textiles alone represent around 50-80% of total goods exports to the United States. Sri Lanka's exports to the United States are expected to drop by about 20% due to higher tariffs, with garments and rubber products among the most affected (Wijesinghe, 2025).

These sectors play a central role in employment generation. Bangladesh employs an estimated 3.6–4.4 million workers in ready-made garments (RMG), the single largest apparel workforce globally, accounting for over 80% of exports to the United States (The Business Standard, 2024). Cambodia's garment, textile and footwear sector employs about 1 million workers (Siddiqi, 2025) and produce more than 60% of United States-bound exports (ILO, 2018). Pakistan employs around 4.4 million workers in garments, equivalent to about 40% of total employment in manufacturing, and comprising about 20-25% of total exports to the United States (ILO, 2022). Sri Lanka has roughly 300,000 formal jobs in apparel manufacturing and a similar number in informal arrangements (Asia Garment Hub, 2025a), representing around 40% of total United States-bound exports (Joint Apparel Association Forum Sri Lanka, 2025). Sustained and cumulative weakening of export demand could have substantial labour-market implications over time.

Women dominate employment in these labour-intensive sectors, particularly in lower-skilled, routine jobs such as sewing, cutting and finishing. Women account for some 7 in 10 RMG workers in Bangladesh and Sri Lanka, and about 8 in 10 in Cambodia (Asia Garment Hub, 2025b). While female participation in Pakistan's garment sector is lower at around 20-24%, it is marked by strong occupational segregation. Wages in these sectors are often at minimum levels or only slightly above and workers generally have limited access to social safety nets such as unemployment benefits. For example, in Bangladesh, around 32% of RMG workers earn below the minimum wage and about 7% earn incomes that leave them below the international poverty line (GoodWeave International, 2025). Female wages also remain lower than male wages, for example, by an estimated 15% in Viet Nam's garment sector (ILO, 2025c). As women and low-skilled workers may have limited capacity to transition to alternative employment, job losses or wage cuts risk pushing households into poverty and widening gender pay gaps.

The vulnerability of workers is compounded by widespread informality and job insecurity. A substantial share of garment employment remains informal through subcontracting and home-based work, even within export supply chains. Up to 92% of RMG workers in Bangladesh lack written contracts (Dhaka Tribune, 2025) and about 80–87% of Pakistan's textile and RMG manufacturing firms are unregistered or informal (SMEDA and ILO, 2025). In Sri Lanka, around one-third of female apparel workers are informally employed compared with only 13% of male workers (Dissanayake and IPS Sri Lanka, 2024). If export demand weakens, informal and subcontracted workers will become highly vulnerable as these jobs lack notice periods, job security and access to social protection, and are typically the first to be laid off and the last to be rehired.

Box 1.2. continued.

The eventual magnitude of the impact of tariff hikes on employment and wages, which has direct implications for poverty and income inequality, depends on several factors. For example, the extent to which exporters will cut labour costs versus profit margins to avoid higher post-tariff retail prices in the United States, the ability of exporters to find new export markets, tariffs imposed by the United States on other countries producing the same products and the scale and timeliness of government support at home. Experiences from across the Asia-Pacific region during the COVID-19 pandemic indicated that the scale and delivery of government support to companies often lagged the pace of disruption, with limited coverage and delayed disbursement constraining the timeliness and effectiveness of policy responses (Brucal, Grover and Reyes, 2021; World Bank, 2023). A survey of 490 garment factories in Bangladesh highlights the risks associated with high export concentration and the limited ability of firms to reorient toward alternative markets. The survey finds that firms linked to the United States' market were 14 percentage points less likely to report production growth, whereas firms supplying EU were 16 percentage points more likely to post increases. Many firms will find it challenging to diversify export markets in the short term amid intensified global competition and uncertain demand conditions in major world markets (Business and Human Rights Centre, 2025).

Trade and economic policy directions continue to shift rapidly, and the policy landscape remains fluid. Rising trade protectionism is expected to weigh disproportionately on vulnerable populations and exacerbate existing socioeconomic inequalities.

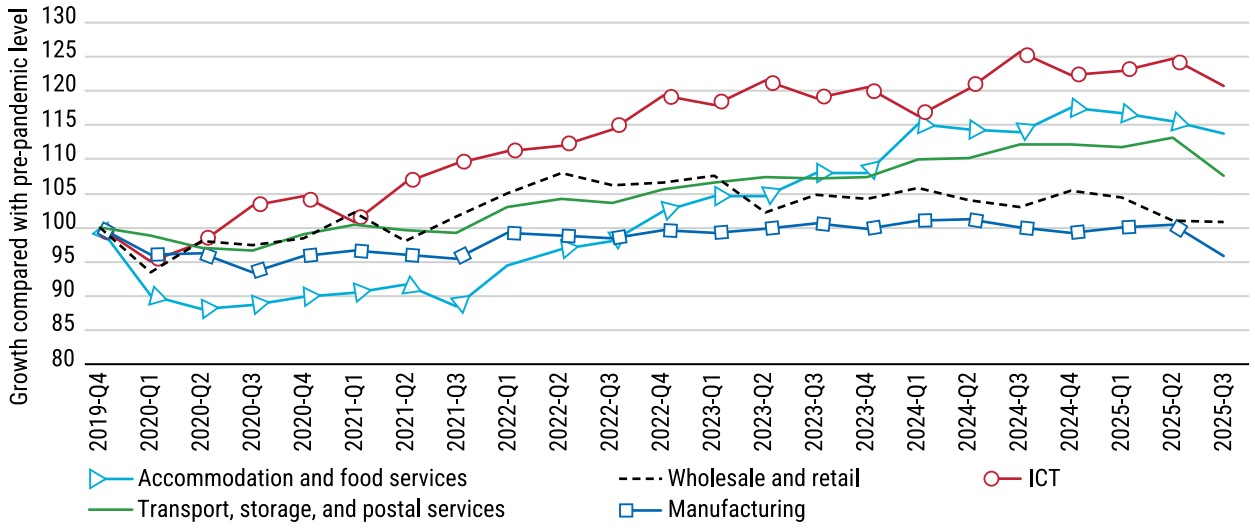
1.2.4. Steady overall employment conditions are masking disparities

Steady overall employment conditions mask disparities across economic sectors and worker groups. The region's employment growth in 2025 is estimated at 1.7%, up from 1.2% in 2024. At this pace, employment in Asia and the Pacific grew more swiftly than in all other developing regions. Meanwhile, the official unemployment rate remained at about 4.1% in 2025, unchanged from 2024 (ILO, 2026). While overall employment increased steadily, it was sluggish in some sectors. As of the third quarter of 2025, manufacturing employment in 10 Asian and Pacific economies with available data was about 2% below its pre-pandemic level (fig. 1.8). In contrast, employment in wholesale and retail trade, accommodation and food services, and information and communication services during the same period were about 2, 16 and 24% above their pre-pandemic levels, respectively.

Varying employment conditions, coupled with higher pay in high-technology sectors, could adversely impact poverty levels and widen income inequality in the region. The sluggish growth in manufacturing employment reflects the uncertainty in the trade environment as the sector is directly linked to trade and supply chains. The ILO estimates that over 27 million jobs in manufacturing or 9% of manufacturing employment in the region are directly linked to final demand in the United States, especially for garments and footwear (particularly in Bangladesh, Cambodia and Viet Nam), textiles (India), automobiles (the Republic of Korea) and electrical and optical equipment (Malaysia, Philippines, Singapore, Thailand and Viet Nam, among others). Many of these are labour-intensive industries with large shares of informal employment. Job losses in these sectors could undermine people's well-being considerably, especially in the absence of alternative opportunities.

To support lower-income workers, several countries recently raised minimum wage levels. The magnitude of these hikes often exceeded their respective inflation levels, ranging from 2.9% in Thailand to 5.7% in the National Capital Region (metro Manila) in the Philippines and 6.5% in Indonesia and more notable increases of 11.1% in Fiji, 13.0% in Malaysia, 21.0% in Samoa, 25.0% in Tajikistan and 56.0% in the Lao People's Democratic Republic.

Figure 1.8. Quarterly change in employment across selected sectors in developing economies in the Asia-Pacific region, Q4 2019–Q3 2025



Source: ESCAP based on CEIC.

Note: Based on data for 10 developing Asian and Pacific economies: Hong Kong, China; Kazakhstan; Macao, China; Malaysia; Philippines; Republic of Korea; Russian Federation; Singapore; Sri Lanka and Thailand.

Personal remittances, sent by Asian and Pacific workers employed outside of their home countries, continued to rise, cushioning the impact of vulnerable domestic employment conditions. Total remittance inflows to 16 Asian and Pacific economies with available data grew by 21% in the first half of 2025, after a 19% increase in the second half of 2024. Remittances have helped sustain consumption of many households but are facing headwinds (Visa, 2025). In India and the Philippines, about 40% of the transfers are used for essential spending, including medical expenses, of recipient households. However, as the world's largest remittance recipient of $137 billion in 2024, India could face a sizeable loss as the United States has levied a 1% tax on all remittances since January 2026. The growing use of digital remittance platforms has increased the speed, accessibility and cost efficiency of cross-border fund transfers, but the number of correspondent banking relationships in the Pacific has dropped by 60% since 2011 (double the world average) (World Bank, 2025e; Kirarock, 2025). This has not only undermined remittances, but also financial access related to trade, aid and disaster response.

More broadly, structural labour market challenges persist in many economies and constrain inclusive development. High youth unemployment,[12] large informal workforces and persistent skills mismatches continue to limit inclusive development in the region. Across the region, informal employment has persistently stood at about two thirds of employed persons over the last 10 years while the youth unemployment rate stood at 13.7% in 2024, representing nearly 36 million young people. In East Asia, the youth unemployment rate is more than four times higher than that of older adults and nearly 4 percentage points above the pre-pandemic rate (ILO, 2025b). Furthermore, around 20% of all youth in the region are not in employment, education or training; a rate reaching almost 31% among young women compared to 11% for young men (ILO, 2024). Among other implications, this is a missed opportunity to gain knowledge and experience for future employment options and makes young people particularly vulnerable amid global trade and policy uncertainty. Furthermore, it hampers the region's ability to achieve Sustainable Development Goal targets 8.5 and 8.6, which are aimed at achieving employment for all, including young people, and reducing the proportion of youth not in employment, education or training. Meanwhile, the overall labour force participation rate has fallen from 65.2% in 2004 to 60.7% in 2024 due to declining youth participation[13] and ageing populations. This poses

[12] The United Nations defines youth as persons aged between 15 and 24, while the International Labour Organization database on youth defines it as all individuals aged between 15 and 29.

[13] The decline in the rate of youth participation in the labour force could be due to young people staying longer in education (ILO, 2025b); and/or increasing levels of educational attainment among youth, resulting in educational mismatches and rising rates of graduate unemployment (ILO, 2024).

long-term fiscal and social security pressures and underscores the importance of enhancing productivity and labour force participation among women and older workers to sustain economic growth.

1.2.5. Broader development indicators suggest uneven progress

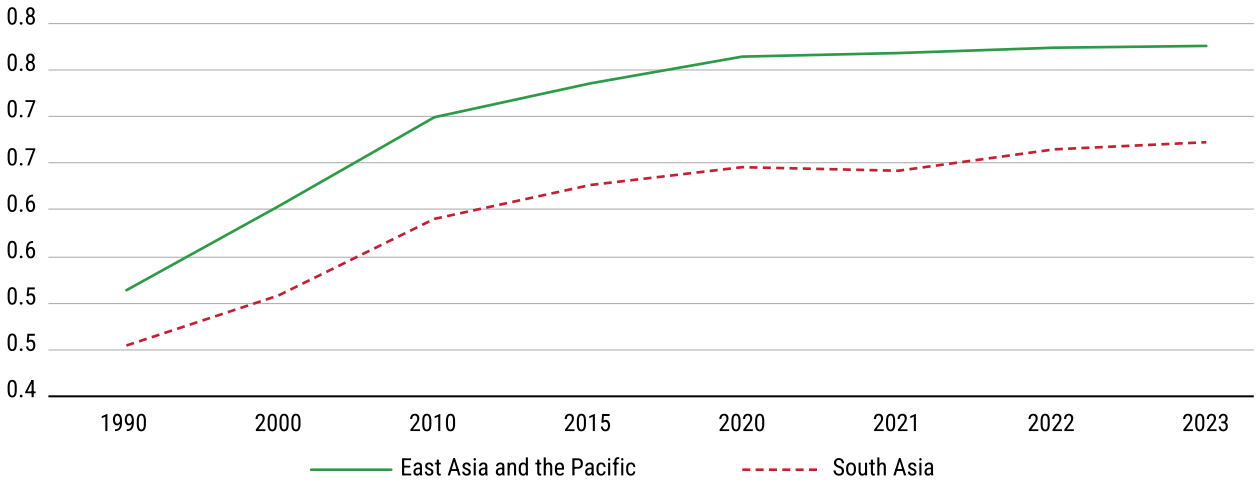
Although economic growth tends to be correlated with improved standards of living and well-being, it does not fully capture the extent of development in a country or region. Broader indicators are needed for this purpose (box 1.3). For instance, overall progress towards the SDGs was mixed for the Asia-Pacific region in 2024. Progress on climate action (Goal 13) has regressed, while progress has been slow on responsible consumption and production (Goal 12), life below water (Goal 14), reduced inequalities (Goal 10), quality education (Goal 4) and decent work and economic growth (Goal 8) (ESCAP, 2026). Similarly, while the region has shown rapid gains in human development since 1990, more recent data show a deceleration of progress, stalling a long-term trend of improvements in health, education and standards of living (fig. 1.9) (UNDP, 2025a).

The pace of poverty reduction has slowed and many disparities remain. While the extreme poverty headcount for low-income countries (set at a poverty line of $3 per day) for 2024 was estimated to be at an all-time low of 3.2% for Asia and the Pacific, and at 11.8%[14] for lower-middle income economies (set at $4.20 per day), the pace of poverty reduction has slowed since the COVID-19 pandemic (fig. 1.10). Moderate poverty rates for upper-middle income countries ($8.30 per day) at 46.7% remain a significant concern. Approximately 148 million people in the Asia-Pacific region are still living in extreme poverty. The current global trade and policy uncertainty and the recent conflict in the Middle East is casting a shadow on economic prospects, and eradicating extreme poverty for all people everywhere, as underscored in SDG 1, may remain an unfinished agenda. The region is also home to 500 million people living in multidimensional poverty, lacking access to adequate healthcare, education and basic public services (UNDP and OPHI, 2025). Moreover, moderate poverty remains a significant concern.

Limited data point to a decline in income inequality in some Asian and Pacific economies in 2024, after a series of shocks pushed income inequality up in over half of the region's developing countries between 2019 and 2022. In terms of gender disparities, the region's average female labour force participation stood at about 53% in 2024 and is still 23 percentage points below that of men. Inadequate social protection systems explain much of the inequality in the region, with only 36% of vulnerable people having any form of income security in 2024 (ESCAP, 2024a).

[14] ESCAP elaborations based on World Bank Poverty and Inequality Database, accessed on 3 March 2026.

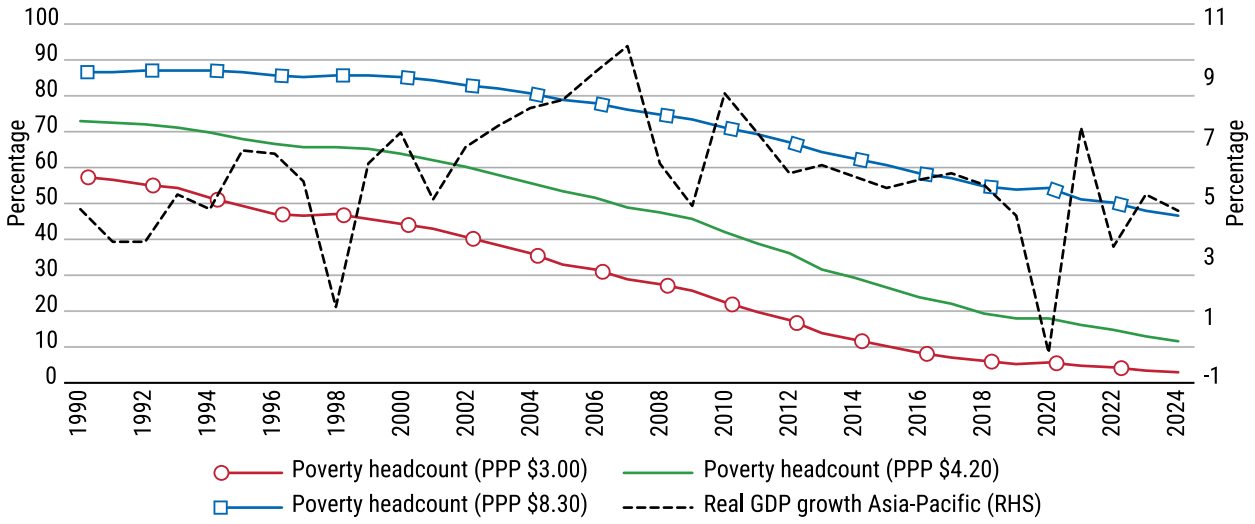
Figure 1.9. Human development trends in the Asia-Pacific region, 1990–2023



Source: UNDP (2025a).

Note: The HDI is calculated as the geometric mean of three normalized indices (health measured by life expectancy at birth, education measured by average years of schooling completed and expected years of schooling for children, and standard of living assessed by gross national income per capita), resulting in a score ranging from 0 to 1, where a higher score indicates better human development. The time intervals on the x-axis are based on the data intervals provided in the source.

Figure 1.10. Population living in poverty in the Asia-Pacific region, 1990–2024



Source: ESCAP elaborations based on World Bank Poverty and Inequality Database accessed on 3 March 2026.

Note: Based on the updated World Bank poverty lines as of June 2025, the international poverty line for low-income countries is set at $3 a day (from $2.15); for lower middle-income countries it is changed from $3.65 to $4.20 per day and for upper middle-income countries, it went up from $6.85 to $8.30 (World Bank, 2025a). RHS stands for right-hand side.

Box 1.3. Improving the measurement of GDP: complementing System of National Accounts (SNA) 2025 with Beyond GDP measures

What is new in SNA 2025?

The System of National Accounts 2025 (SNA 2025), adopted by the United Nations Statistical Commission in March 2025 (European Commission and others, 2025),[a] is an important update to the 2008 framework and an attempt to better reflect the realities of 21st century economies. It now includes stronger emphasis on well-being and sustainability, digitalization, data as economic assets, globalization, new financial instruments and arrangements, and informal and non-observed economic activity (fig. 1.3.A).

Figure 1.3.A. New recommendations from the 2025 SNA

Conceptual changes	Additional statistics on			
	Globalization	Digitalization	Well-being and sustainability	Financial risks and vulnerabilities
• Data as an asset • Depletion as cost of production • Consistency of sum-of-costs approach • Output of central banks • Renewable energy resources • Split-asset approach • Other changes	• Breakdowns of corporations into foreign-controlled, public and national private corporations • Extended supply and use tables (SUTs) • Data on special purpose entities when relevant	**Objective:** better, more complete measure of the digital economy through: 1. Increased breakdown of intellectual property products in the sequence of accounts 2. Digital SUTs 3. Supplementary breakdown of financial corporations subsectors to include fintech-related activities (if relevant) 4. Non-produced, non financial assets to include crypto assets without corresponding liability and non-fungible tokens	• Distributional accounts • More detailed labour market tables • Extended/thematic accounts for unpaid household service work, education and human capital and health • Compilation of statistics according to the SEEA Central Framework and Ecosystem Accounting • Distinguishing natural capital category of asset • Information on emission permits included as standard breakdown	• Supplementary tables on non-bank financial intermediation • Additional details for some financial instruments • Supplementary breakdowns for financial derivatives • From-whom-to-whom tables encouraged as supplementary tables

Source: Van Rompaey and Martinez (2024).

Box 1.3. continued.

These updates would help ensure that national accounts remain relevant for policymaking, enabling governments and analysts to track not only production, income and wealth, but also broader dimensions like sustainability and well-being. However, SNA 2025 remains a conceptual framework, and is not a detailed operational handbook. It provides definitions, accounting rules, classifications and structure. But compiling different series in every country is up to the countries themselves, and in practice, not all countries in the region are able to implement it fully. Differences in statistical capacity, data availability, institutional readiness and development priorities mean that progress may remain uneven and slow. Countries will require additional resources in terms of new data items, new surveys, development of methods and capacity-building. Some time series may need re-benchmarking so that new concepts remain coherent with previous data. Communication of changes to users, such as policymakers, media and analysts, will also be important to avoid misinterpretation.

How Beyond GDP measures can complement SNA 2025

Despite the updates, SNA 2025 continues to focus mainly on production and income. It does not fully reflect many other aspects of progress that matter to people, such as poverty, inequality, health, education, material and subjective well-being, environmental sustainability, social cohesion and the quality of governance. Relying on measuring GDP alone, even using the updated SNA 2025, risks overlooking gaps in well-being and hiding vulnerabilities that shape people's everyday lives.

These challenges have strengthened the case for developing Beyond GDP measures to assess economic and societal progress. As United Nations Deputy Secretary-General Amina Mohammed has reminded us: "Citizens should no longer be told that the metrics for the success of their society can be expressed in a single number." Beyond GDP measures will not replace GDP but will complement it since economic growth remains a core priority for many countries.

In 2025, economic growth in developing Asian and Pacific economies outpaced other regions overall, but remained uneven, with persistent inequality across countries. This underscores a long-standing limitation of GDP-focused policymaking, which diverts attention from sustainable and inclusive well-being. Despite decades of high-quality proposals to go beyond GDP, their integration into policy and public discourse has remained limited. In 2022, a group of United Nations experts produced a report, *Valuing What Counts*, which highlighted the SDG indicator framework alongside other established composite measures such as the Human Development Index and the System of Environmental-Economic Accounting, an SNA extension.[b] Additional examples, including the OECD Well-being Framework, the World Bank's Changing Wealth of Nations, the Global Multidimensional Poverty Index and the Multidimensional Vulnerability Index, illustrate practical pathways for broadening measurement while building on countries' existing statistical systems.

Beyond GDP approaches complement SNA 2025 by bringing these wider concerns into view. They are not meant to replace GDP or the SNA but build on them by linking economic performance with well-being, inclusion and sustainability. In doing so, they help reflect social values and people's lived experiences.

[a] See European Commission, IMF, OECD, United Nations and World Bank (2025).
[b] See United Nations – CEB (2022).

1.2.6. Inflation continues to decline, allowing room for further monetary easing

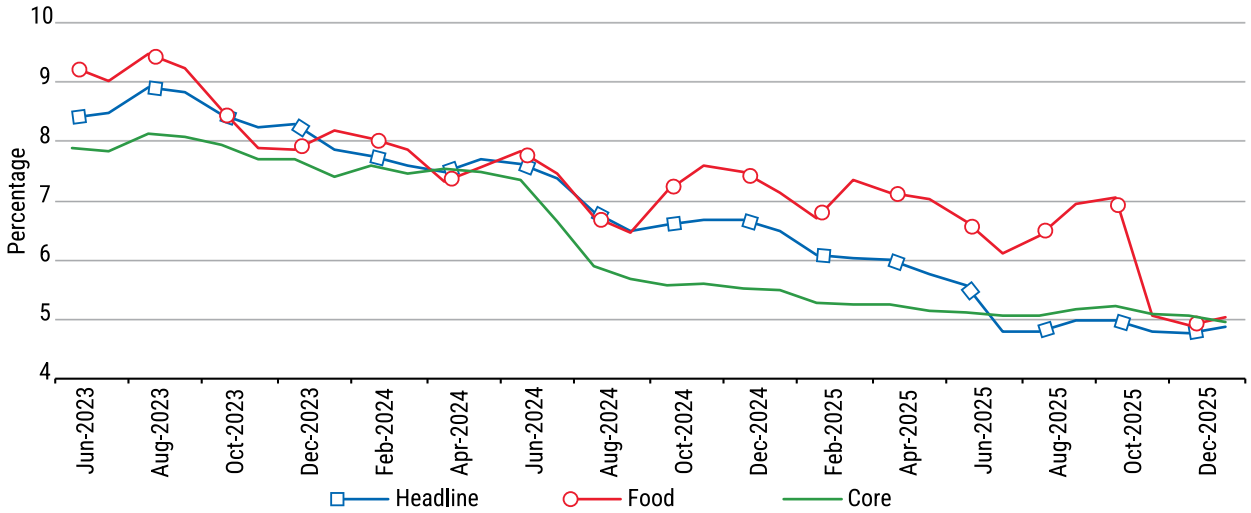
The average headline inflation rate in Asia and the Pacific decreased to 3.5% in 2025 from 4.9% in 2024 and 5.4% in 2023. The overall downward trend is mainly driven by lower global commodity prices and monetary policy tightening that began in the second half of 2024 (fig. 1.11). Several other factors also contributed to lower inflation. Examples include favourable agricultural harvests in India and Viet Nam, the lifting of rice export restrictions by India, a more stable exchange rate in the Lao People's Democratic Republic and price subsidies of selected essential items in Fiji, Indonesia and the Philippines. On the other hand, various country-specific factors drove inflation up, such as currency depreciations in Fiji, Kazakhstan and Papua New Guinea, sanctions-related supply constraints in the Islamic Republic of Iran, devastating floods in Pakistan, supply bottlenecks in the Russian Federation and higher electricity prices in Palau and Solomon Islands.

The overall lower inflation masks disparities among countries, even within subregions. Disinflation (reduction in the rate of inflation) was pronounced in East and North-East Asia with subdued domestic demand in China and the Republic of Korea, while inflation remained high at 8.6% in Mongolia due to higher cost of services. In North and Central Asia, higher inflation in 2025 - was broadly driven by rising food and utility prices, as well as currency depreciation in countries such as Kazakhstan. In the Pacific Island developing economies, inflation edged up in Papua New Guinea in the first quarter of 2025 as currency depreciation contributed to imported food inflation. The subregion's average inflation was tempered by lower inflation in Fiji due to fiscal measures such as bus fare subsidies and reduced duties on food items. In South-East Asia, due to lower food and fuel prices, inflation moderated to 2.1% in 2025 on average, from 2.8% in 2024. In South and South-West Asia, lower inflation reflects easing food prices resulting from favourable harvests. However, inflation remained high in the Islamic Republic of Iran due to persistent high fiscal deficits, currency depreciation and sanctions-related supply constraints, and in Türkiye, stemming from elevated price pressures in housing, food and transport.

Encouragingly, inflation declined sharply in economies that previously faced strong price pressures. In the Lao People's Democratic Republic, a more stable exchange rate helped bring down inflation to 7.9% in 2025 from 23.3% in 2024. Similarly, in Pakistan, inflation declined from 23.8% in 2024 to 4.6% in 2025 due to lagged impact of tight monetary policy, fiscal consolidation and improved crop supplies. However, the floods in June 2025 led to an increase in price pressures in the second half of the year.

Declining inflation rates have allowed many central banks in the region to ease their monetary policy stance in 2025. The pace and extent of easing varied across countries, reflecting differences in domestic conditions, financial stability concerns and ability

Figure 1.11. Average headline, core and food inflation rates in developing Asian and Pacific economies, June 2023–January 2026



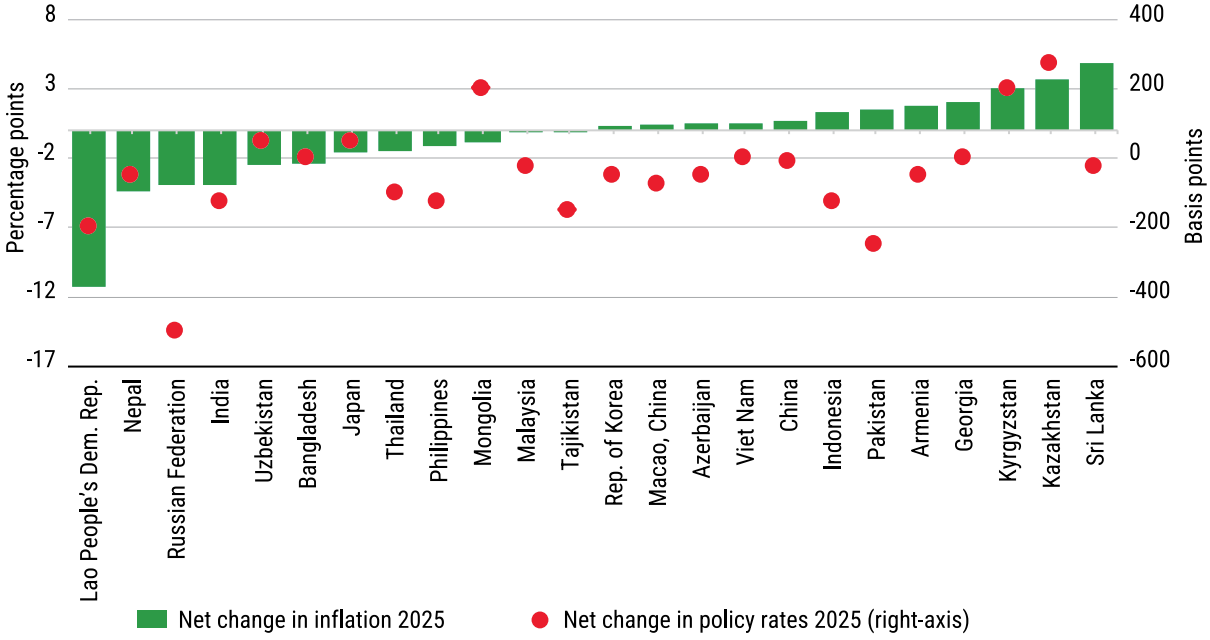
Source: ESCAP based on CEIC.

Note: The headline and food inflation rates are based on a simple average of 29 Asian and Pacific developing economies; the core inflation rate is based on a simple average of 18 such economies.

to anchor inflation expectations (fig. 1.12). Overall, central banks have taken pragmatic, country-specific approaches amid global uncertainty and an unclear monetary policy outlook in the United States. Central banks' abilities to maintain inflation and price stability affect inflation-adjusted wage growth and thus workers' purchasing power. During the high-inflation period of 2022–2023, the annual average wages in the region grew by only 1.4–1.6% in real terms. This increased to 2.9% in 2024 when inflation was lower, although it is still lower than the average 3.5% during the pre-pandemic period of 2015-2019.

Amid an overall decline in inflation, several Asian and Pacific countries are facing deflationary pressures. Since late 2022, producer prices in China have contracted for more than 40 consecutive months, while the headline consumer inflation rate has repeatedly turned negative. Thailand registered monthly deflation between 0.2–0.6% between April and November 2025, with core inflation below 1%. Brunei Darussalam has recorded deflation ranging between 0.1-0.8% since February 2024 (except for February, September and October 2025). By mid-2025, headline inflation in Fiji, Malaysia, the Philippines, the Republic of Korea and Singapore trended towards their post-pandemic lows. Box 1.4 presents a long-term outlook on deflation and production overcapacity.

Figure 1.12. Net change in inflation and policy rates in 2025, selected Asian and Pacific economies



Source: ESCAP based on CEIC.

Box 1.4. Deflation and production overcapacity: a long-term assessment

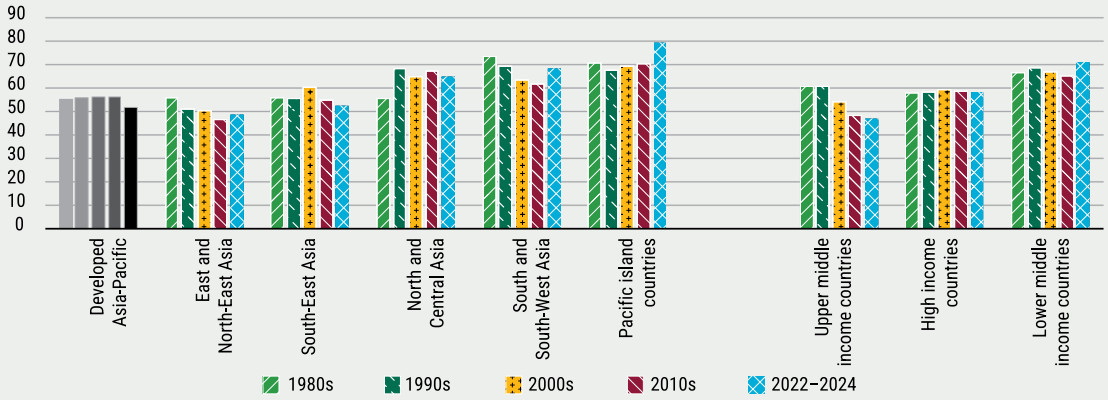
Much of the deflationary pressure reflects cyclical and external factors. For many countries in the region, fiscal consolidation, corporate deleveraging (reduction of debt levels) and monetary tightening in response to surging inflation during 2022–2023 have contributed to stronger-than-expected disinflationary pressures. Recently, rising global trade tensions also increased economic uncertainty, resulting in more cautious investment and consumption decisions. Country-specific factors which have constrained domestic demand also played a role, such as housing market downturns in China and the Republic of Korea and sluggish tourism recovery in the Philippines and Thailand.

Long-term structural factors also contribute. For decades, the Asia-Pacific region has emphasized export-led, industry-based economic growth, with policy incentives that favour

Box 1.4. continued.

capital formation over household consumption. This has led to persistent production overcapacity in some highly industrialized countries where household consumption accounts for a relatively small share of gross domestic product (fig. 1.4.A). This pattern is in line with the global trend in which upper-middle-income economies tend to prioritize capital investment and public goods over household consumption.

Figure 1.4.A. Household consumption as share of gross domestic product



Source: ESCAP, based on the World Development Indicators database.

Production overcapacity is likely to persist in many economies of the region for at least two reasons. First, factors such as countries' aspirations to achieve high-income status – intensifying global economic competition and technological decoupling – suggest that there is a growing need for Asian and Pacific economies to upgrade into new sectors of higher productivity and technological sophistication which offer large wage potentials. This would require countries to invest more in strategic sectors. Yet these sectors typically require large upfront investments with uncertain or delayed returns. This may weaken investment returns, dampen economic growth and deepen overcapacity for a period before the new sectors mature and yield sizeable benefits. Second, further productivity gains from advances in automation[a] and artificial intelligence could ease supply constraints. This would allow the region's vast and flexible manufacturing networks to continue to meet future global demand, thus lowering global inflation expectations.[b]

Nonetheless, uncertainties remain. Although research suggests that domestic inflation increasingly reflects global supply conditions,[c] rising global trade protectionism could limit cross-border disinflationary impacts. Climate change, policy actions to address it, and rising geopolitical tensions may also disrupt supply chains and introduce new inflationary pressures. Finally, inflation in the services sector may offset disinflation in the prices of goods, as consumer demand increasingly shifts towards consumption of services rather than goods.

Persistent deflation has important policy implications, as it tends to increase debt-service burdens in real terms and discourage consumption and investment, leading to adverse employment impacts. A debt-deflation spiral may weaken the balance sheets of households and firms, which would result in deleveraging and potentially undermining the effectiveness of fiscal and monetary policy support. To shift towards more balanced, consumption-led development, governments can prioritize targeted income support and social security coverage for poorer and more vulnerable groups and investments in young people.

[a] Between 2021 and 2024, the Asia-Pacific region installed around 382,000–404,000 industrial robots per year, compared to 50,000–56,000 in the Americas and 82,000–92,000 in Europe. See IFR (2025).

[b] The region's expanding production base has already contributed to the "flattening" of the Phillips Curve in many economies where higher domestic employment has generated less inflationary pressure. See Forbes (2019); and Obstfeld (2019).

[c] Imported intermediate and final goods affect domestic price setting, while foreign competition also influences the pricing behaviour of domestic producers. See Auer, Borio and Filardo (2017).

1.2.7. Balancing fiscal sustainability and supporting economic development remains challenging for many developing economies

Increased fiscal spending in response to recent shocks, together with slower economic growth and thus lower tax revenues, have resulted in an overall increase in fiscal deficits in the region. The average fiscal deficit-to-GDP ratio has risen to an estimated 3.6% and the public debt-to-GDP ratio has increased to 47.0% in 2025, compared to 0.4% and 40.0% in 2019, respectively. This relatively higher average fiscal deficit and public debt levels are not of major concern as long as they reflect essential spending on people and productive investments.[15] Nevertheless, some countries have weaker capabilities to finance their deficits and find it difficult to sustain even lower levels of public debt. Out of 21 Asian and Pacific countries that have undergone a debt sustainability analysis for low-income countries by the International Monetary Fund and the World Bank, one has been deemed to be in debt distress and eight have been rated as having a high risk of debt distress,[16] many of which are small island developing States in the Pacific.

Many economies in the region have rolled out fiscal, monetary and financing measures to cope with spillovers from rising trade protectionism (box 1.4). For example, in China, fiscal measures have recently focused on boosting domestic consumption, such as consumer goods trade-in, or in India, tax relief and GST reforms. In Indonesia, fiscal measures aimed to stimulate investment, job creation and social protection. On the other hand, Malaysia, Philippines and Viet Nam are aiming to reduce their deficits and increase fiscal resilience through revenue mobilization measures such as enhancing tax collection efficiency and gradual reduction of untargeted subsidies.

Worryingly, the interest payments on outstanding debt have increased in several Asian and Pacific countries. In 2024, the median net interest payments-to-revenues rate was 5.6%, with interest payments consuming at least 10% of government revenue in 9 out of 33 Asian and Pacific developing countries (fig. 1.13). Moreover, net interest payments are higher than public spending on education and health for over half of the population in the region (UNCTAD, 2025b). Several economies in the Pacific, such as Fiji, Papua New Guinea and Tonga, also face high debt repayment burdens. The subregion's development funding continues to rely on national trust funds financed by international development partners as well as volatile non-tax revenues, such as fishing licenses. A likely decrease in official development assistance would further reduce the capacity of small Pacific islands to invest in climate resilience and sustainable development while managing the debt repayment burden.

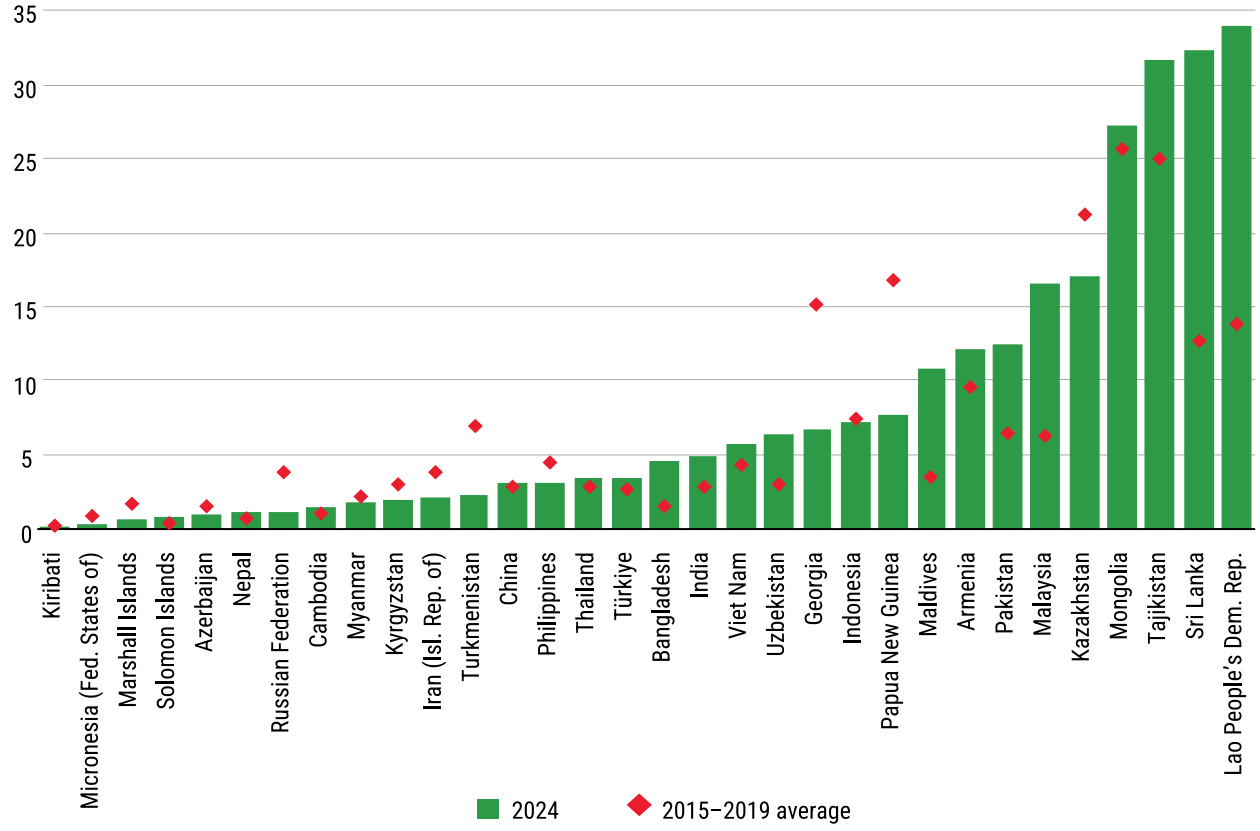
The trend in interest payments at the global level differs markedly between developed and developing countries. The median net interest payments-to-revenues ratio of the general government[17] were at similar values for both groups of countries in 2010. But it dropped by almost 40% in developed economies by 2024 while it almost doubled in developing countries. The increase was largest for the least developed countries (fig. 1.14) (Isgut, 2025). There are two key explanations for this divergence. First, the dramatic decline in interest rates in developed countries after the global financial crisis in 2008 and again after the COVID-19 pandemic. Second, the shift of the sources of external sovereign financing in developing countries towards bond debt and away from official debt from multilateral and bilateral creditors. While bond debt provided additional financing, it is more expensive and has reduced the fiscal space that could be allocated to investment in sustainable development.

[15] For further details, see ESCAP (2023).

[16] Afghanistan, Kiribati, Maldives, Marshall Islands, Papua New Guinea, Tajikistan, Tonga and Tuvalu.

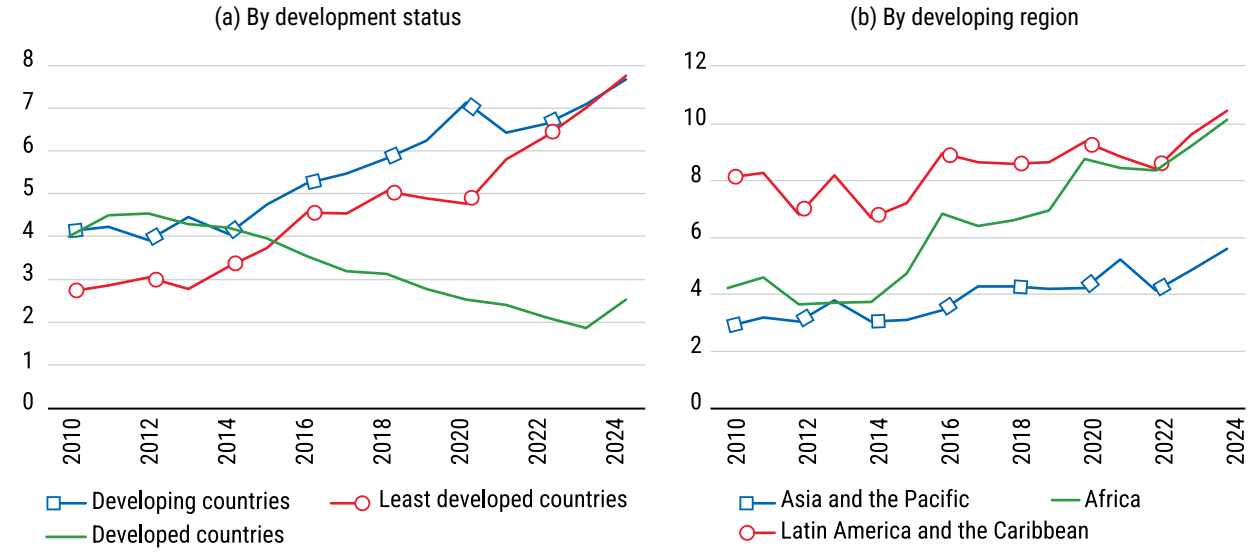
[17] "General government" refers to the entire public sector including all levels of government – central, state and local (based on the IMF Government Finance Statistics Manual 2001).

Figure 1.13. Interest payments to revenue in 2024, compared to the 2015–2019 average, selected economies in the Asia-Pacific region



Source: ESCAP based on IMF, World Economic Outlook database, October 2025.

Figure 1.14. Median general government interest payments to revenues ratio by development status, 2010–2024



Source: Isgut (2025) and UNCTAD (2025b).

Box 1.5. Recent fiscal measures introduced to support economies, workers and households

China: Adopted a stimulus package that includes a trade-in and upgrade policy for vehicles and electric bikes as well as price subsidies of around 15–20% for the purchase of mid-range smartphones and home appliances. The Government expanded the stimulus funding from 300 billion yuan ($43 billion) in 2025 to 500 billion yuan ($71 billion) in 2026. Likewise, following the completion of the $41.5 billion (0.22% of GDP) allocation in 2025, a further 62.5 billion yuan ($9 billion) has been indicated for 2026 to support consumer goods trade-ins programmes, financed through the issuance of ultra-long sovereign bonds (Xinhua, 2025).

Fiji: Provided a Fiji dollar (F$)200 (approximately US$90) payment per child from households with incomes below F$50,000 (approx. US$23,000) under the 2025 Back-to-School Support initiative to help cover school costs such as uniforms, bags, shoes and stationery. A total of F$41 million (approx. US$19 million) has been disbursed to over 200,000 students nationwide (Fiji Ministry of Finance, 2025).

India: Announced a 3% increase in Dearness Allowance and Relief for 2.8 million state employees and pensioners, effective July 2025, at a fiscal cost of 1,960 crore rupee ($235 million) through March 2026.

Indonesia: Introduced a $1.5 billion stimulus package (0.11% of GDP), which includes wage subsidies for 17.3 million low-income workers, additional funding for food assistance programmes, discounts on toll fares and transport tickets, and workplace accident insurance premiums for labour-intensive sectors. In September 2025, the Government introduced the "8+4+5" stimulus package, allocating 16.23 trillion rupiah ($989 million) to food assistance and job-creation measures for over 600,000 workers under eight acceleration programmes. Four programmes continue into 2026, including tax incentives for 542,000 MSME taxpayers amounting to 2 trillion rupiah (around $119 million).

Japan: The Government's initial emergency fiscal response drew about $6.3 billion (0.16% of GDP) from the budget reserve fund to support corporate financing in critical sectors, such as automobile and steel, and to stimulate domestic consumption. This includes $1.9 billion subsidies for electricity and gas bills in the second quarter of 2025. Another $675 million from the reserve fund is provided to local government subsidies to support households amid higher inflation. In late November 2025, a large $136 billion stimulus package was approved to support households facing cost-of-living pressures, consumers and families, local governments, small and medium-sized enterprises and employers, and strategic industries such as automobiles, steel, semiconductors and AI, through measures combining energy subsidies, income support and investment incentives.

Kazakhstan: Imposed a temporary moratorium on further increases in gasoline, diesel and utility tariffs from October 2025 until at least March 2026 or when inflation stabilizes, while doubling funding for food price stabilization and strengthening regional oversight to curb unjustified markups on essential goods.

Kyrgyzstan: Introduced temporary restrictions on meat exports and price controls on beef and lamb to curb inflation.

Malaysia: Announced new measures aimed at easing the cost of living, including a one-time cash handout of about $24 for all adults, fuel price cuts and toll fare freezing. The package is financed through a combination of subsidy reforms (phasing out the blanket fuel subsidies) and tax hikes (sales tax on certain luxury items and a higher services tax rate). In the fourth quarter of 2025, the Government unveiled the largest-ever budget for 2026 while balancing fiscal discipline and cost-of-living relief amounting to $144 billion.

Box 1.5. continued.

Pakistan: Reached a staff-level agreement with the IMF for a $1.2 billion disbursement (under the Extended Fund Facility and the Resilience and Sustainability Facility) to bolster stabilization and climate resilience policies, bringing the total IMF disbursements to about $3.3 billion.

Papua New Guinea: Disbursed $160 million, the 2025 Household Assistance Package, with measures such as goods and services tax relief on essential goods, a permanent $4,700 personal tax-free threshold, increased stamp duty thresholds for first home buyers and school project fee assistance (Papua New Guinea, Department of Prime Minister and National Executive Council, 2025).

Philippines: Increased rice price stabilization funds by 30 billion peso ($515 million) and expanded agricultural risk mitigation and assistance for persons with disabilities. These measures target food security, inflation control and social protection. In line with a whole-of-government approach, headline inflation in the Philippines eased to 1.5% in November 2025, below the 2–4% target range. Targeted measures to stabilize food prices, including a 15% rice import tariff, expanded access to affordable rice, strengthened market monitoring and temporary relief on basic utilities for two months, helped moderate cost pressures on households.

Republic of Korea: Implemented a 31.8 trillion won ($23 billion) stimulus package featuring cash transfers, consumer coupons and AI infrastructure investments. A one-time 150,000 won ($108) payment was distributed to boost consumption, while new treasury bonds financed part of the fiscal deficit. The government also approved 128.9 billion won ($93 million) in pre-school subsidies, advancing its goal of universal early education by 2027.

Thailand: Introduced a $4.8 billion stimulus package (0.91% of GDP), funded by the fiscal budget. Among others, the package comprises water and road infrastructure projects which could create up to 7.4 million jobs, financial support for the tourism sector and additional funding to promote exports and digital innovation in underserved regions. In December 2025, the Government also disbursed around $186 million in direct flood relief to more than 730,000 households across nine southern provinces affected by 2025 flooding.

1.3. Subregional economic highlights

1.3.1. East and North-East Asia

The pace of economic expansion in East and North-East Asia moderated in 2025, compared to previous years. Subregional GDP growth is estimated at 4.6%, supported by a mix of household demand, exports and services sector activity, though growth performance and drivers vary across economies.

China is projected to grow by 5% in 2025, underpinned by resilient exports, particularly through increased trade with South-East Asia and the European Union, and policy measures aimed at boosting domestic consumption and investment. However, persistent weakness in the property sector and subdued household demand continue to weigh on overall momentum. Mongolia stands out as one of the faster-growing economies, with GDP growth at 6.5%, driven by mineral exports, infrastructure development and mining investment. In the Republic of Korea, GDP growth is driven mainly by strong exports of semiconductors and electronics, alongside stable domestic demand.

Inflation across East and North-East Asia, estimated at around 0.3% in 2025, remained moderate and below the Asia-Pacific regional average. Price pressures are subdued in China and remain moderate in the Republic of Korea, while stronger domestic inflation in Mongolia has a limited impact on the subregional average.

1.3.2. North and Central Asia

Economic growth in North and Central Asia declined to an estimated 2.3% in 2025, compared to 4.7% in 2024. This largely reflects the situation in the Russian Federation – the subregion's largest economy. Growth varied markedly across countries. Armenia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan recorded robust expansion, supported by strong domestic demand, rising wages, public investment, remittance inflows and expanding services and industrial output. By contrast, growth in the Russian Federation has slowed to 0.8%, constrained by heavy reliance on hydrocarbons, labour shortages and demographic pressures due to war mobilization, weak productivity outside energy and defence, sanctions-related trade and financial frictions and declining energy export revenues.

Kazakhstan's strong performance in 2025 was driven by higher oil production at the Tengiz field, alongside broad expansion across construction, services, transport and industry. In Kyrgyzstan, growth was underpinned by strong public investment and buoyant domestic demand, supported by rising wages and continued increases in remittances (EBRD, 2025). Similarly, in Tajikistan, sustained remittance inflows continue to bolster household consumption (EBRD, 2025).

Inflation in the subregion is estimated at 8.7% in 2025, with Kazakhstan and the Russian Federation contributing most to upward pressures. Inflation in the Russian Federation remains elevated due to supply bottlenecks and administered price adjustments (price set by the Government rather than by supply and demand), while Kazakhstan faces pressures from higher food and energy costs. In contrast, inflation in Kyrgyzstan, Tajikistan and Uzbekistan were driven mainly by strong domestic demand and remittance-fueled consumption.

1.3.3. The Pacific

Stronger economic growth across Pacific island developing economies in 2025, compared with 2024, was driven by agricultural and commodity exports, tourism and public investment. Consumption was supported by rising incomes and sustained remittance inflows. Growth in the subregion's largest economy, Papua New Guinea, which accounts for around three-quarters of subregional output growth, was underpinned by higher gold and liquefied natural gas production, alongside stronger exports of coffee, cocoa and palm oil, benefiting from higher global prices and unaffected by United States' tariffs. In Fiji, growth eased slightly from 2024 levels due to declines in several agricultural and mineral exports but was supported by increased visitor arrivals and timber production, alongside a pickup in construction and planned investment. Tourism continued to support growth in Palau and Samoa despite growing at a slower pace, while improved air connectivity led to this sector exceeding expectations in the Cook Islands and Vanuatu. Public infrastructure spending underpinned growth in Kiribati, Palau and Tuvalu, as did post-earthquake reconstruction in Vanuatu.

Despite lower global energy prices, inflation in the subregion increased due to domestic factors and high reliance on imported food and fuel. Currency depreciation in Papua New Guinea, wage increases in Kiribati, Federated States of Micronesia and Tuvalu, higher electricity prices in Palau and Solomon Islands, and higher prices of local food items due to insufficient supply in Samoa, contributed to inflation. On the other hand, inflation eased in Fiji in 2025 due to fiscal measures that lowered transport and food costs.

Development funding remains critical for many Pacific island developing economies where budgets rely heavily on external support, such as the national trust funds of Kiribati and Tuvalu, and variable non-tax revenues (including fishing licenses, returns on other assets and remittances), over which governments have limited policy influence. This means that sound fiscal positions are likely to remain at risk. The Pacific Islands aid landscape faces a flat financing outlook dependent on a narrowing pool of partners. Within the Pacific islands, while official development assistance (ODA) amounted to over $200 billion in 2024, this was a decrease of about 7% from 2023 (UNDP, 2025b). As major global providers of ODA announced cuts in development funding in 2025 (OECD, 2025; UNDP, 2025b), a strong likelihood of further reductions in ODA to Pacific small island developing states in the near term will pose serious risks to the region's development and resilience efforts.

1.3.4. South-East Asia

Economies of the South-East Asian subregion continued to perform strongly in 2025, expanding by an estimated 4.8%, well above the global average of around 2.7–3.0%. Viet Nam continues to record robust growth, driven by manufacturing and electronics exports, while Myanmar remains constrained due to domestic challenges. At the subregional level, growth is underpinned by domestic demand, a vibrant services sector and sustained investment in infrastructure, manufacturing capacity and urban development, with exports and tourism continuing to generate employment and foreign exchange.

Despite headwinds from tariff hikes by the United States, the subregion has benefited from global supply-chain reconfiguration, which has boosted manufacturing, exports and foreign direct investment, particularly in electronics and industrial sectors. Deep regional trade integration and strong investment ties with major partners, especially China and the United States, have been central to sustaining momentum. ASEAN, for instance, has remained China's largest trading partner, with bilateral trade reaching about $1 trillion in 2024, while the United States is the subregion's largest source of foreign investment, with an investment stock of $476 billion in 2023. This investment base supports key sectors such as semiconductors, finance, digital infrastructure and data centres, including the expansion of United States' banks in Singapore (Casanovas, 2025).

The earthquake that struck Myanmar in March 2025 caused significant loss of life, displacement, damage to infrastructure and exacerbated the already difficult economic conditions. The earthquake also affected parts of Thailand where the physical damage was considerably less than in Myanmar, but the tourism sector suffered from travel cancellations due to safety concerns. Heavy rainfall and flooding in the southern provinces of Thailand in November 2025 had a more pronounced economic impact, particularly on trade and tourism, with estimated economic losses of 40 billion baht (approximately $1.2 billion) (University of the Thai Chamber of Commerce, cited in The Nation, 2025).

Indonesia, the subregion's largest economy, is projected to grow by 5.1% in 2025, demonstrating resilience despite global uncertainties. While household consumption has moderated, exports and services remain strong, and high-value exports such as electronics, palm oil and furniture have been largely unaffected by United States' tariff hikes. Multiple stimulus packages introduced in 2025, including cash transfers, cash-for-work programmes, rice distribution, travel discounts, tax relief and support for small businesses, have helped sustain consumption and support growth into 2026.

A notable feature of South-East Asia's growth is its coexistence with disinflation, reflecting supply-side improvements, stable global commodity prices, competitive exchange rates and efficient regional trade. Inflation in the Philippines, for example, is projected at 1.7% in 2025, well below the central bank's 2–4% target.

Smaller economies also contribute to regional resilience: Cambodia's garment sector remains resilient despite United States' tariffs, generating $13.6 billion in export

earnings in the first 10 months of 2025, up 20% year-on-year (Ministry of Commerce Cambodia, in Kunmakara, 2025). However, higher tariffs and external demand uncertainty weigh on profitability and investment. The Lao People's Democratic Republic continues to grow steadily, supported mainly by hydropower exports to regional markets.

1.3.5. South and South-West Asia

Economies in South and South-West Asia grew by 5.4% in 2025, compared to 5.2% in 2024, driven largely by strong growth in India and improved macroeconomic stability in Pakistan and Sri Lanka. India's growth edged up to 7.4% in 2025, supported by robust consumption, especially from the rural economy along with goods and services tax rate cuts, and export frontloading ahead of United States' tariffs. However, economic activities moderated in the second half of 2025 as exports to the United States declined by 25% following the introduction of 50% tariffs in August 2025. The services sector remained a key growth driver.

Hydropower generation and tourism drove economic expansion in Bhutan and Nepal, though civil unrest in Nepal in September 2025 weakened tourism and slowed economic momentum for the remainder of the year. Improved macroeconomic stability in Pakistan and Sri Lanka led to steady growth of 3.0% and 4.6%, respectively. The floods in Pakistan in June 2025 claimed thousands of lives, displaced millions and destroyed crops, homes and infrastructure (Pakistan, 2025a). Inflation spiked following the floods, while large-scale manufacturing recorded sound performance (State Bank of Pakistan, 2025). In Sri Lanka, economic expansion was driven by resilient exports, increased consumption and investments, amid stable inflation and strong credit growth as business sentiment improved. Relief measures were introduced to cushion the impacts of cyclone Ditwah that struck in November 2025 (Central Bank of Sri Lanka, 2025). While the economy of Maldives expanded modestly on the back of robust growth in tourism and fisheries, government debt obligations have risen due to higher domestic debt and interest payments (Maldives Monetary Authority, 2025; World Bank, 2025c). Economic expansion in Türkiye was mainly supported by growth in domestic demand and exports while inflation declined with tighter monetary and fiscal policies (Turkish Statistical Institute, 2025).

In contrast, Bangladesh and the Islamic Republic of Iran experienced economic deceleration. Bangladesh's economy slowed as export growth weakened and demand softened amid political tensions, as well as supply disruptions from flooding and labour disputes. In Afghanistan, economic growth is supported by mining and construction and the largest influx of 4.7 million returnees between September 2023 and July 2025, whose demand is stimulating activity in the services and industry sectors, but also expanding the pool of unemployed youth (World Bank, 2025d). Despite the economic expansion, persistent poverty, restrictions on women's economic participation and education, and insufficient domestic revenues to offset the decline in foreign aid continue to weigh on the country's progress. The economy of the Islamic Republic of Iran expanded moderately in 2025 amid shrinking revenues from lower global oil prices and demand, international sanctions and surging inflation due to currency depreciation.

1.4. Economic outlook, near-term risks and emerging challenges

1.4.1. High trade tariffs, the recent conflict in the Middle East and associated policy uncertainty is weighing on the growth trajectory of economies worldwide, including in the Asia-Pacific region

The rate of global economic growth is projected to decline slightly in the near term, to 2.7% in 2026, which is lower than 2.8% in 2025, before edging up to 2.9% in 2027 (United Nations, 2026). This is lower than the historical average of 3.2% growth during 2010-2019. Global inflation is expected to decrease amid softer demand and lower energy prices.[18]

The growth in the volume of global merchandise trade, before the recent conflict in the Middle East, was projected to decline to 2.2% in 2026 from an estimated 3.8% in 2025 (United Nations, 2026), as frontloading effects dissipate and higher tariffs by the United States take full effect. Growth in the global services trade was also expected to moderate to 4.4% in 2026 from 4.6% in 2025 due to lower demand for transport and logistics (WTO, 2025a). Digital services were expected to remain resilient as they are not subject to tariffs. However, the

[18] Please note that these projections were finalized before the latest escalation in conflict in the Middle East. This conflict, if it persists, may have severe adverse and multifaceted impacts on economies across the globe.

situation has changed drastically since the conflict in the Middle East began on 28 February 2026, and will have an adverse effect on the trade outlook.

In broad terms, the major, near-term, anticipated impacts of the conflict in the Middle East include: (i) higher inflation and interest rates; (ii) weaker goods exports, tourists arrivals and worker remittances, and increase in import bills and rise in the balance of payments risks for some countries; (iii) slower economic growth, job losses and possibly wage cuts; (iv) reduced fiscal space as spending needs increase while revenues decline due to weaker economic growth, and increase in debt vulnerabilities as debt servicing costs go up due to higher interest rates.

Under these circumstances and based on an initial and provisional assessment, the average economic growth in Asian and Pacific developing countries is projected to decline further to 4.0% in 2026. This assumes that the conflict will not last for more than a few months and there will be at least some partial de-escalation and easing of tensions later in 2026. If this turns out to be the case, average economic growth may inch up to 4.3% in 2027. However, given the current uncertain and fluid situation in the Middle East, these are highly provisional and indicative estimates only.

The overall average inflation rate is projected to increase to 4.6% in 2026 on the back of higher food and energy prices due to the recent conflict in the Middle East. Assuming that the conflict will not last for more than a few months and there will be at least some partial de-escalation and easing of tensions, inflation may decline to 3.5% in 2027. Before the conflict in the Middle East began, commodity prices were projected to decline by 7% in 2026 while energy prices were also expected to decline by 10% in 2026 on top of the 12% decline recorded in 2025. However, the conflict has led to a surge in the price of Brent crude oil to $90 - $100 range in March 2026 from an average of around $69 per barrel before the conflict started. The disruptions to trading routes and shipments will lead to higher commodity prices, especially food and fertilizers in 2026.

Introducing fiscal stimuli to support people and businesses would be challenging for many countries in the region as both fiscal deficits and public debt levels have risen in recent years. However, there could be room for further policy interest rate reductions in some countries, though such opportunities may also be disappearing because of the likely inflationary impact of the recent conflict in the Middle East.

Table 1.1. Growth and inflation projections, by region, subregion, development status and economy, 2024–2027*

Region, subregions, countries and territories	Real GDP growth				Inflation[a]			
	2024	2025	2026[b]	2027[c]	2024	2025	2026[b]	2027[c]
	(Percentage)							
Total ESCAP region	**4.0**	**4.1**	**3.5**	**3.8**	**4.6**	**3.4**	**4.2**	**3.3**
Asia-Pacific developing economies[d]	**4.8**	**4.6**	**4.0**	**4.3**	**4.9**	**3.5**	**4.6**	**3.5**
Asia-Pacific developed economies[e]	**0.1**	**1.4**	**1.1**	**1.2**	**2.8**	**3.1**	**2.4**	**2.2**
East and North-East Asia[f]	**3.8**	**4.0**	**3.4**	**3.7**	**0.8**	**0.8**	**1.6**	**1.3**
East and North-East Asia (excluding Japan)[f]	**4.7**	**4.6**	**4.0**	**4.2**	**0.4**	**0.3**	**1.5**	**1.1**
China	5.0	5.0	4.3	4.5	0.2	0.1	1.3	1.0
Democratic People's Republic of Korea	..	..	..	..	..	..	..	..
Hong Kong, China	2.5	3.5	2.1	2.2	1.7	1.4	2.0	2.2
Japan	-0.2	1.2	0.8	1.0	2.7	3.2	1.9	2.0
Macao, China	8.8	4.7	2.8	3.5	0.7	0.3	1.1	1.3
Mongolia	5.1	6.5	5.5	5.5	6.2	8.6	8.7	7.5
Republic of Korea	2.0	1.0	1.6	2.1	2.3	2.1	3.1	2.1

Table 1.1. continued.

Region, subregions, countries and territories	Real GDP growth				Inflation[a]			
	2024	2025	2026[b]	2027[c]	2024	2025	2026[b]	2027[c]
North and Central Asia[f]	**4.7**	**2.3**	**2.0**	**2.3**	**8.1**	**8.7**	**6.5**	**5.7**
North and Central Asia (excluding Russian Federation)[f]	**5.8**	**6.3**	**5.0**	**5.0**	**7.1**	**8.8**	**7.8**	**6.4**
Armenia	5.9	6.9	5.0	5.0	0.3	3.3	4.0	3.3
Azerbaijan	4.1	1.4	2.3	2.2	2.0	5.5	5.8	5.4
Georgia	9.7	7.5	5.5	5.5	1.1	3.9	4.1	3.8
Kazakhstan	5.0	6.5	4.6	4.8	8.7	11.4	10.0	8.3
Kyrgyzstan	9.0	11.2	6.0	6.1	5.0	8.2	8.0	7.7
Russian Federation	4.3	0.8	0.9	1.3	8.4	8.7	6.0	5.5
Tajikistan	8.4	8.2	6.3	5.2	3.4	3.4	4.0	5.0
Turkmenistan	6.3	6.2	6.0	5.8	5.5	6.8	5.9	3.9
Uzbekistan	6.6	7.4	6.0	5.9	9.6	8.8	7.1	5.6
Pacific[f]	**1.0**	**1.9**	**2.0**	**1.7**	**3.1**	**2.8**	**3.7**	**2.7**
Pacific island developing economies[f]	**3.8**	**4.7**	**3.3**	**3.1**	**1.5**	**3.4**	**3.4**	**3.2**
Cook Islands	14.0	10.4	2.5	2.5	4.6	2.0	2.8	2.8
Fiji	3.5	3.4	3.0	3.0	3.9	-1.4	1.3	1.1
Kiribati	5.3	3.9	3.3	3.5	2.5	7.4	3.7	3.4
Marshall Islands	3.0	2.5	4.1	2.4	5.2	5.2	5.9	5.2
Micronesia (Federated States of)	0.7	1.0	1.5	0.8	5.4	4.1	3.4	2.4
Nauru	1.6	2.1	1.9	1.9	9.3	6.1	4.5	3.4
Palau	12.0	4.5	3.3	2.7	3.6	1.8	2.9	2.7
Papua New Guinea	3.9	5.3	3.5	3.1	0.6	4.4	4.0	3.7
Samoa	4.6	4.5	3.3	3.4	2.2	2.2	2.3	2.2
Solomon Islands	2.5	2.6	3.0	3.3	4.1	3.9	3.2	3.0
Tonga	1.7	2.7	2.3	1.8	8.0	2.9	2.2	3.2
Tuvalu	3.1	3.0	2.6	2.7	-0.5	1.3	2.0	2.5
Vanuatu	0.9	1.5	2.8	3.3	1.2	1.5	2.1	2.3
Developed countries in the Pacific subregion[f]	**1.0**	**1.8**	**2.0**	**1.7**	**3.2**	**2.8**	**3.7**	**2.7**
Australia	1.1	2.0	2.0	1.6	3.2	2.8	3.9	2.8
New Zealand	0.0	0.7	1.8	2.1	2.9	2.8	2.5	2.2
South and South-West Asia[f,g]	**5.2**	**5.4**	**4.5**	**5.2**	**19.9**	**13.1**	**15.2**	**11.3**
Afghanistan	1.7	..	..	..	-4.3	..	..	..
Bangladesh	4.2	4.0	4.5	5.4	10.3	10.0	8.8	8.0
Bhutan	6.1	8.0	6.5	6.0	2.8	3.4	3.6	4.2
India	6.5	7.4	6.4	6.6	4.6	2.3	4.4	4.3
Iran (Islamic Republic of)	3.7	0.5	-3.5	1.3	32.5	41.0	56.0	43.0
Maldives	3.5	4.5	4.2	4.0	1.4	3.9	3.9	3.5
Nepal	3.7	4.0	3.3	3.7	5.8	4.1	3.2	3.0
Pakistan	2.6	3.0	2.6	3.1	23.8	4.6	8.9	6.8
Sri Lanka	5.0	4.6	3.6	3.3	1.6	0.2	3.0	3.0
Türkiye	3.4	3.6	3.6	4.0	58.5	35.2	32.0	20.0

Table 1.1. continued.

Region, subregions, countries and territories	Real GDP growth				Inflation[a]			
	2024	2025	2026[b]	2027[c]	2024	2025	2026[b]	2027[c]
South-East Asia[f]	**4.8**	**4.8**	**4.5**	**4.6**	**2.8**	**2.1**	**2.9**	**2.6**
Brunei Darussalam	4.1	-0.7	1.4	2.0	-0.4	-0.3	0.5	0.8
Cambodia	6.0	4.8	4.4	4.7	0.8	2.5	2.5	2.0
Indonesia	5.0	5.1	4.9	5.0	2.3	1.9	3.5	2.5
Lao People's Democratic Republic	4.1	3.7	3.5	3.5	23.3	7.9	5.5	5.0
Malaysia	5.1	5.1	4.4	4.5	1.8	1.4	1.7	2.0
Myanmar	-1.1	-2.7	2.5	2.5	28.4	28.0	25.0	20.0
Philippines	5.7	4.5	5.2	5.7	3.2	1.7	2.5	2.5
Singapore	4.4	5.0	3.0	2.5	2.4	0.9	1.5	1.7
Thailand	2.5	2.4	1.7	2.4	0.4	-0.1	0.5	1.0
Timor-Leste	4.1	4.0	3.3	3.5	2.1	0.3	1.0	1.0
Viet Nam	7.1	8.0	7.6	7.8	3.6	3.3	3.6	3.3
Memorandum items:								
Least developed countries	**3.5**	**3.1**	**4.0**	**4.6**	**11.7**	**10.8**	**9.5**	**8.3**
Landlocked developing countries	**5.3**	**5.9**	**4.7**	**4.7**	**7.6**	**8.5**	**7.4**	**6.2**
Small island developing States	**3.8**	**4.7**	**3.5**	**3.2**	**1.5**	**3.3**	**3.4**	**3.2**

Source: ESCAP estimates and projections.

Note: * These projections are as of 17 March 2026 and have factored in the immediate macroeconomic impacts of the conflict in the Middle East, as highlighted in box 1.1. These baseline projections assume that de-escalation over the course of 2026 will help stabilize commodity prices and restore market sentiment to some extent. Yet the situation remains highly uncertain, and the eventual economic impacts will depend on the scale and duration of the conflict. Under the alternative scenario of prolonged conflict, economic growth could be notably lower than currently projected while inflation would be higher. Under this scenario, a surge in commodity prices and freight costs as well as supply chain disruptions will spike inflation and interest rates; weaker global demand will dampen merchandise exports, remittances and tourism; and subsequent job losses and plunging market sentiment will hurt consumer spending, business investment and economic growth.

[a] Changes in the consumer price index.

[b] Estimates.

[c] Forecasts.

[d] Developing Asian and Pacific economies consist of all countries and areas listed in the table, excluding Australia, Japan and New Zealand.

[e] Developed Asian and Pacific economies consists of Australia, Japan and New Zealand.

[f] Aggregate growth rate was calculated using GDP in 2015 United States dollars as weights.

[g] The estimates and forecasts for countries relate to fiscal years. These are defined as follows: 2025 refers to the fiscal year spanning the period from 1 April 2025 to 31 March 2026 in India; from 21 March 2025 to 20 March 2026 in Afghanistan and the Islamic Republic of Iran; from 1 July 2024 to 30 June 2025 in Bangladesh, Bhutan and Pakistan; and from 16 July 2024 to 15 July 2025 in Nepal.

1.4.2. The baseline projections are subject to several downside risks

The obvious near-term risk is the duration and further intensification of the recent conflict in the Middle East. As noted above, such a scenario would substantially disrupt economic activities and trade and investment flows in the region. The magnitude of the impact and extent of vulnerability of economies depends on several factors, such as (i) high dependence on crude oil and liquified natural gas (LNG) from countries in the Middle East; (ii) depth of trade and economic and value chain ties with the Islamic Republic of Iran and other countries in the Middle East; (iii) dependence on remittances and tourism for foreign exchange earnings; (iv) resilience of the energy sector in terms of strategic oil and LNG reserves and alternative supply chains; and (v) economic structure vis-à-vis dependence on energy-intensive industries and manufacturing.

If the crisis persists or escalates, then, in addition to considerable adverse impacts on economic growth, broader development outcomes may be affected as well. The broader development impacts would include (i) increased food insecurity, hunger and weaker health conditions; (ii) increase in poverty due to weaker purchasing power and job losses with no social protection; (iii) wider income inequality due to disproportional adverse impact on food inflation and lower remittances on poor; and (iv) displacement of migrant workers.

The other near-term risk is the re-escalation of trade tensions. Although global trade policy uncertainty may have reduced since the spike in April 2025, it is still unusually high. Trade negotiations and policies continue to evolve and change[19] and will contribute to the already elevated policy uncertainties. Furthermore, any re-escalation of trade tensions, such as those arising from the eventual implementation of sector-specific tariffs on semiconductors, would further hamper exports and economic growth in the region.

The third near-term risk is global financial volatility. Among others, if the inflationary impact of the tariff hikes, as well as stricter immigration policies, on the United States economy is greater than anticipated,[20] this could lead to an unexpected shift in the country's policy interest rate direction, with implications for capital flows and exchange rate volatility in the region. Moreover, a downgrade in the currently upbeat global prospects of high-technology sectors could cause abrupt stock market revaluation and sudden capital flows volatility.[21]

1.4.3. Emerging challenges for the rapidly changing global economic landscape

The global economic landscape is changing with rising trade protectionism and a shift from rules-based globalization to a revival of economic nationalism. Geoeconomic fragmentation that tightens restrictions on strategic investments and technology transfers has increased as well. **The recent conflict in the Middle East has added another dimension to this changing landscape.** Broader adjustments in global monetary and financial systems, such as changes in the mix of currencies that are held as part of foreign exchange reserves, are also possible. Economies in Asia and the Pacific have greatly benefited from multilateralism and globalization in the past decades. The region is now facing a different global context that could hold back its economic prosperity and progress towards inclusive and sustainable development.

The shifting landscape has at least three implications for the region. First, as witnessed during the tariff hike imposed by the United States on China in 2018, value chain reconfiguration in the region is likely to deepen in response to the 2025 hike and the recent conflict in the Middle East. A key difference could be a greater degree of production localization in third countries, as reflected in higher shares of local inputs and value addition, given the stricter rules of origin and trans-shipment. Second, the increasing use of restrictive unilateral trade and

[19] For example, in early 2026, announcements by the United States such as: the waiver of tariffs on Bangladesh's textile and apparels that use cotton and fiber made in the United States; additional tariffs on countries that trade with the Islamic Republic of Iran; reductions in tariffs on India; an intent to raise tariffs on the Republic of Korea if the bilateral trade deal reached in late 2025 is not fully enforced; and the announcement of 10% global tariffs and planned increase to 15% after the United States Supreme Court ruling.

[20] This depends on several factors, such as the number of countries and products subject to higher tariffs; the extent to which firms in the United States can or are willing to absorb additional costs; and the extent to which higher prices weaken consumer spending. The situation is still evolving. If tariffs imposed on China, accounting for 15% of total imports in the United States in 2024, turn out to be higher than expected after the current truce ends in October 2026, inflation in the United States could be higher than anticipated.

[21] In the United States alone, investments relating to artificial intelligence increased from $264 billion in 2024 to an estimated $320 billion in 2025. See Morris and Uddin (2025).

industrial measures together with the persistent threat of conflict creates greater uncertainty and makes economies and businesses more exposed to regional supply chain risks. Third, and related to the second, tighter access to developed markets and technological decoupling could lead to further production overcapacity, at least temporarily, in some countries of the region. This may happen as they boost investment in strategic sectors to secure greater supply chain resilience and technological independence despite poor economic payoffs in the short term.

1.5. Policy considerations

Proactive, coordinated and innovative economic policymaking is required to navigate the current unusual times marked by a rise in conflicts and weakening of multilateralism and the rules-based global economic order. To sustain economic growth and ensure macroeconomic stability, economic policymakers should seek to adopt a package of "quick win" yet credible policies that offer immediate economic boosts without raising perceived macroeconomic and sovereign risks and at the same time support vulnerable workers and people. An example is to prioritize low-income groups and youth in fiscal stimulus measures, given their higher propensity to spend cash assistance relative to wealthier and older individuals. Supported by regional cooperation, diversification across sectors (trade, transport, energy) and dimensions (sources, routes, products, markets) has to become an urgent task to increase economic resilience.

Furthermore, while tackling immediate socioeconomic challenges, policymakers should also keep in view longer-term economic goals, such as reviving labour productivity, diversifying their economic base and boosting domestic innovation capacity. Together, these policies would help restore market confidence, thus reducing delays in investment and consumption decisions as high levels of economic uncertainty may last for several years.

1.5.1. Provide targeted fiscal support and implement reforms to strengthen fiscal positions

The fiscal space in many developing economies of the region has shrunk at a time when rising trade protectionism and conflict in the Middle East could result in significant slowdown in economic activities, job losses and wage cuts. In this context, fiscal authorities will need to find ways to provide supportive measures while also strengthening their fiscal positions to secure long-term fiscal and debt sustainability and pursue development ambitions. Such supportive fiscal measures could take various forms, including cash transfers for retrenched workers, tax relief for small firms and debt relief by public development banks.

The choice and scale of these measures will vary across countries, depending on the available fiscal space, implementation feasibility and policy effectiveness based on past national experiences.

To increase fiscal resources, governments should seek to increase tax revenues in a fair and efficient manner, especially in countries where the current tax revenue collection is underperforming. Efforts to rationalize the tax structure, strengthen tax administration through digital solutions, explore untapped potential of wealth and property taxes and reduce tax exemptions are particularly relevant for Asian and Pacific countries (Jian, 2025). Broader initiatives to enhance domestic public governance and international tax cooperation should also be undertaken.

Less developed countries with smaller fiscal space and weaker technical capacity would benefit from stronger multilateral support to address these policy issues. Examples include sizeable and prompt debt relief that also involves non-traditional official and private creditors (ESCAP, 2023), as well as technical assistance in designing high-impact fiscal stimulus, digitalizing tax systems and conducting public debt sustainability analysis that considers the fiscal implications of medium-term issues such as changing climate conditions and population structures (ESCAP, 2024c).

Several governments in the region have already adopted some of these policy options. To increase the efficiency of public spending, there are shifts away from blanket subsidies towards targeted subsidies for fuel and social support in Malaysia, while fuel and electricity subsidies were reduced in Maldives and replaced with direct income transfers targeting vulnerable households. Other initiatives, such as increased taxes on e-cigarettes in Indonesia, gaming devices in

the Lao People's Democratic Republic and carbon emissions in Singapore, are aimed at generating fiscal resources focused on health, social equity or environmental sustainability.

To enhance fiscal sustainability, fiscal consolidations are ongoing in several countries in the region. For instance, Malaysia has set its fiscal deficit target at 3.5% of GDP in 2025 compared to 4.1% in 2024 and 5.0% in 2023. Fiscal consolidation efforts in Pakistan have resulted in a lower fiscal deficit of 3.2% of GDP in fiscal year 2025 from 4.5% the year before (Government of Pakistan, 2025b). As fiscal consolidations are undertaken, governments will need to be mindful of their impact on people's well-being. For example, past experiences show that fiscal tightening based on indirect tax revenues placed heavier tax burdens on the poor, while cuts in public investments in infrastructure and construction adversely impacted lower-skilled workers (World Bank, 2024).

1.5.2. Postpone reducing interest rates to manage emerging inflation, financial and external stability risks

Prior to the recent conflict in the Middle East, many Asian and Pacific economies achieved or were close to achieving their goal of keeping inflation low and stable, with the latest inflation rates in 10 out of 30 economies staying within official targets. This created expectations for interest rate reductions to ease credit and financing conditions. However, the situation may have changed considerably in the aftermath of the recent conflict in the Middle East. For most economies, expected interest rate cuts will need to be postponed, and for some interest rates may have to increase. Moreover, jittery global financial conditions warrant vigilant monetary policy management.

Central banks can endeavour to address some structural monetary and financial challenges. For instance, countries such as Thailand and the Republic of Korea still face high household debt-to-GDP ratios, at 87.0% and 92.6% in the first half of 2025, respectively. While borrowing costs have come down, direct support measures such as repayment assistance and debt restructuring would help alleviate the debt burden and enable smoother consumption.

Another challenge is to enhance the effectiveness of monetary policy. While policy interest rate reductions have taken place in many Asian and Pacific countries, the pass-through to market interest rates tends to be slower and/or incomplete. For example, in Indonesia, the one-month deposit rate decreased by only 29 basis points between January–September 2025 despite five policy rate reductions totaling 150 basis points during the same period. Studies have shown that the interest rate pass-through is stronger in countries with, among others, greater financial sector development, economic openness, exchange rate flexibility, interest rate stability, credit quality, banking sector competition and central bank transparency (Gigineishvili, 2011; Perera, Ralston and Wickramanayake, 2013).

1.5.3. Explore new market opportunities

Rising trade protectionism and recent conflict in the Middle East have made diversifying export markets and strengthening supply chains a more urgent task. Several Asian and Pacific countries have recently signed new trade and investment agreements, such as the enhanced free trade pact between China and the Association of Southeast Asian Nations, as well as economic partnership agreements between India and the United Kingdom of Great Britain and Northern Ireland and between Indonesia and the European Union. Nevertheless, it may be difficult to mitigate or manage the impact of the conflict on shipping routes and key supply chains immediately, as this would require identifying alternative transport corridors, as well as finding other import sources for key inputs, including energy, as well as redirecting exports away from the Middle East towards other partners.

A country's ability to diversify and find substitute sources and markets will depend on its energy mix, geography and other structural and geopolitical factors. However, there might be scope for countries to utilize existing bilateral and regional trade agreements and in future design agreements which incorporate provisions for cooperation in times of crisis.

Experience from China demonstrates the importance of market diversification for export resilience. Partly to mitigate the impacts of rising restrictive trade measures imposed by the United States since 2018, Chinese companies have increased investments in other parts of the region. For instance, South-East Asia received foreign direct investments worth $24 billion from China in 2023 (Chu and others, 2024), followed by a

15% increase in the first half of 2024, especially in the semiconductor and technology sectors.[22]

Further strengthening intraregional trade in Asia and the Pacific, exploring non-traditional export markets outside of the region and developing trade in digitally delivered services, which are still subject to few restrictive measures, would help increase trade resilience. However, smaller or less developed countries that lack trade and investment negotiation capacity are particularly vulnerable as multilateral economic cooperation deteriorates. Export diversification is also challenging for these countries due to limited competitiveness and a broad-based increase in global trade competition. Further support from international development partners is needed.

1.5.4. Boost domestic and regional sources of demand

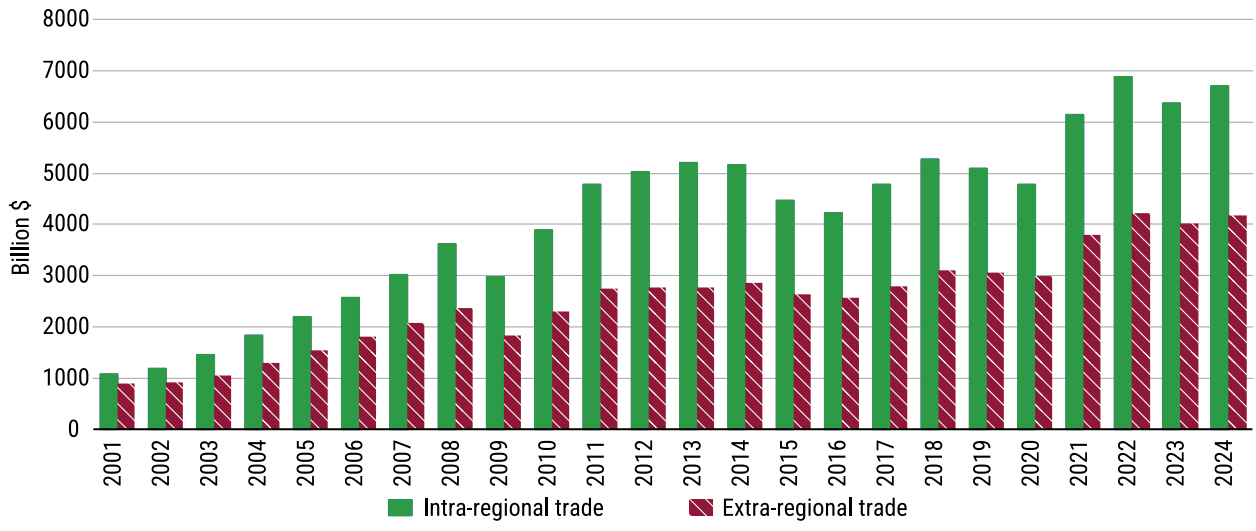
In the wake of the changing global economic landscape, a transition to demand-led economic growth built on higher-productivity sectors and better-quality jobs can pave a way forward. While Asia and the Pacific should continue to push for the restoration of rules-based multilateralism, it should simultaneously seek to strengthen domestic and regional sources of demand, including for increasingly sophisticated and more environmentally friendly products manufactured in the region. A development approach that is focused more on domestic and regional sources of demand and supports regional cooperation could also reduce deflationary pressure in some countries.

[22] South-East Asia remains China's largest trading partner, with bilateral trade reaching about $1 trillion in 2024. The United States is the subregion's largest source of foreign investment, with investment stock standing at about $476 billion in 2023.

Asia and the Pacific have structural conditions that provide a foundation for stronger regional sources of demand. Intraregional trade has increased from about 55% of the region's merchandise exports in 2010 to nearly 60% in 2024 (fig. 1.15), reflecting a deepening web of economic linkages within the region. Demographic and urbanization trends further reinforce this potential. Many economies have youth populations larger than the global average, and by 2050, the region is expected to add around 1.2 billion urban residents, sustaining demand for housing, services and infrastructure. These trends point to a sizeable and growing internal market at the regional level, suggesting that policy efforts to improve the transmission of demand across economies can yield macroeconomic gains beyond what national measures alone can achieve.

Strengthening domestic and regional sources of demand requires policy actions in at least four areas. First, enhancing economy-wide productivity. Policies that simplify business entry, promote fair market competition and support smaller

Figure 1.15. Growth of intraregional trade versus extra-regional exports, 2001–2024



Source: ESCAP analysis, based on UNCTAD Data Hub.

Note: Measured in US$ at current prices. Intraregional trade refers to trade within the "Asia and Oceania" region, while extra-regional trade is calculated by subtracting intraregional trade from total trade with global markets.

Data available at: https://unctadstat.unctad.org/datacentre/dataviewer/US.TradeMatrix.

enterprises in adopting digital tools can raise firm-level productivity. Public investment in climate-resilient, energy-efficient infrastructure can also lower business operating costs and raise productive capacity. More broadly, raising national investment in research and development activities, enhancing collaboration between universities and industries and widening access to digital and scientific training can support domestic innovation capacity and the adoption of new technologies. Joint research collaboration across borders can help identify complementarities in production capabilities and technology strengths, while dialogue platforms allow firms to readily exchange information, enabling cooperation towards the shared goal of strengthening supply chain linkages.

Second, improving workers' skills and the quality of jobs. Improving foundational learning outcomes, upgrading vocational and technical education, aligning education and training systems with evolving labour market needs and expanding lifelong learning programmes can help build a more strongly skilled workforce. At the same time, job quality can be improved by reducing informality, increasing minimum wage compliance and strengthening occupational safety standards. Engagements with labour institutions across countries can support the portability of social security benefits for migrant workers.

Third, reducing excessive precautionary savings by households while maintaining their resilience to shocks. Expanding the coverage and adequacy of health care, disability benefits, pensions and unemployment compensation help reduce precautionary savings and foster smoother household consumption patterns. Regional initiatives on long-term savings instruments can assist both high-saving economies seeking to stimulate consumption and lower-saving economies working to rebuild household buffers.

Fourth, fostering seamless connectivity and easing market access. Trade and transport facilitation agreements, including those facilitated by ESCAP such as the Asian Highway and Trans-Asian Railway networks, help reduce cross-border delays and improve multimodal linkages. Efforts to harmonize e-commerce regulations, improve the interoperability of digital payment systems and coordinate data governance frameworks cut transaction costs and facilitate participation in regional value chains. More broadly, coordinated infrastructure and grids planning and access to development finance amplifies the development impact of national programmes. As MSMEs account for an average 97% of all enterprises and 69% of national labour forces, the degree of market access will have implications for their market reach and job creation. Lower tariffs, free trade and investment agreements can increase access to inputs, opportunities for exports and integration into global and regional supply chains, enhancing competitiveness.

1.6. Conclusion

Economic growth in developing Asian and Pacific economies slowed in 2025 amid rising trade tensions and associated policy uncertainty. It is projected to slow further in 2026 in the wake of the recent conflict in the Middle East. The average economic growth in the region will be driven mainly by household consumption, while export growth is likely to be slower. The impacts of rising tariffs and conflict are likely to fall disproportionately on vulnerable populations employed in export-exposed sectors, increasing poverty and inequality concerns. This outlook is subject to several risks, including intensification of conflict in the Middle East, a re-escalation of trade tensions and global financial volatility. Moreover, the global economic landscape is changing rapidly with rising trade protectionism, geoeconomic fragmentation, a shift from rules-based globalization to economic nationalism and more recently conflicts. This adds to the uncertainty and poses several risks to the economic outlook.

Proactive economic policymaking is required to navigate high global economic uncertainty. Policymakers should deploy credible, "quick-win" measures that provide near-term economic support without increasing macroeconomic risks and at the same time supporting vulnerable populations. Strengthening trade and investment flows through bilateral and multilateral engagement remains critical, while longer-term objectives such as raising labour productivity, diversifying economic structures and strengthening domestic innovation should not be neglected. Supported by regional cooperation, diversification across sectors (trade, transport, energy) and dimensions (sources, routes, products, markets) has to become an urgent task to increase economic resilience.

Fiscal and monetary policies remain central. On the fiscal side, governments face the dual challenge of delivering targeted support amid shrinking fiscal space while rebuilding buffers to ensure debt sustainability. Strengthening domestic revenue mobilization, improving spending efficiency and shifting towards better-targeted transfers can support inclusive growth. Central banks, meanwhile, must factor in likely increases in inflation and keep an eye on financial and external stability in the face of volatile capital flows and exchange rates, while enhancing policy transmission and addressing structural vulnerabilities such as high household debt.

Beyond macroeconomic stability, strengthening resilience requires diversifying export markets, deepening intraregional trade and expanding digitally delivered services, alongside boosting domestic and regional sources of demand. Favourable demographic trends, rising urbanization and growing intra-regional trade provide a strong foundation, but fully realizing this potential will require sustained investments in productivity, skills, innovation and connectivity. Taken together, a coherent policy mix that aligns short-term stabilization with longer-term structural reforms can restore confidence, reduce delays in investment and consumption, and place Asia and the Pacific on a more resilient and inclusive growth path amid prolonged global uncertainty.

Photo: adobe stock/Oleksiy

Chapter 2

Transition to an environmentally sustainable economy: potential pathways and macroeconomic impacts

2.1. Introduction

Economic growth and energy consumption are inextricably linked, driving socioeconomic prosperity, industrial advancement and expansion of the service economy in Asia and the Pacific. Technological progress has enabled large-scale, increasingly efficient energy production, fuelling rapid socioeconomic progress in recent decades. However, it has come at a steep environmental cost, threatening long-term environmental sustainability with significant consequences for the socioeconomic well-being of people. As energy demand continues to rise, with emerging drivers like AI data centres projected to surge, mitigation of environmental costs requires shifting to non-fossil fuel sources and improving energy efficiency.

Around 80% of energy production in Asia and the Pacific comes from carbon-based sources, up slightly from two decades ago. Substantial investments in decarbonization have increased the use of renewable energy but the consumption of fossil fuels expanded at an even faster rate. As a result, the region's total carbon emissions have more than doubled since the year 2000, causing serious damage to the environment and contributing to climate change. Decarbonization efforts have yet to deliver on their ambitious goals. The region must identify more practical measures to decarbonize economies faster and at large scale, without disrupting economic activity.

In this vein, the recently concluded deliberations at the thirtieth United Nations climate change conference,[1] called for urgent climate action, reaffirming the need for ambitious emissions reductions and decarbonization. Countries acknowledged insufficient progress towards existing pledges, a rapidly closing window for scaling up ambitions and delivering on commitments, and the necessity of reaching net zero by or around mid-century to keep the 1.5°C goal within reach. Even so, absolute emission reductions are not the sole objective. The transition to an environmentally sustainable economy must respect the principle of common but differentiated responsibilities and respective capabilities, taking full account of diverse national circumstances, sustainable development ambitions and the imperative to eradicate poverty. While the costs of inaction vastly outweigh those of timely climate action, unrealistically ambitious climate adaptation and mitigation measures and an ill-planned transition can also harm socioeconomic prosperity. However, policy ideas that identify transition pathways that balance stringent greenhouse-gas reduction targets with vital socioeconomic objectives have not yet been fully understood and articulated.

Each economy is expected to follow a distinct decarbonization, transition and development pathway. Diverse economic structures complicate the identification of optimal decarbonization timetables and transition strategies. Furthermore, the transition to an environmentally sustainable economy extends far beyond the decarbonization of the energy sector, as it encompasses a wide range of interlinked policies aimed at promoting low-carbon and environmentally sustainable agriculture, industry, transport, tourism and construction; adopting circular-economy practices; reducing pollution; protecting biodiversity and water resources; improving waste management; and reforming land use. Decisions on the design, prioritization, sequencing and periodic adjustment of transition plans must explicitly address the trade-offs between these dimensions and the desired pace, cost, scale and intensity of decarbonization.

A central question for this chapter is to what extent economic and social development goals and environment and climate ambitions can be pursued simultaneously. Where is full alignment among these objectives difficult and what is the nature and degree of compromise required? The chapter does not prescribe specific policy choices for individual economies but provides an evidence-based framework to promote informed discussion on feasible decarbonization pathways and transition strategies.

The chapter is organized as follows: Section 2.2 gives an overview of the ongoing transition to environmentally sustainable economies, with an update on carbon emissions in Asia and the Pacific. Section 2.3 briefly analyses the Nationally Determined Contributions (NDCs). Section 2.4 discusses the implications of various decarbonization paths for the main macroeconomic factors. Section 2.5 concludes.

[1] COP30 in Belém, Brazil, 10–21 November 2025.

2.2. The state of decarbonization in Asia and the Pacific

The transition towards an environmentally sustainable economy alters every facet of economic activity. It reshapes what is produced, how it is produced, and how and where goods and services are consumed – all with the aim of sharply reducing the environmental footprint of human economic activity. Among its many dimensions, the development of clean and renewable energy stands out as critical, given that the energy sector remains the largest source of greenhouse-gas emissions and other harmful environmental externalities. Therefore, the pace of the energy transition will profoundly influence the trajectory of environmental sustainability, climate change and the future strength of economies.

To date, most Asian and Pacific economies have continued "business-as-usual" by maintaining heavy investments in coal, oil and natural gas while adding renewable and nuclear energy capacity to help meet incremental demand growth. On a positive note, zero-carbon sources of energy generation are expanding in absolute terms, supported by rapid technological advancements that are accelerating their deployment at an increasing rate.

2.2.1. Energy production and carbon emissions trends in Asia and the Pacific

Economic growth and energy consumption are interrelated factors that are fundamental for socioeconomic prosperity and sustainability. Demands from population growth, increasingly advanced industries as well as a growing services sector all require more energy, while technological advancement enables larger and more efficient energy production. In principle, there may be no development progress without increases in energy production and consumption. This relationship has been the cornerstone of the fast and broad socioeconomic development in the Asia-Pacific region over the past decades (Mujtaba and Jena, 2023).

Yet increases in energy production and consumption have come at a significant cost to the environment, undermining the long-term sustainability of both natural ecosystems and the quality of living conditions. Energy needs are also projected to rise in the foreseeable future. For example, energy use relating to artificial intelligence development and data centres is expected to rise by 170% between 2024 and 2030 in China (175 TWh), 80% in Japan (15 TWh), and more than double for the entire Asia-Pacific region, driven by other countries like Malaysia and Singapore that also invest heavily in data centres (IEA, 2025a; Grama, 2025). However, there are ways to decrease the environmental footprint of the energy production-consumption cycle through increases in non-fossil fuel energy production and improvements in energy use efficiency.

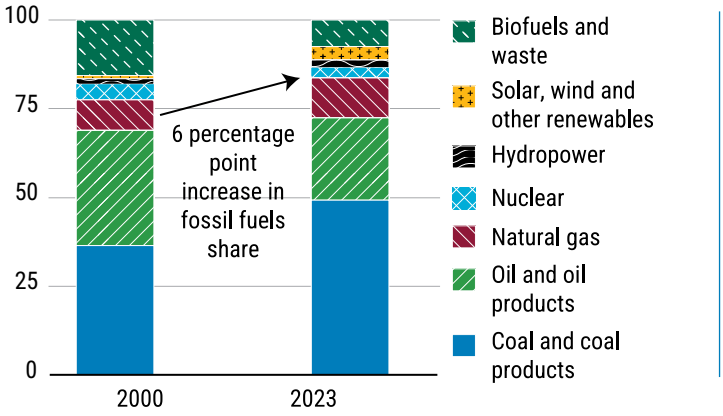
Energy production in Asia and the Pacific remains fossil fuels oriented. The share of carbon-based energy rose from 78% in 2000 to 83% in 2023, despite widespread commitments to non-fossil energy production. Given the rapid economic growth in Asia and the Pacific since 2000, carbon emissions have followed a steady upward trend and are projected to continue rising under business-as-usual scenarios (see figs. 2.1. a–d). Only a few, mostly developed, economies managed to record modest declines in carbon emissions during this period, while emissions in the fastest-growing countries surged (fig. 2.2).

Per capita carbon emissions across the region have also risen (fig. 2.3). Developed economies have recorded more notable per capita reductions. For instance, while Australia cut its total emissions by 4% between 2013 and 2023, on a per capita basis emissions declined by up to 16%.[2] However, the modest per capita reductions in emissions in more developed economies have been outweighed by sharp increases in developing countries, especially the larger ones. For example, between 2013 and 2023, per capita emissions rose by 16% in China, 38% in India and 36% in Indonesia, with many smaller developing economies experiencing similar growth (fig. 2.4).

[2] Nevertheless, per capita figures may not fully reflect a country's overall contribution to global emissions. Australia remains one of the world's largest coal exporters and a key coal supplier to economies such as China and India. As such, it effectively contributes to regional carbon emissions. A more holistic regional cooperation is needed to measure and address such issues.

Figure 2.1. Energy production and carbon dioxide (CO_2) emissions in Asia and the Pacific, 2000–2023

(a) Primary energy mix, by source, in %, 2000–2023

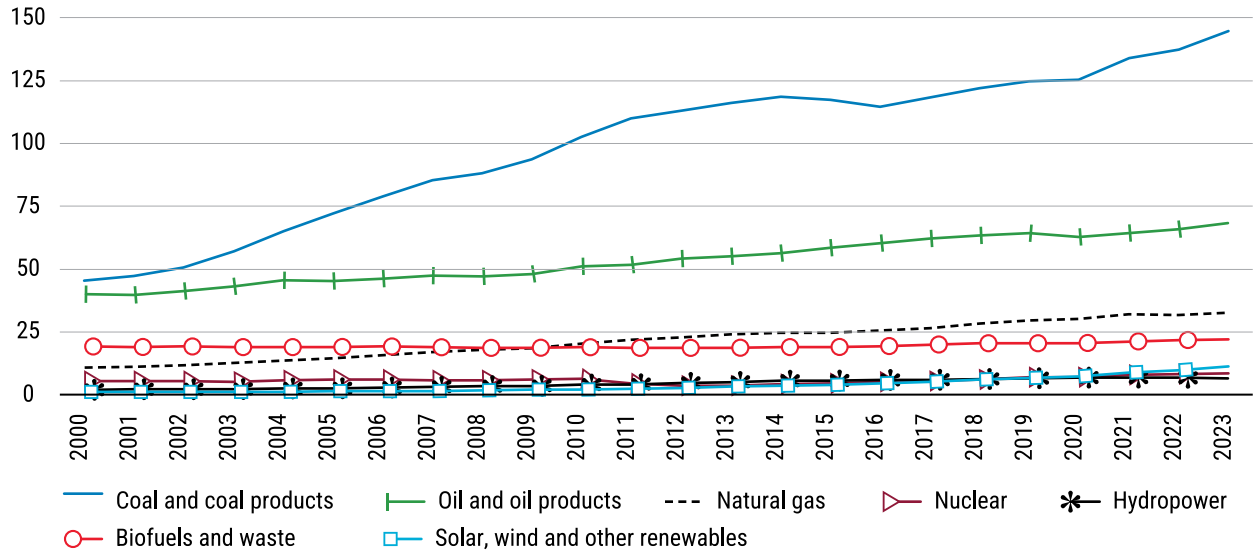


(b) Total energy supply growth, by source, 2000–2023

Solar, wind and other renewables	898%
Hydropower	246%
Coal and coal products	219%
Natural gas	201%
Oil and oil products	70%
Nuclear	57%
Biofuels and waste	13%

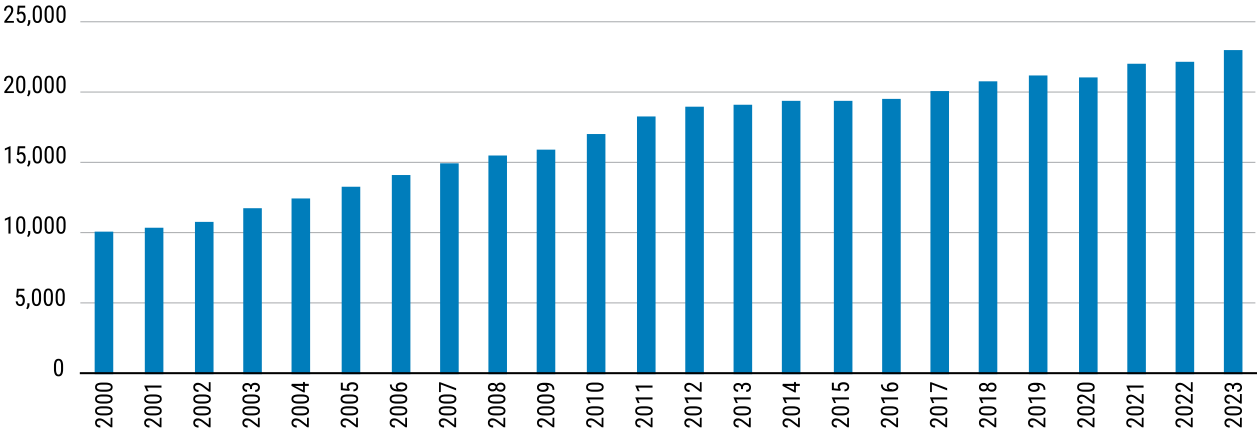
Source: ESCAP, based on data from the International Energy Agency (IEA, 2025b).

(c) Primary energy mix, by source, exajoules (EJ), 2000–2023



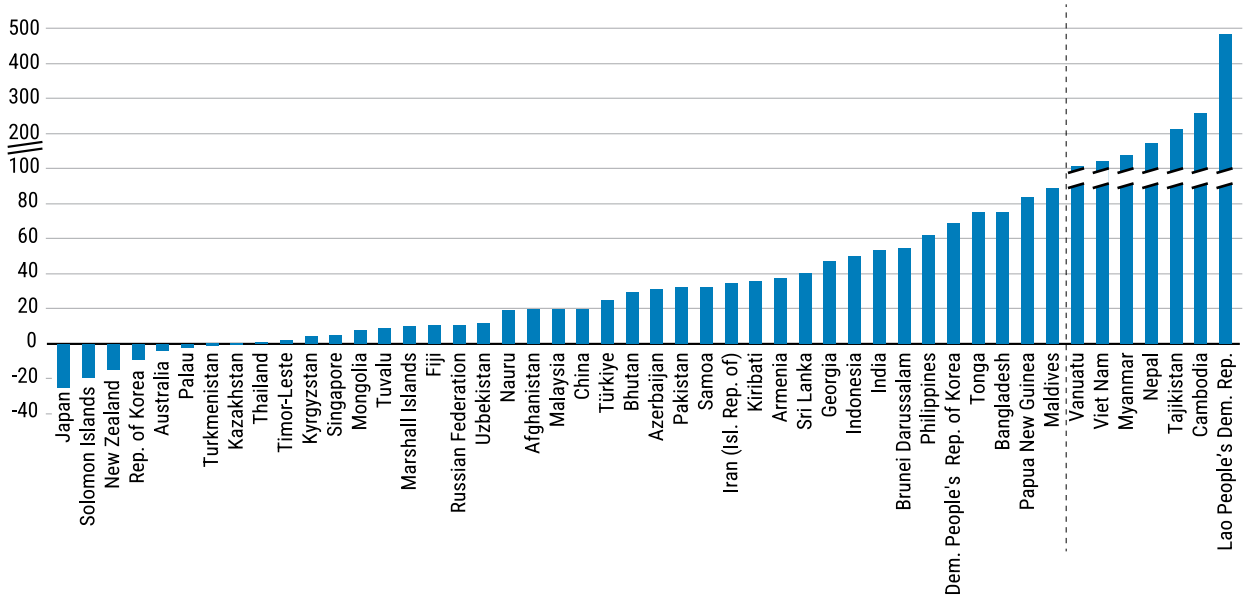
Source: ESCAP, based on data from the International Energy Agency (IEA, 2025b).

(d) Annual total emissions of carbon dioxide (CO_2), excluding land-use change, million tons, 2000–2023



Source: World Bank, 2025a.

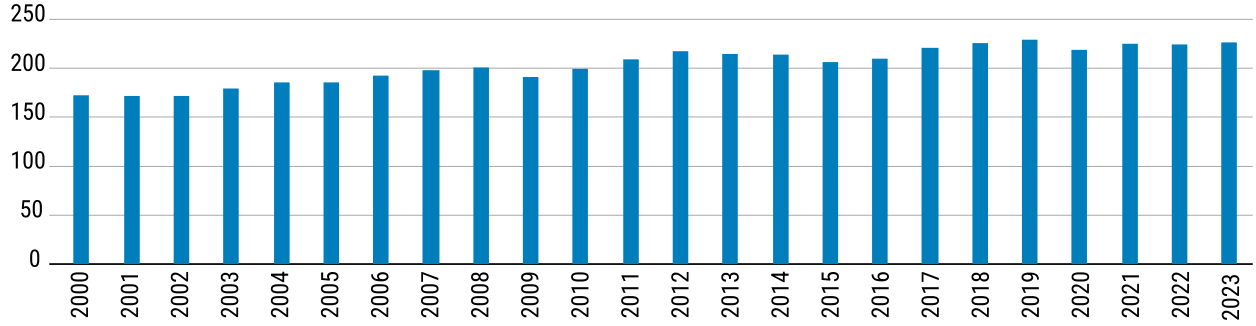
Figure 2.2. Change in total annual emissions* of carbon dioxide (CO_2), % by country, 2013–2023



Source: World Bank, 2025a.

Note: *excluding land use change.

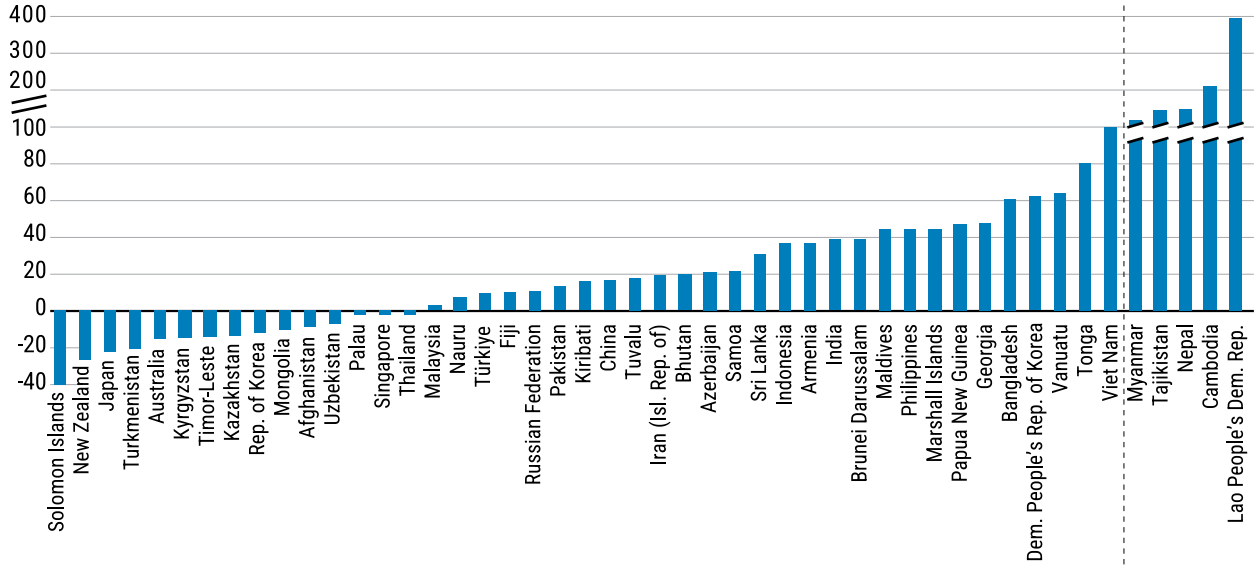
Figure 2.3. Annual total emissions* of carbon dioxide (CO_2), tons per capita, 2000–2023



Source: World Bank, 2025a.

Note: *excluding land-use change.

Figure 2.4. Change in total annual emissions* of carbon dioxide (CO2) per person, % by country, 2013–2023



Source: World Bank, 2025a.

Note: *excluding land-use change.

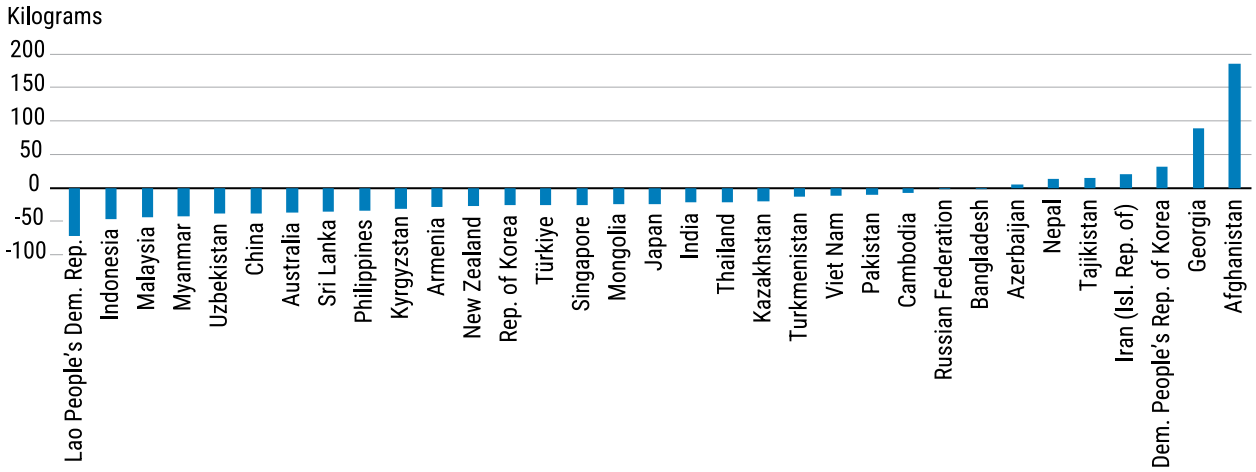
Encouragingly, emissions intensity – the amount of greenhouse gas (GHG) emissions per dollar of GDP – has been declining across most economies in the region (fig. 2.5). This decline stems from various factors, including the adoption of less energy-intensive technologies, the continuing expansion of non-fossil energy sources, higher productivity (though growth is slow), and a gradual shift towards a more services-oriented economy. Taken together, these trends provide grounds for cautious optimism that the region can eventually transition to net-zero emissions (fig. 2.6).

2.2.2. Constraints to decarbonization

In simple terms, there are four broad categories of constraints that need to be overcome to accelerate decarbonization: (i) the total cost of renewables; (ii) scalability; (iii) financing; and (iv) energy system stability with energy storage technologies. Besides these, factors such as decarbonization policies, regulatory approaches, geopolitics, energy security, social and political acceptance and just transition concerns also impact the pace and scope of transition. Depending on the level of development, geographic location and the structure of economies, the four main categories influence, one way or another, the pace of decarbonization.

Due to reductions in production and operation costs, the total costs of renewable energy are moving rapidly towards absolute cost advantage over fossil fuels. However, economies require stable and reliable energy sources with round-the-clock

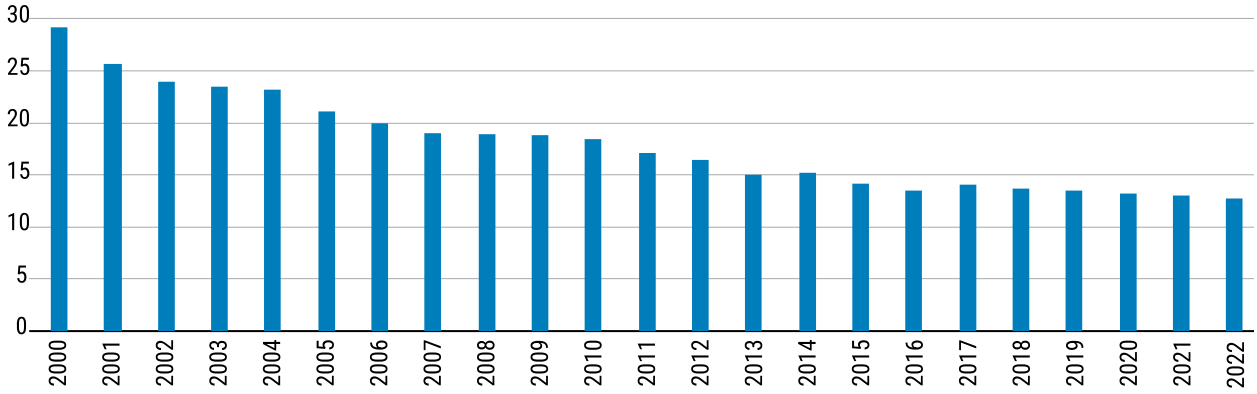
Figure 2.5. Change in annual total emissions of carbon dioxide (CO_2), including land-use change, kg per $ of GDP (2011 international $), by country, 2013–2023



Source: World Bank, 2025a.

Note: Interpretation example – the Lao People's Democratic Republic emitted 72kg CO_2 less to create one dollar (2011 international $) of GDP in 2023 compared to 2013 (increase in efficiency). In contrast, Afghanistan emitted almost 185 kg of CO_2 more to create one dollar of GDP in 2023 compared to 2013 (decrease in efficiency).

Figure 2.6. Average annual total emissions of carbon dioxide (CO_2), including land-use change, kg per $ of GDP (2011 international $), Asia-Pacific region, 2000–2022



Source: World Bank, 2025a.

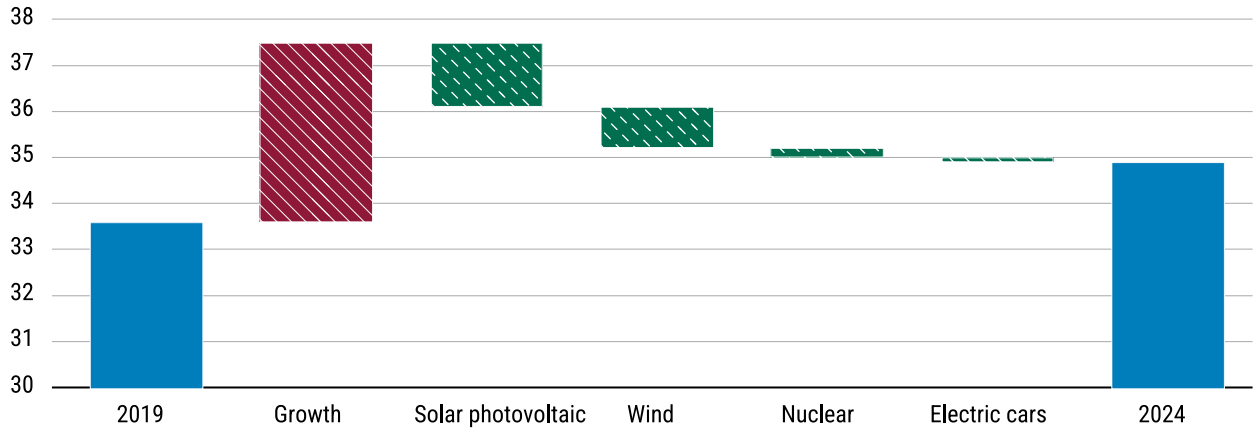
uninterrupted supply. Although renewable energy sources like solar and wind usually do have a cost advantage for new units, neither provides reliable and uninterrupted energy supply on their own. They are also geographically constrained and weather-dependent. Energy storage (batteries) only partly addresses this challenge as cloudy or windless periods can last much longer than the range of current economically feasible battery storage technologies. Furthermore, securing energy from renewable sources through storage requires oversizing solar and wind capacity as they must produce sufficient energy for current as well as future use.[3] Renewable energy-based power systems require backup and stabilizing energy sources that rely on more traditional technologies including fossil fuels, nuclear energy and hydropower (Lazard, 2025; IEA, 2025c; IRENA, 2025). These and similar issues are the final obstacles to accelerated decarbonization, and they are rapidly disappearing.

At the same time, globally, the demand for energy is growing faster than the increase in non-fossil fuel energy supply. Energy from fossil fuels is still filling this gap, leading to continuous increases in CO_2 emissions. Nevertheless, the deployment of renewables and nuclear energy, together with increasing use of electric vehicles, is substantially reducing the environmental burden of growing energy demand. For example, figure 2.7 shows that global CO_2 emissions were around 33.5 gigatons (Gt) in 2019 (bar 1 – "2019") and would have grown to around 37.5 Gt in 2024 (bar 2 – "Growth"), driven by economic growth and related energy demand. However, expansion of solar energy reduced emissions by around 1.5 Gt, wind by around 0.75 Gt, and nuclear technology and electric vehicles by less than 0.25 Gt (bars 3–6). As a net sum (bar 7), the final 2024 emissions were at around 35 Gt. Put simply, the overall theoretical increase in emissions was cut from around 4 Gt to 1.5 Gt (net sum of bars 2–6). Being at the forefront of solar energy investment, nuclear expansion and electric vehicle deployment, a large share of these gains comes from Asia and the Pacific.

Rapid economic growth and associated increases in standards of living in Asia and the Pacific demand an increasingly robust, reliable and affordable energy supply. Rising energy demand stems from expanding industrial production and household consumption, including from goods that improve the quality of life, such as air-conditioning. In India, for instance, energy demand is rising both because of an increasingly sophisticated and fast-growing economy and rising cooling needs. Demand for cooling (air conditioning) is growing, even at comparable temperature levels over time, and accounted for a third of India's total emissions growth in 2024 (IEA, 2025d). South-East Asia expects to increase the number of air-conditioning units nine-fold between 2020 and 2040. The share of households with air conditioning in Indonesia is forecast to grow from 15% at present towards 50% around 2035 and 85% around 2050 (IEA, 2024a). Meanwhile, full electrification is essential for eradicating poverty (UNDP, 2015), which would also drive up energy demand. Countries such as Bangladesh have recently achieved universal electricity access, often through a combination of expanded coal-fired generation alongside ambitious nuclear and renewable energy projects (BREB, 2022).

[3] Note: fossil-based power systems are also oversized to meet peak demand needs, resulting in underutilization of coal and natural gas assets

Figure 2.7. Change in CO_2 emissions from fuel combustion and avoided emissions from deployment of selected clean technologies, gigatons (Gt), 2019–2024



Source: IEA, 2025d.

Total cost of renewables and their scalability

Renewable energy is increasingly becoming a financially viable option compared to fossil fuels, gaining cost dominance even without subsidies or carbon tax implementation. In many countries, wind, solar, hydro and nuclear energy are the cheapest options if analysed purely from the levelized cost of electricity (LCOE)[4] perspective (table 2.1.a). Because of their increasing economic competitiveness, these sources made up 80% of global electricity generation growth in 2024 (IEA, 2025e). According to IEA (2020) calculations, renewables were the cheapest option in the majority of the 16 countries covered by their model, even without carbon tax implementation. Furthermore, decarbonization policies, such as

[4] Levelized cost of electricity (LCOE) is the average cost per megawatt-hour (MWh) of electricity produced over the plant's entire operational life, factoring in capital, fuel and operational expenses, and discounting future costs to present value.

Table 2.1. Levelized cost of electricity, 2020, $/MWh

	Fossil fuels			Non-fossil fuels			
(a) without carbon tax							
	Coal	Lignite	Gas	Nuclear	Solar	Wind	Hydro
Australia	87	85	101		84	64	
Austria					108	76	54
Belgium			79		119	75	
Brazil		65	53		46	34	46
Canada			57		75	47	
China	52		74	66	51	70	
Denmark					69	42	
France				46	77	73	
India	63			48	36	36	49
Italy			77		115	176	135
Japan	75		82	87	198	170	142
Republic of Korea	52		81	53	97	137	
Netherlands (Kingdom of the)					85	41	
Norway					140	31	43
Russian Federation				42		70	
United States of America	97		52	47	98	70	98
(b) with carbon tax at $30.00/ton							
Australia	102	104	112		84	64	
Austria					108	76	54
Belgium			92		119	75	
Brazil		97	65		46	34	46
Canada			71		75	47	
China	75		84	66	51	70	
Denmark					69	42	
France				46	77	73	
India	85			48	36	36	49
Italy			91		115	176	135
Japan	100		93	87	198	170	142
Republic of Korea	76		91	53	97	137	
Netherlands (Kingdom of the)					85	41	
Norway					140	31	43
Russian Federation				42		70	
United States of America	114		58	47	98	70	98

Source: Levelised Cost of Electricity Calculator, interactive table of LCOE estimates from Projected Costs of Generating Electricity 2020 (IEA, 2020).

Note: Estimates from 12 January 2025. Average values by country for energy generation type, countries with at least two energy generation types.

carbon taxes and stringent environmental regulations, push up the production costs of fossil fuel energy (table 2.1.b), accelerating the transition to environmentally sustainable economies.

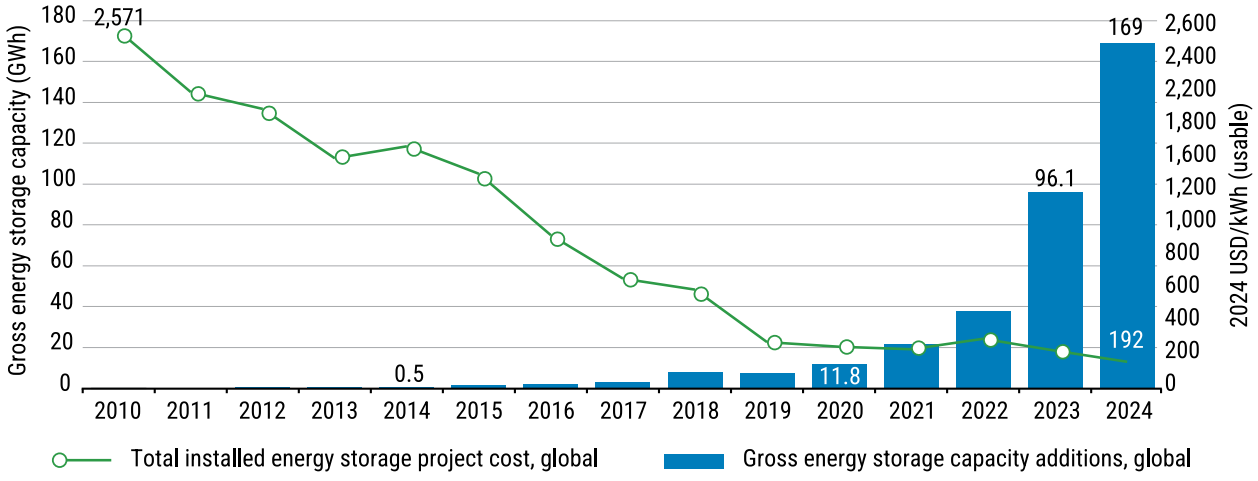
However, some factors make it difficult for renewable energy to be consistently cheaper than fossil fuels. These include low solar irradiation (the total amount of solar energy accumulated on a specific surface area over a given time); high installation, land, permitting, grid connection and labour costs; relatively high upfront costs for investment towards complex grid operations; and supply stability. Furthermore, the LCOE does not capture all the costs of adding new energy sources to the grid, such as those related to renewable energy. For example, the Ministry of Economy, Trade and Industry of Japan notes that these costs may also increase due to adjustment costs of other power sources (for example, liquefied natural gas-fired power plants must inefficiently increase or decrease output to stabilize the grid depending on the renewable energy supply); storage costs (such as storage and discharge losses by pumped hydro and grid batteries); and changes in the use of existing plants (METI, 2025). Overall, fossil fuels may remain an important source of energy until the renewable energy supply becomes not only unequivocally cheaper but also offers at least the same level of reliability, scalability and system robustness (IEA, 2025c).

Energy system stability with energy storage technologies

Technological progress and economies of scale are likely to steadily increase the competitiveness and reliability of renewable energy for continuous and consistent energy supply. Energy storage systems (ESS), such as batteries, are essential for renewables to achieve their grid-scale deployment. Energy storage is also essential to achieve energy supply stability and overall cost dominance over fossil fuels. For this reason, cost-competitive ESSs are a required catalyst for accelerated energy transition and market-driven departure from fossil fuels. Such storage systems allow energy to be stored from the power grid and released when it is most needed – such as at night (no solar) or during other generation disruptions (windless periods). Pumped-storage hydropower dominates for now, but this source is geographically limited. Therefore, batteries are increasingly used as they are readily scalable and can be used anywhere. Encouragingly, battery energy storage systems costs declined by 93% from 2010 to 2024, driven by scaled manufacturing, better materials and optimized production processes. Some economies have reached levels that can enable them for mass deployment at a competitive price (fig. 2.8) (IRENA, 2025).

One key challenge is the need for massive growth in energy storage capacity to align with net-zero goals. Currently, there is no renewable technology that can universally and reliably support continuous and stable supply energy needs (baseload energy). Furthermore, although battery costs have fallen sharply (fig. 2.8) due to electric vehicle (EV) production scaling, the recent increase in key mineral prices means that future production at scale depends on both technological innovation and stable mineral markets (Elalfy and others, 2024; IEA, 2025f).

Figure 2.8. Global gross battery storage expansion (kWh) and unit costs, 2010–2024



Source: IRENA, 2025.

Along with the expanded deployment of renewables, the need for system flexibility to balance renewable energy variability in the short-term and seasonally will increase. The short-term variability of photovoltaics (PV) is driven by daily solar cycles with predictable patterns. Wind energy has less short-term variability but has significant seasonal patterns. In South-East Asia, coal and gas power plants currently provide around 80% of flexibility needs and the remaining 20% is covered by hydropower (IEA, 2024a; IEA, 2025g). Nevertheless, with a growing share of renewable energy in the grid, the need for flexibility will increase.

Nuclear energy will increasingly substitute fossil fuels as a reliable, weather-independent energy source to support a broader shift to decarbonized power systems. To date, there are 34 signatories[5] to the 2023 COP28 pledge to triple nuclear energy by 2050, including many from Asia and the Pacific. China is the most recent example, having endorsed the pledge in December 2025 (FMPRC, 2025; Donovan, 2023; Albon, 2025). This revival of interest in nuclear energy investments across the region follows decades of global public opposition fuelled by the Fukushima disaster and misinformed energy and economic policies (box 2.1).

[5] **Armenia**, Bulgaria, Canada, **China**, Croatia, Czechia, El Salvador, Finland, France, Ghana, Hungary, Jamaica, **Japan**, **Kazakhstan**, Kenya, Kosovo, **Mongolia**, Morocco, **Netherlands (Kingdom of the)**, Nigeria, Poland, **Republic of Korea,** Republic of Moldova, Romania, Rwanda, Senegal, Slovakia, Slovenia, Sweden, **Türkiye**, Ukraine, the United Arab Emirates, **the United Kingdom of Great Britain and Northern Ireland** and **the United States of America*** (ESCAP member States in **bold).** *By diplomatic note dated 30 January 2026, the United States of America notified the Executive Secretary of ESCAP of its decision to withdraw from the Commission.

Production potential and labour skills constraints

Decarbonization and the transition to environmentally sustainable economies are also held back by insufficient production potential and labour skills constraints, which cannot be overcome simply by injecting additional financial resources. First, the supply of critical minerals remains limited without prospects of rapid expansion in the near future (IEA, 2025c). For example, the average time from the discovery of required resources such as nickel, zinc, copper or lithium to mine construction takes around 18 years, up from around 13 years two decades ago. Individual cases might take longer – 32 years for Bystrinskoye copper mine in the Russian Federation, or Celestial mine in the Philippines, built 29 years after the deposit discovery. While the construction process is often shorter due to technological advancement, permitting and financing periods tend to be longer (Manalo, 2024). Furthermore, minerals usually described as "rare earths" are actually not that rare in earths' crust.

Box 2.1. Misinformed energy policies can slow decarbonization efforts and undermine economic performance

Withdrawal of investments in nuclear energy, as a result of misinformed policies, can lead to a costly misallocation of resources with lasting adverse implications for decarbonization paths and transition plans. Germany's costly phase-out of nuclear power, which incurred an estimated €696 billion (roughly $820 billion) in expenditures and subsidies as part of the country's efforts to move towards renewable energy between 2002 and 2022, stands as a cautionary tale for Asia and the Pacific. Had Germany maintained and expanded its nuclear capacity, emissions could have been reduced by 73% or more – at half the cost (Emblemsvåg, 2024). Lacking a stable and predictable nuclear backbone energy supply, Germany partially reverted to coal in 2022 (Schmitz, 2022), with a further 20% increase in coal burn even in 2025 (Aicardi and Gupte, 2025). In 2026, German Chancellor Merz named the nuclear withdrawal a "serious strategic mistake," a statement fully endorsed by the International Energy Agency (Welt, 2026; Serrao, 2026). Given the changing global stance on nuclear energy, the World Bank (2025b) reversed its long-standing ban on funding nuclear projects, while the Asian Development Bank emerged as a vocal proponent of nuclear technology in November 2025 (ADB, 2025).[a]

[a] The resurgence of nuclear energy has been vigorously championed by the International Atomic Energy Agency, which has observed a marked acceleration in global commitments over the past two years.

The bottlenecks are in their concentrated processing and smelting locations and capacity. For example, China refines 91% of the global supply of elements necessary for magnet production as of 2024 (IEA, 2025h), and 70% of 19 minerals deemed as critical for new technologies and green transition (REE, 2026). Estimates suggest that by 2030, China will still control 51% of the production and 76% of the refining of "rare earths" (Fink, 2026).

Second, shortages of skilled labour are on the rise, with around 60% of energy firms reporting shortages. This is visible even in economies where energy transition is a government priority, supported by increases in vocational and tertiary education in energy-relevant degrees, like in China or Indonesia (IEA, 2025i). Skilled labour shortages are reported by other economies in the region as well, such as Thailand (Rattanakhamfu, 2023; The Nation, 2025) and India (Kumar and N R, 2024). In summary, the shortage of mineral resources and skilled labour makes it harder to overcome infrastructure bottlenecks, such as those related to the power grid in Viet Nam (ETP, 2023), Kazakhstan (Bakdolotov, 2025) and other countries.

2.2.3. Future energy and emission scenarios

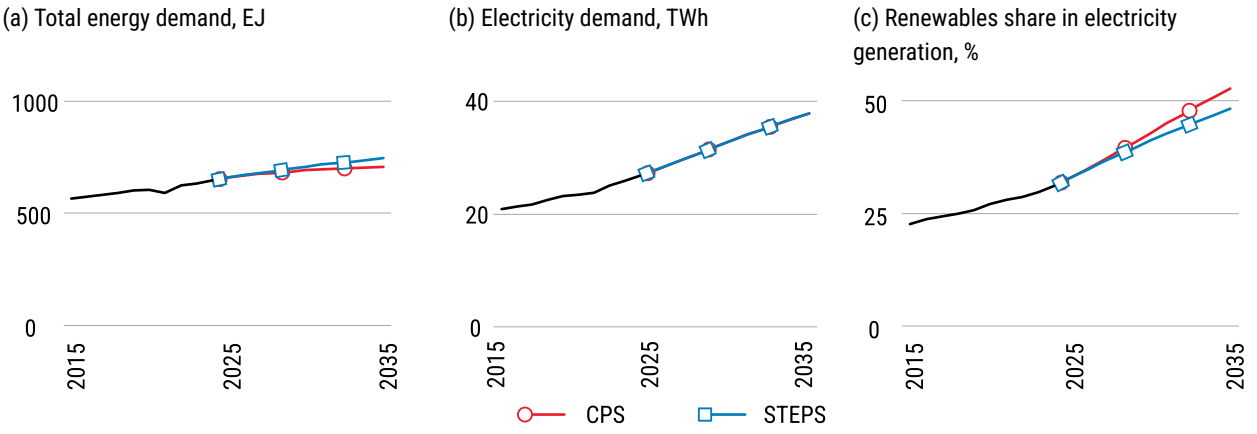
The sharp drop of renewable energy costs – backed by rapid advancements in energy storage technologies – signals promising progress in energy transition. The absolute competitive dominance of renewables over fossil fuel energy is likely to be achieved soon with more investment, innovation and commitment to transition to environmentally sustainable economies. Once achieved, the required scalability of such technologies will also become feasible to attain.

Energy transition scenarios based on current policies show an increasing share of renewables in meeting the surging electricity demand. The International Energy Agency (IEA, 2025j) examines two principal baseline scenarios: the Current Policies Scenario (CPS) and the Stated Policies Scenario (STEPS).[6] Both scenarios project global energy demand growth, under different assumptions, and exclude ambitious decarbonization pledges that lack firm implementation. In both scenarios, virtually all net increase in energy demand is attributed to emerging market economies, in particular China, India and economies in South-East Asia. China is projected to account for roughly half of this increase. By contrast, developed economies are expected to consume less electricity in 2035 relative to 2007 (figs. 2.9 a–c).

At the same time, based on current policies, these scenarios do not predict considerable reduction in the use of fossil fuels to meet the rising energy demand. For instance, they do not predict for oil to peak before 2050,

[6] The Current Policies Scenario builds on a narrow reading of today's policies, taking only those that are adopted in legislation and regulation. It also projects slower growth in the adoption of new technologies in the energy system than that seen in recent years. The Stated Policies Scenario builds on a broader reading of the policy landscape, taking account of those that have been formally tabled but not yet adopted and those in other official strategy documents. It also assumes a more dynamic perspective on energy technology and market trends. Referring to the Paris Agreement, the latest NDCs from 2025 do not imply additional ambition beyond those included in STEPS (IEA, 2025j).

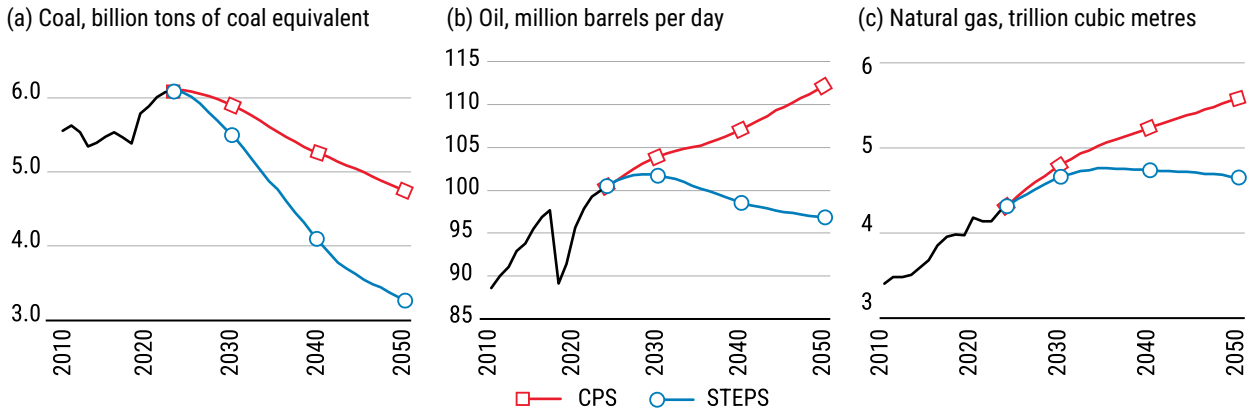
Figure 2.9. Total (projected) global energy demand, electricity demand and share of renewables in electricity generation, by scenario, 2015–2035



Source: IEA, 2025c.

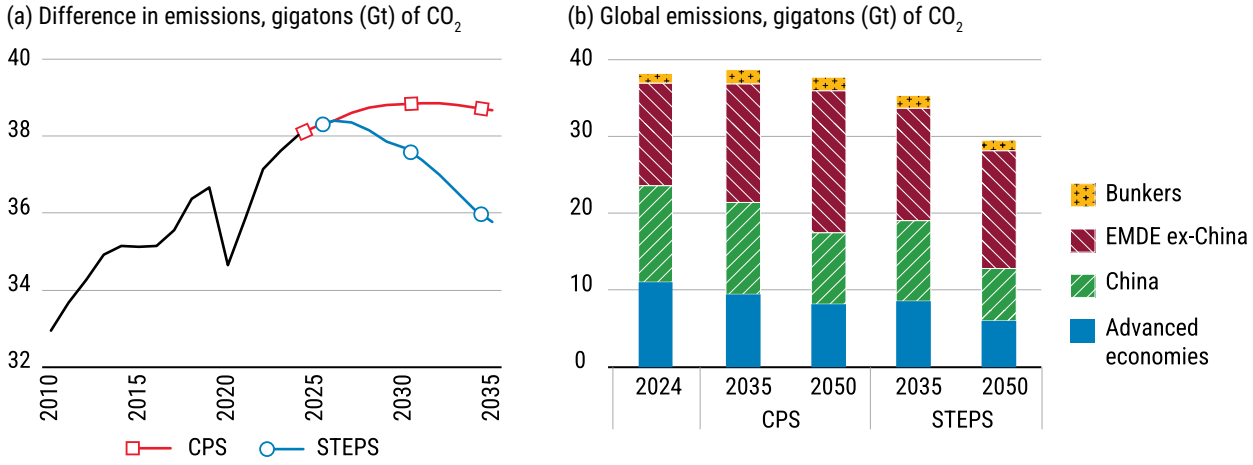
unlike more ambitious alternatives. China, India and the South-East Asia subregion are the major drivers of the overall rising trend of fossil fuel consumption to meet increasing energy demand, as developed economies are predicted to lower their fossil-energy consumption (figs. 2.10 and 2.11). This demonstrates a fundamental tension between the need to meet rising energy demand due to rapid economic development and the need for an ambitious transition to renewable energy sources (BP, 2025; IEA, 2025c). Under all scenarios, the average expected temperature rise is far above the net-zero scenario by 2050 (fig. 2.12).

Figure 2.10. Global demand for coal, oil and gas by major driver and scenario, 2010–2050



Source: IEA, 2025c.

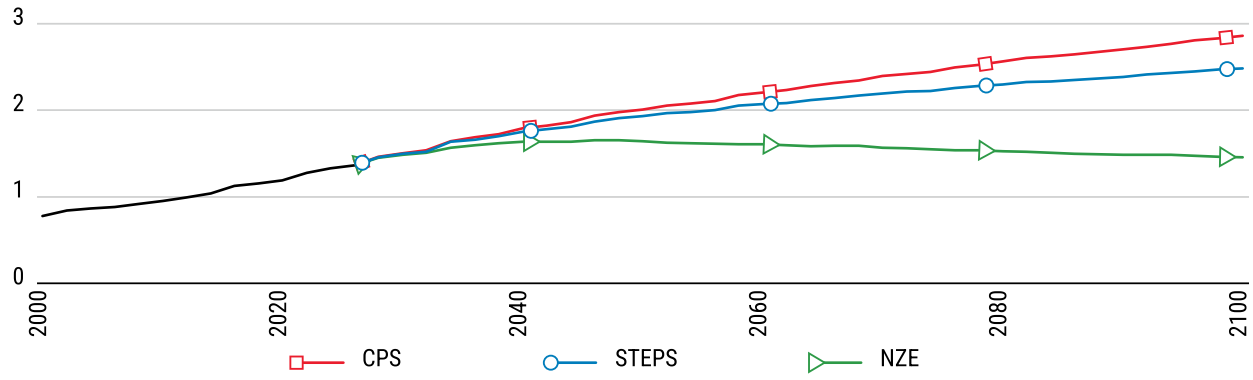
Figure 2.11. Energy-related CO_2 emissions by region and scenario



Source: IEA, 2025c.

Notes: CPS – Current Polices Scenario; STEPS – States Policies Scenario; EMDE – emerging markets and developed economies; bunkers – international aviation and marine ship emissions.

Figure 2.12. Temperature increase forecast, by scenario, 2000–2100



Source: IEA, 2025c.

Notes: NZE - Net-zero Emissions by 2050 scenario.

Liquified natural gas will steadily gain in importance. In the most economically favourable scenario, Shell envisions natural gas demand to continuously grow for India until 2050 and beyond, and peak for China and other Asian economies post-2040, yet with very steep decline afterwards (Shell, 2025). Similarly, British Petroleum expects liquified natural gas to gain prominence in Asia in the coming years (BP, 2025). However, Shell predicts the overall peak of fossil fuels before 2035, as declines in other fossil energy sources offset gas consumption (Shell, 2025).

Accelerated decarbonization requires transformations across all economic and social sectors and cannot succeed without an unprecedented scale-up and adoption of new technologies. Reasonable scenarios that capture the current trajectories of economic growth, energy demand, adoption of renewables and available technologies, as discussed above, do not support an immediate and wholesale shift away from fossil fuels. Renewables will only dominate the energy mix when they are able to economically deliver the same reliability, robustness and uninterrupted availability as power systems dominated by fossil fuels. Achieving those attributes requires complimentary technologies, for example, large-scale electricity storage such as batteries, that remain expensive in many contexts.

2.3. Transition to environmentally sustainable economies and nationally determined contributions[7]

The overarching objective of ongoing economic transformations, including in the energy sector, is to limit greenhouse gas emissions to slow the average temperature rise and reduce the negative impact of energy-intensive economic activity on the environment. Ambitions to this end are featured in the 2030 Agenda for Sustainable Development and in international treaties such as the Paris Agreement. The latter, for example, seeks to keep "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" (UNFCCC, 2025a). However, the Paris Agreement neither explicitly mentions timeframes of decarbonization for individual economies, the intensity of this process, nor the economic means to achieve them or the implications of such transformation. These should be presented by individual signatories in their Nationally Determined Contributions.

Nationally Determined Contributions (NDCs) serve as principal road maps for reducing greenhouse gas emissions. They set out each country's emission-reduction targets, strategies, policies and time frames, together with planned measures to enhance resilience and adapt to climate change (UNFCCC, 2025a).

NDCs contain various emission reduction targets and do not always aim for an absolute reduction. Most of them present three distinct scenarios: (i) a business-as-usual (BAU) projection; (ii) an "unconditional" scenario in which a country relies solely on domestic resources to curb emissions; and (iii) a more ambitious "conditional" scenario contingent on international support (table 2.3). For example, Bangladesh's 2021 NDC projects that under the BAU scenario, emissions will rise by 2.4 times from the base year of 2012 to 2030 (NDC Bangladesh, 2021). Emissions are projected to increase by 2.3 and 2.1 times under the unconditional and ambitious conditional scenarios, respectively. The total emissions are set to rise in all scenarios.

Countries adopt markedly different approaches to emissions reduction, reflecting their distinct economic and environmental priorities (United Nations, 2026**).** Around half of Asia-Pacific economies committed to business-as-usual (BAU) targets – the approach most popular among least-developed, developing and small island economies. These targets measure reductions relative to projection based on current climate policies, which allows substantial increase in emissions if growth exceeds expectations. India and Uzbekistan opted for intensity-based targets, seeking to reduce emissions per same unit of GDP. This approach allows emissions to rise along with GDP growth, albeit at a slower rate than in the past. Singapore has adopted a fixed-level target, committing to a precise absolute

[7] This section discusses greenhouse gas (GHG) emission reduction targets presented by selected countries in Nationally Determined Contributions (NDC) submitted under the Paris Agreement. The section highlights various nuances of GHG emission reduction plans, often pointing out differences between countries, targets ranging from net towards total emission reductions, and various approaches to net-zero goals. This information should not be interpreted as either an endorsement or condemnation of respective NDC goals. NDCs should be interpreted within the context of economic development level, economic structure, current energy mix, access to resources, historical background, geographical location and other socioeconomic factors relevant for the respective countries.

reduction in carbon dioxide emissions. Such a restrictive target offers high certainty of achieving reductions but may constrain economic expansion if the emission limit is approached or exceeded. All remaining economies in the region, spanning developing to developed ones, have chosen absolute reduction targets, which aim to cut emissions below levels in a historic reference year. Absolute reduction targets represent the strongest form of emissions commitment. Unlike BAU approaches, they do not permit unrestricted emissions growth, and may, therefore, prove more restrictive for economic growth (PBL, 2024) (table 2.2).

Countries in the Asia-Pacific region also show different levels of commitment to net-zero emissions, categorized into declaration pledges, policy documents and legal commitments (ECIU, 2025) (table 2.3). Several economies, such as Indonesia, Niue and Sri Lanka, have made declaration pledges but still lack implementation frameworks or legal backing. China, India and

Table 2.2. Variety of approaches in emissions reduction strategies in NDCs

	Business-as-usual (BAU)	Intensity-based target	Fixed-level target	Absolute emission reductions
Explanation	Country aims to reduce emissions relative to BAU. A projected baseline scenario of greenhouse gas (GHG) emissions assuming no additional mitigation policies or measures beyond those already in place. NDCs often express reductions as a percentage below BAU levels (e.g., 20–25% below BAU by 2030), allowing flexibility for economic growth while enabling ambition tracking. It serves as a reference for progression.	A mitigation goal expressed as GHG emissions per unit of economic output (e.g., emissions intensity per unit of GDP) or per unit of activity (e.g., per capita or sectoral output), rather than total emissions. This allows emissions to rise with growth but at a slower rate, common for developing countries to balance development and climate action.	A specific, unchanging cap on total GHG emissions for a given year or period (e.g., emissions not to exceed 10 $MtCO_2e$ by 2030), providing clear accountability but less flexibility for economic variability. Often used in updated NDCs for enhanced transparency.	An economy-wide target to reduce total GHG emissions by a fixed amount or percentage from a base year (e.g., 40% below 1990 levels by 2030), representing the most direct form of ambition. Developed countries must undertake these; developing countries are encouraged to adopt them progressively.
Afghanistan	✓			
Armenia				✓
Australia				✓
Azerbaijan				✓
Bangladesh	✓			
Bhutan				✓
Brunei Darussalam	✓			
Cambodia	✓			
China				✓
Fiji	✓			
Georgia				✓
India		✓		
Indonesia				✓
Japan				✓
Kazakhstan				✓
Kiribati	✓			

Table 2.2. continued.

	Business-as-usual (BAU)	Intensity-based target	Fixed-level target	Absolute emission reductions
Kyrgyzstan	✓			
Lao People's Democratic Republic	✓			
Malaysia				✓
Maldives	✓			
Mongolia	✓			
Myanmar	✓			
Nepal	✓			
New Zealand				✓
Pakistan	✓			
Philippines	✓			
Republic of Korea				✓
Russian Federation				✓
Singapore			✓	
Solomon Islands	✓			
Sri Lanka	✓			
Tajikistan				✓
Thailand				✓
Turkmenistan	✓			
Türkiye	✓			
Uzbekistan		✓		
Viet Nam	✓			

Source: UNFCCC, 2025b.

Table 2.3. Net-zero emissions pledges by ESCAP members and associate members, target year and legal status

Status/target year	2045	2050	2060	2070
In law		Armenia, Australia, Fiji, France, Netherlands (Kingdom of the), New Zealand, Republic of Korea	Kazakhstan, Russian Federation	India
In policy document	Nepal	Bangladesh, Brunei Darussalam, Cambodia, Georgia, Japan, Lao People's Democratic Republic, Malaysia, Marshall Islands, Papua New Guinea, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Tuvalu, Türkiye*, Vanuatu, Viet Nam	China	
Proposed/ in discussion			Kiribati, Kyrgyzstan, Myanmar, Nauru, Pakistan, Palau, Samoa, Timor-Leste,	
Declaration/ pledge		Micronesia (Federated States of), Niue, Uzbekistan	Indonesia	

Source: ESCAP estimates based on UNFCCC, 2025b and ECIU, 2025.

Note: *2053.

Thailand have integrated net-zero targets into policy documents; a pathway to carbon neutrality but without enshrining them into law. The strongest commitments come from countries that have codified net-zero targets into national law, ensuring long-term policy stability and accountability, including Australia, Fiji, Kazakhstan, Maldives and the Republic of Korea (table 2.3).

Like many countries in other parts of the world, NDCs submitted by Asian and Pacific countries exhibit widely varying ambitions, however, they often lack detailed, credible pathways for substantial GHG reductions. Moreover, despite containing distant net-zero target dates, NDCs typically omit detailed interim timelines for mitigation and adaptation measures, although the timing and pace of these measures also play a key role in determining the costs and impacts of the transition to environmentally sustainable economies.

Finally, the scenarios presented in NDCs rarely refer to the economic implications of the climate and environmental commitments or the mobilization of required fiscal and financial resources. For example, "GDP" is mentioned in 88% of the latest NDCs submitted by Asian and Pacific countries. The word "fiscal" can be found in 51%, but none of them refers directly to "fiscal revenues" or "fiscal expenditures." Only 12% make some explicit reference to "fiscal policy." None mentions "monetary policy," while topics such as "interest rates" and "inflation," fundamental for calculation of financing and investment needs, are mentioned in 10% and 15% of NDCs, respectively. Labour market topics are also not universally mentioned, with "employment" discussed in around two thirds of the reports, and "unemployment" in one third (table 2.4).

Table 2.4. Share of the most recent NDCs where selected words and phrases were mentioned at least once

Category	Word/phrase	Mentioned in NDC
GDP and GDP components	GDP/Gross Domestic Product	88%
	Trade	78%
	Export(s)	76%
	Import(s)	63%
Fiscal policy	Fiscal	51%
	• Fiscal policy	12%
	• Fiscal revenue(s)	0%
	• Fiscal expenditure(s)	0%
	Debt/Public debt	32%
	Tax(es)	49%
	Carbon tax(es)	15%
Monetary policy	Monetary policy	0%
	Interest rate(s)	10%
	Inflation	15%
Labour market	Employment	63%
	Unemployment	29%
	Productivity	78%
Climate	Climate	100%
	GHG/Greenhouse	100%
	Emission(s)	100%
	Carbon	100%

Source: ESCAP estimates based on NDCs from UNFCCC, 2025c.
Note: Data from the 41 latest available NDCs from the Asia-Pacific region accessed in January 2026.

2.4. Macroeconomic implications of the transition to an environmentally sustainable economy

Aligning economic activity with environmental sustainability comes at a cost due to the resource-intensive processes required for such a transition. These costs are either amplified or mitigated by the chosen timeframe and intensity of the transition. Rapid decarbonization of any economic sector has markedly different macroeconomic consequences compared to no or gradual decarbonization. The social impacts also vary considerably. The timeframe may prove decisive for the survival of entire economic sectors and communities, since processes such as reskilling have inherent minimum time requirements, as does investment in the development of low-carbon sectors.

A rapid transition entails substantial upfront economic costs in exchange for swift achievement of environmental and climate objectives, while also potentially constraining and crowding out other socioeconomic activities. In contrast, a more gradual transition minimizes economic disruption and spreads costs over a longer period, though at the expense of delaying the achievement of environmental and climate goals. Selecting the optimal pace of transition thus becomes an exercise in identifying the trajectory that yields the greatest net benefit.

Taxes, subsidies and regulations alter the relative costs of fossil and non-fossil energy and are the primary instruments available to governments for accelerating the transition to an environmentally sustainable economy. By using these tools, they influence the direction and pace of technological progress while addressing economic constraints through targeted interventions. For example, non-fossil energy sources and their associated technologies can be made more competitive either through direct subsidies or through additional taxes on fossil fuels. Carbon taxes exemplify such fiscal measures, while also generating potential co-benefits if their proceeds are spent efficiently and productively (carbon tax recycling).

Achieving a transition that delivers deep decarbonization at the lowest possible economic and social costs requires confronting several persistent, interrelated economic challenges. These challenges reveal the complex interplay between climate objectives, macroeconomic stability, distributional equity, and political and financial feasibility (table 2.5). Together, they underscore that successful decarbonization demands carefully sequenced, context-specific prioritization, balanced with effectiveness and acceptability.

Table 2.5. Key macroeconomic challenges of decarbonization

Challenge	Explanation	Implication
High short-term economic costs	Transitioning to net-zero could initially slow GDP growth due to increased energy costs, taxes and the cost of structural economic changes, especially in carbon-heavy economies like Indonesia and Malaysia.	Short-term fiscal planning and transition support are essential to managing the economic implications of the transition.
Job losses in the fossil fuels sector	The shift away from fossil fuels will eliminate jobs in coal mining and energy, especially in China, India and Mongolia. Job retraining and economic diversification will be necessary.	Labour transition programmes must be front-loaded and well-funded to maintain stability.
Regressive impacts of carbon taxes	Carbon taxes are likely to disproportionately impact lower-income households.	Policymakers need to enable and support restructuring of impacted income groups.
Weak financial systems hinder climate investment	Achieving climate goals requires substantial financial capital, especially from the private sector, but investment is stalled due to underdeveloped finance markets and risk aversion.	Transparency, stability of regulations, rule of law, and clearer policy frameworks are critical to scaling finance in support of the transition.
Transition finance gaps for carbon-intensive sectors	Sectors like steel and cement lack access to affordable capital for decarbonization, making it harder to meet emissions targets.	Support from development banks and/or innovative public-private mechanisms are needed to fill financing gaps in certain industries.
Carbon pricing alone is insufficient	Without industrial restructuring, energy subsidies, or technology incentives, carbon taxation by itself cannot meet deep decarbonization goals.	A policy mix that enables market-driven innovation and investment is more effective than pricing alone.

Table 2.5. continued.

Challenge	Explanation	Implication
Unrealistic assumptions regarding carbon price feasibility	Some carbon pricing trajectories may not be politically feasible. They overlook tax fatigue, resistance and affordability issues, especially in lower-income countries	Phased pricing with built-in equity mechanisms and public communication strategies are crucial.
Misguided macroeconomic policies	Overreliance on low-confidence macroeconomic indicator model estimates or narrow focus on high-risk, high-cost economic development paths may lead to both economic losses and lack of progress in climate action.	Economic and climate policy must embrace high uncertainty and risks related to selected economic environment sustainability transition policies, remaining open to their swift alteration for emerging better options.

Source: ESCAP, 2025.

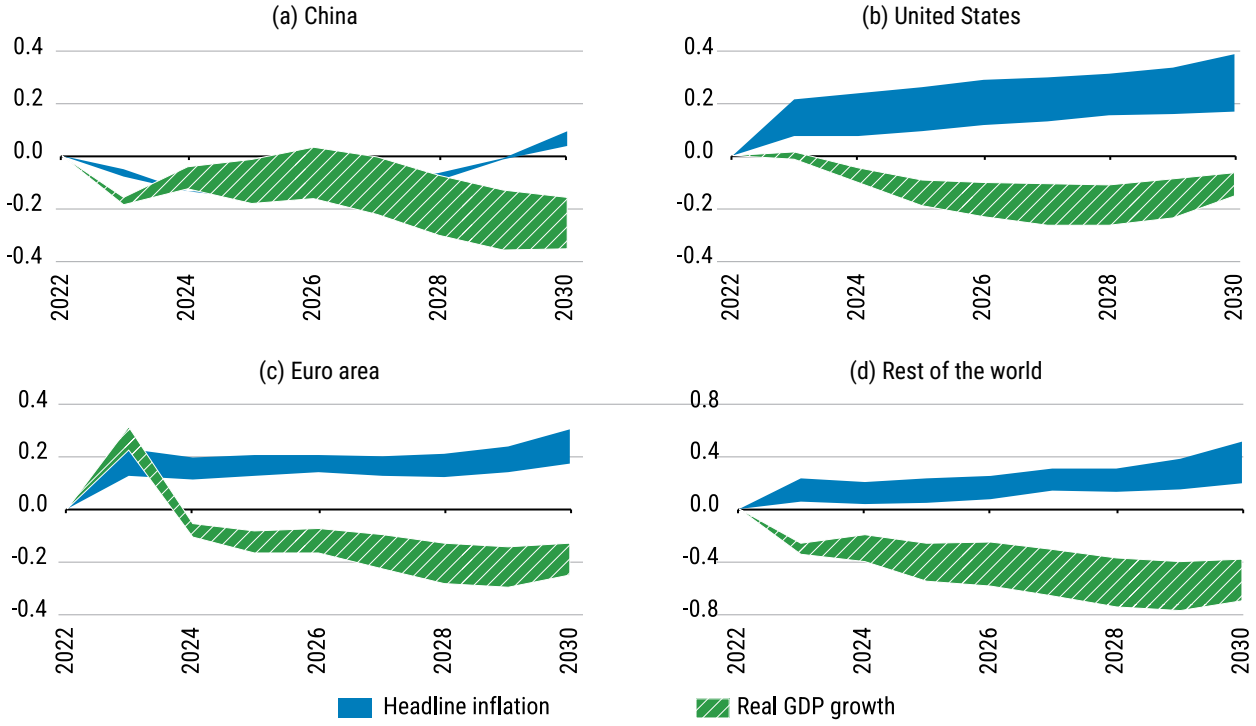
2.4.1. Economy-wide impacts

Decarbonization and the transition towards environmentally sustainable economies are expected to deliver sizeable long-term benefits in the future, yet at a significant economic cost now. The higher the economic dependence on fossil fuels for energy production, the larger the required resources for transformation (Carton and Natal, 2022). Nevertheless, it is broadly understood that the short- to medium-term economic losses due to climate mitigation efforts (fig. 2.13) are smaller than the long-term economic losses expected from the negative economic impact of climate change without mitigation and adaptation.

Modelled estimates of the impact of policy actions for the transition towards a sustainable economy show a diverse landscape in Asia and the Pacific.[8] For instance, modelling by Oxford Economics indicates that net energy exporters such as Indonesia and Malaysia would likely face

[8] All the model-based estimates are only baseline scenarios and do not include all possible technological advancements and policy action. Modelled estimates serve a indications, warnings or guidelines, and not as predictions of the future.

Figure 2.13. Projected short-term costs of climate mitigation: impacts on real GDP growth and inflation in selected economies, 2022–2030



Source: Carton and Natal, 2022.

Note: Global Macroeconomic Model for the Energy Transition and IMF estimates; the chart shows the range of values for growth and inflation for different assumptions on the speed of clean electricity transition; slower transition outcomes with higher inflation and lower GDP growth.

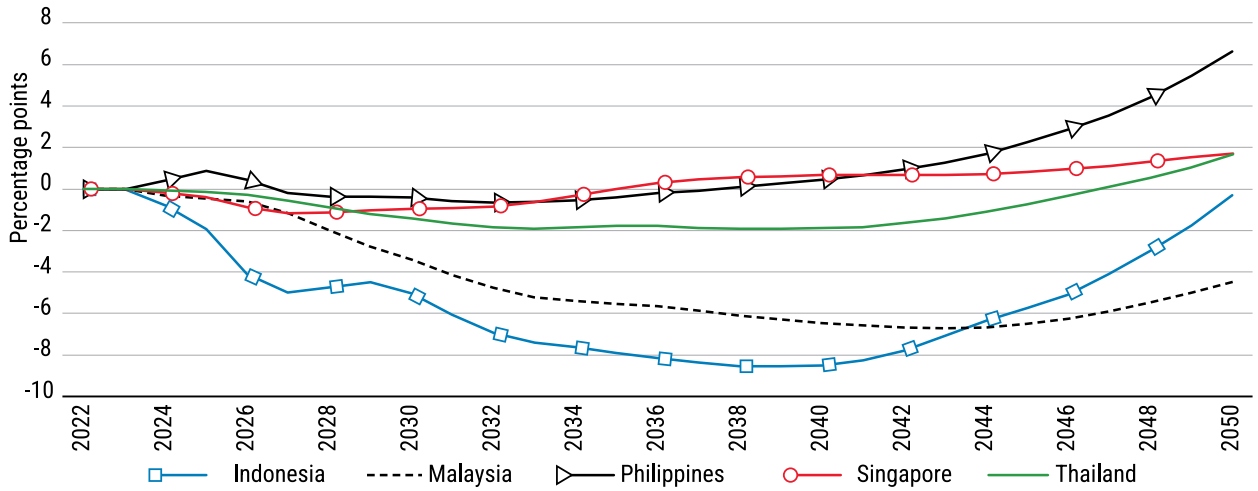
the steepest upfront burdens as they pursue net-zero transition. In 2030, their GDP could be around 5% and 3.5% below a 2022 baseline GDP projection, respectively. Thailand, with high energy intensity but lesser coal dependence, is projected to experience more modest economic growth with net-positive impact post-2045. Indonesia, heavily reliant on coal, is likely to significantly underperform economically (compared to a no transition scenario) only to return to 2022 baseline GDP estimate around 2050. GDP of Malaysia, heavily reliant on oil and gas, is forecast to still underperform by around 4% around 2050 compared to a 2022 baseline GDP projection (Oxford Economics, 2024). Based on the same study, the net impact could be positive for service-oriented economies like the Philippines and Singapore by around 2035–2040. The Philippines stands to gain most in the long run due to its low fossil-fuel dependence and substantial potential in renewable electricity generation and distribution, outperforming 2022 baseline GDP growth forecast by 6% in 2050 (figure 2.14).

Fossil fuel exporters will also face the impact of energy transition policies pursued by other countries. For the next decade, the consumption of coal is expected to peak under almost all International Energy Agency (IEA, 2025c) scenarios, followed by oil and gas (fig. 2.10). These changes will have a negative impact on the GDP of coal, oil and gas-producing countries, their corporate and fiscal revenues, and exports. For example, Indonesia, faced with a decline in coal exports, risks stranding coal assets of both energy producers and miners, and increasing non-performing loans for lenders. While international investors and multilateral development banks tend to exit coal financing, they might leave local banks exposed to stranded assets. Similarly, the state-owned PLN national electricity provider in Indonesia faces increasing risk premiums for financing which extends to public debt financing. Likewise, Petronas, Malaysia's national oil and gas company, generates up to 20% of government fiscal revenues and is responsible for substantial investments. In such cases, a decline in oil and gas sales will have severe consequences for national economic performance and fiscal policy in particular (Burge, Mok and Vaze, 2022).

The shift to renewables can lead to crowding-out effects with unclear net impacts on the green transition of other sectors. The World Economic Forum notes that observed lags in the decarbonization of sectors such as steel, cement or heavy transport are linked to channelling green investment predominantly to solar and wind energy projects, crowding out other investment due to limited financial resources. These effects typically involve diverting capital, research and development, or public revenues away from other sectors, including innovation in fossil efficiency, non-energy sectors or broader economic development. Crowding out occurs due to finite resources, path dependencies in technology, or revenue losses from stranding (WEF, 2021).

The above losses, however, are still smaller than the expected negative impact of slow onset and extreme weather events if not tackled by climate mitigation. The average estimate of the impact of climate

Figure 2.14. Projected impact on economic output of the net-zero transition on five South-East Asian economies, 2022–2050



Source: Oxford Economics, 2024.

Note: Baseline: business as usual.

change on economic output is always negative. Estimates suggest an annual loss of around 1.7% of economic output per capita, compared to scenarios with no climate change, with impacts significantly lower under a 1.5°C scenario than in higher warming scenarios (as negative impacts increase exponentially) (ESCAP, 2025; IPCC, 2022).

2.4.2. Employment

The phase-out of coal remains predominantly policy-driven, although market forces – spurred on by ever-cheaper alternatives – are increasingly accelerating it. Many coal regions already face intense competition from natural gas, renewables, nuclear power and imported coal, yet they frequently persist because of subsidies and preferential treatment. Consequently, when governments remove such direct and indirect support, closure becomes a political decision, even if driven by market-led outcomes. Irrespective of underlying forces, policies must still explicitly address the needs of affected communities, labour markets and the wider socioeconomic ramifications of the transition to an environmentally sustainable economy. One study warns, however, that policy shifts on coal can occur more rapidly than workers, companies or coal-dependent regions anticipate. Failing to shield communities from the adverse effects risks eroding public support for the transition as a whole – even in sectors and regions not directly affected (Caldecott, Sartor and Spencer, 2017).

The transition to an environmentally sustainable economy may generate sharp and uneven employment shocks in certain sectors despite simultaneous creation of environmentally sustainable job opportunities. There is a stark asymmetry between job destruction and job creation. In particular, job losses in fossil-fuel industries tend to be sudden, highly visible, concentrated in specific regions, and amplified by strong economic multipliers that translate into decline in consumption and investment (ESCAP, 2025; Vandeplas and others, 2022). In contrast, new job opportunities in clean and renewable energy, efficiency retrofits or circular-economy sectors emerge gradually, as they require time for re-skilling and investment deployment.

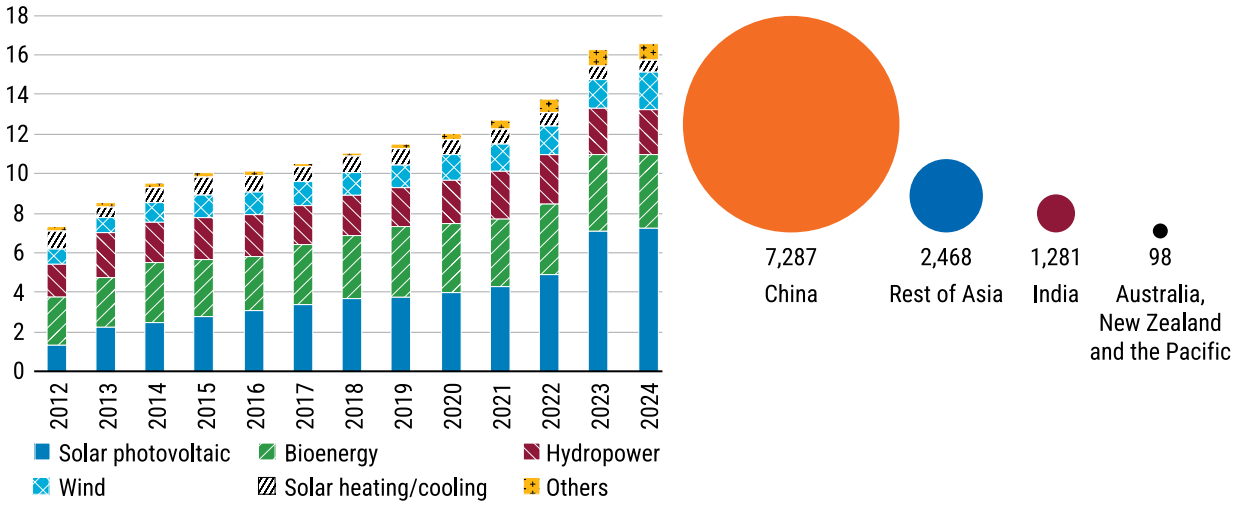
Unemployment typically rose in areas that already phased out coal, oil and gas production. Globally, a review of 130 of 167 research papers examining coal withdrawals since the mid-20th century found predominantly negative employment effects, particularly in coal-mining regions. Evidence from coal phase-outs across Europe, North America and increasingly Asia shows that mining and fossil-fuel dependent communities typically experience prolonged unemployment and lasting economic decline unless deliberate, well-funded economic support measures are implemented swiftly (Vandeplas and others, 2022). In recent years, further examples have emerged from Asia and the Pacific, notably China. Along with rising unemployment, economic stagnation was observed, with the industrial sector hardest hit (Diluiso and others, 2021). Similarly, a rapid phase-out from oil and gas would disrupt jobs far beyond the immediate areas of hydrocarbon exploration, extraction, processing, trade and consumption. This is because the sector is characterized by substantial capital investments and high wages, which have sizeable multiplier effects throughout the wider economy (Bivens, 2019; WEF and IHS CERA, 2012). Recognizing these asymmetric job impacts is crucial for designing policies that protect affected workers and areas, balancing the social impact with the objective of achieving an accelerated transition for environmental sustainability.

Workers whose jobs are at risk from the transition are less likely to find alternative employment, particularly older ones. Environmentally sustainable jobs are rarely created in the same locations where carbon-intensive jobs disappear (Curtis and Marinescu, 2022), leading to emigration of young and skilled people (Diluiso and others, 2021). Although emigration helps reduce the adverse impact of the transition in the short term, it may lead to permanent decline of certain economic centres partly because regions that are more diverse, better developed and with richer human capital offer more job opportunities (Zhao and others, 2025). Meanwhile, older workers in carbon-intensive sectors are more likely to exit the labour market permanently, with adverse consequences for regional fiscal sustainability. Taken together, national average employment data would never present a full transition picture; for that, detailed demographic and geographical data are needed.

The transition can foster job creation by shifting economies towards sustainable practices. Estimates by the International Renewable Energy Agency (IRENA) suggest there were around 16.6 million green jobs globally, with annual job creation of around 0.8 million between 2012 and 2024 – 7% annual growth (fig. 2.15). Out of these 16.6 million jobs, 7.3 million were in China, 1.3 million in India and 2.5 million in the rest of Asia – 44%, 8% and 15% of the

global total, respectively. This is still a fraction of the labour markets in the region, with clear dominance by China. However, as Asia and the Pacific accelerate the transition, investments in green technologies are expected to generate further jobs in sectors linked directly to energy sustainability as well as broader environmental sustainability. IRENA also highlights that tariffs, along with national industrial policies, are widely used to increase domestic production of green transition inputs and therefore contribute to the creation of green jobs at the national level. Assuming full implementation of policies that would align economies with the Paris Agreement's 1.5°C climate target, modelling points to a potential increase of global green jobs (box 2.2) to 30 million by 2030 (IRENA and ILO, 2026). This would imply a strong acceleration towards the creation of 2.7 million jobs per year from 2026 to 2030, compared to the annual average of around 0.8 million jobs from 2012 to 2024 (fig. 2.15).

Figure 2.15. Global and regional employment in the renewable energy sector, by subsector, 2012–2024



Source: IRENA and ILO, 2026.

Box 2.2. The definition of "green jobs"

Analyses of the employment impact of the transition to an environmentally sustainable economy and the design of effective policies are undermined by the lack of a precise, measurable and comparable concept of "green jobs". The widespread notion that the transition can be steered by policymakers through the tracking of "green job" creation rests on the assumption that such jobs can be reliably identified and quantified separately from fossil-fuel-related employment and the rest of the economy. Numerous attempts have been made to overcome this issue by entities such as the International Labour Organization (ILO) and Eurostat (ILO, 2018), as well as individual countries. According to one study by the ILO, "green jobs" refers to a subset of employment in the environmental sector that meets the requirements of decent work (that is, adequate wages, safe conditions, workers' rights, social dialogue and social protection) (ILO, 2013).

However, other employment measurements and economic indicators can also be used to guide the impact of the green transition. These may include measurements of the decline or development of economic sectors considered as "green" or "non-green," thus indirectly measuring employment, geographical monitoring of changes in employment with respect to regions considered fossil fuel-dependent, analysis of employment by age groups and analyses focused on re-skilling and the timeline for implementing the green transition.

2.4.3. Fiscal position, debt sustainability and financing requirements

The fiscal and financial implications of the transition to an environmentally sustainable economy vary depending on the pace and scale of decarbonization, and the chosen policy mix. Approaches that primarily rely on government direction and public resources, such as subsidies, inevitably require greater public spending and fiscal commitment, whether through higher tax revenues or increased borrowing. This places a burden on fiscal positions and public debt, and increases public default risk. It can also raise the probability of sovereign default and increase interest rates on government bonds. The negative impact rises with high initial government indebtedness as an elevated public default risk can worsen the financing conditions for the private sector, which in turn raises the overall cost of transitioning to a net-zero economy. By contrast, market-led strategies, in which governments focus on regulations and impose limits on fossil-fuel sectors to boost the development of non-fossil economic activity, shift more costs directly onto the private sector; consequently, less fiscal burden. Regarding public debt and investment in decarbonization, the International Energy Agency stresses the need for stronger analytical frameworks to assess the overall transition investment needs. IEA notes that inadequate cost-of-capital assumptions can misprice risk and lead to under- or overinvestment in different markets and sectors, with adverse consequences for debt sustainability (IEA, 2021a) and, consequently, the overall transformation.

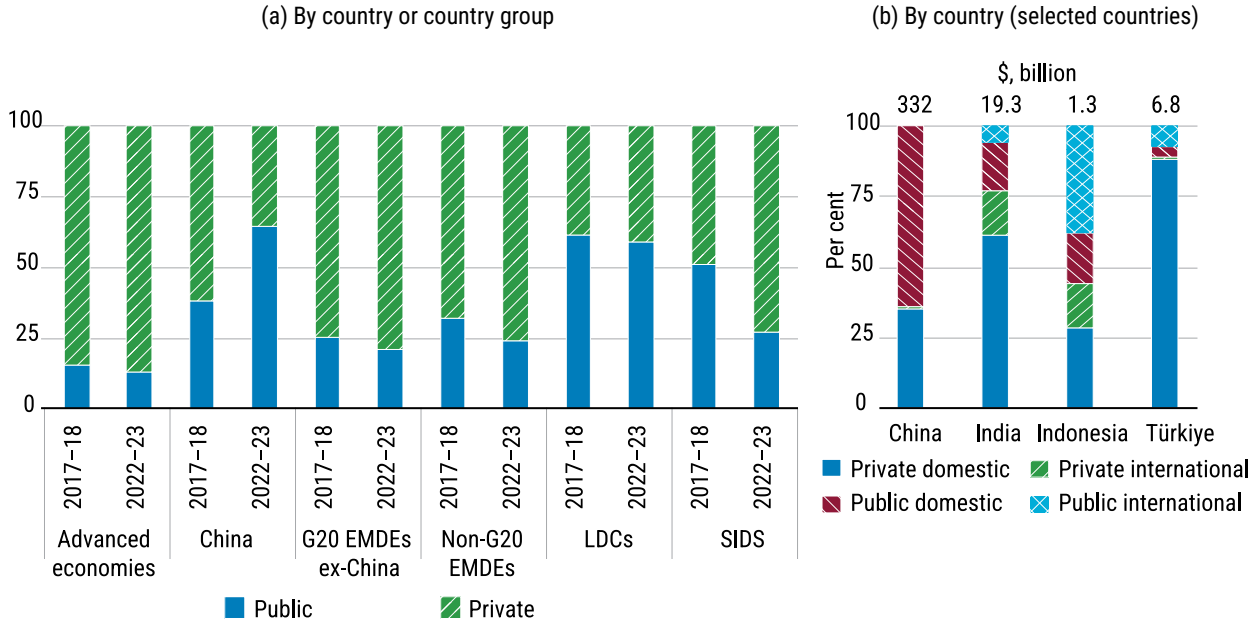
The transition will deliver benefits in the future, albeit with a considerable lag; however, the costs must be financed upfront. Achieving faster, broader and deeper decarbonization will entail significantly higher costs in the short to medium term. Benefits such as improved public health and avoided climate damage, however, need time to materialize. Because of this temporal mismatch, the immediate expenditures need to be met through some combination of additional public borrowing, higher taxes (including carbon taxes), or private equity and debt. In contrast, a more gradual transition would require lower initial expenditures.

As significant investments are required to support the transition, countries need to carefully assess the use of limited fiscal resources. For example, the infrastructure needed to reach net-zero emissions, varying by country, is estimated at 0.5–4.5% of annual GDP through 2030 (IMF, 2021); or about $6.5 trillion per year by 2030, increasing to $7.5 trillion by 2035, globally (Bhattacharaya and others, 2025). These investments are not purely additional spending but involve reallocating scarce resources over time, such as skilled labour, existing infrastructure and raw materials. As a result, governments should view transition-related spending as shifts in how resources are allocated across the economy over time.

The transition towards environmentally sustainable economies in the Asia-Pacific region has largely been led by the public sector. Countries adopted different approaches; while on average, 68% was provided by the public sector, the remaining 32% came from corporations, households and commercial financial institutions, dedicated almost entirely to mitigation, with some variation (fig. 2.16 and table 2.6) (ADB, 2023). Furthermore, the future requirements of the green transition are far greater than the available public resources and would require broader involvement of the private sector (Bhattacharaya and others, 2025). Therefore, achieving an accelerated transition requires larger and faster private finance flows, which is better from the public debt sustainability perspective as well (ESCAP and others, 2025).

Declining government revenues stemming from fossil fuel could also undermine fiscal positions amid high fiscal expenditure for the transition. The global shift away from fossil fuels is creating significant fiscal pressures especially for governments that rely on taxes from fossil fuels (for example, excise duties on gasoline and diesel) and combustion engine-related activities (such as vehicle registration fees tied to fuel use) or are directly involved in fossil fuel extraction and production. Shrinking revenues could exacerbate budget strains at a time when expenditures for the transition – such as subsidies for renewable energy, infrastructure upgrades for electric vehicle charging, disaster resilience and low-carbon technology investments – are expected to rise sharply. One recent study notes that public revenues from fuel taxes totalled around $900 billion in 2023, ranging from 4 to 8% of fiscal revenues, climbing to 9% in low-income countries (fig. 2.17) (Noll, Schmidt and Egli, 2026). Although the decline in fossil fuel-related fiscal revenues has been anticipated, the transition is happening faster than expected, largely due to the rapid increase in affordable electric vehicles from China.

Figure 2.16. Investment in renewables by source (public or private), shares of total investment, 2017–2023



Source: IRENA and CPI, 2025.

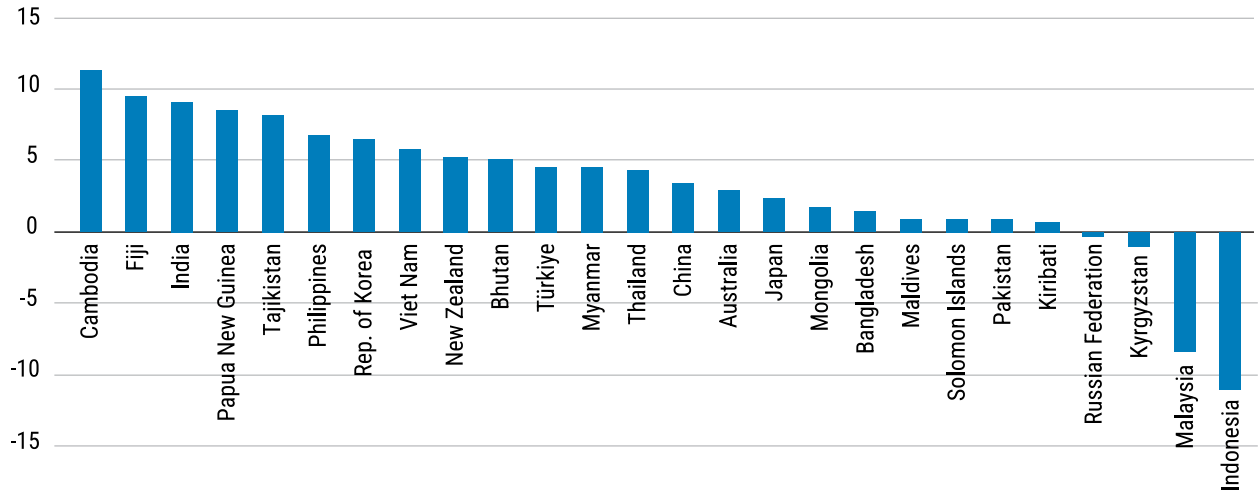
Note: EDME - emerging and developing economies; LDC – least developed countries; SIDS – small island developing States.

Table 2.6. Sources of climate action financing, % shares of total financing, by subregion, 2018–2019

Subregion	Public finance	Private finance
Central and West Asia	64	36
East Asia	68	32
South Asia	67	33
South-East Asia	65	35
Pacific	97	3

Source: ADB, 2023.

Figure 2.17. Revenues from fuel taxes as shares of total government revenues, selected economies, 2023



Source: Noll, Schmidt and Egli, 2026.

2.4.3.1. Carbon taxes and their recycling

The prevailing strategy for transitioning to environmentally sustainable economies hinges on governments raising fossil fuel costs through carbon taxes, thereby boosting the relative competitiveness of low-carbon alternatives. The implementation of carbon taxes in the Asia-Pacific region has mostly taken place in advanced economies (table 2.7), with considerable variation among countries (fig. 2.18).

While carbon taxes can help reduce emissions, they can also dampen economic activity. Poorly calibrated or abruptly implemented carbon pricing could hinder economic activity, drive unemployment higher, trigger inflation, reduce competitiveness, lower energy affordability for households and create administrative burdens. For example, the International Monetary Fund estimates that carbon taxes that would gradually achieve a 25% reduction in greenhouse gasses between 2022 and 2030 could slow global economic growth by 0.15 to 0.25 percentage points annually, depending on the adjustment capacity of impacted regions. Such taxes could also increase inflation by 0.1 to 0.4 percentage points over the baseline (IMF, 2022).

The impact, however, varies substantially by economy, and in some cases, carbon tax recycling can offset or even reverse the negative impact (Xiao and Chen, 2020; Xu and Zhang, 2025). One study found that carbon taxes would reduce GDP in Japan by 1.2% and employment by 0.4% compared to the baseline scenario, although these reductions would be offset when carbon tax revenues were recycled efficiently (Lee, Pollitt and Ueta, 2012). However, in Indonesia, the introduction of a carbon tax negatively affects coal-dependent regions. Even with carbon-tax recycling, the net impact remains negative, with unemployment rising in mining and related industries (Sutisna, 2023).

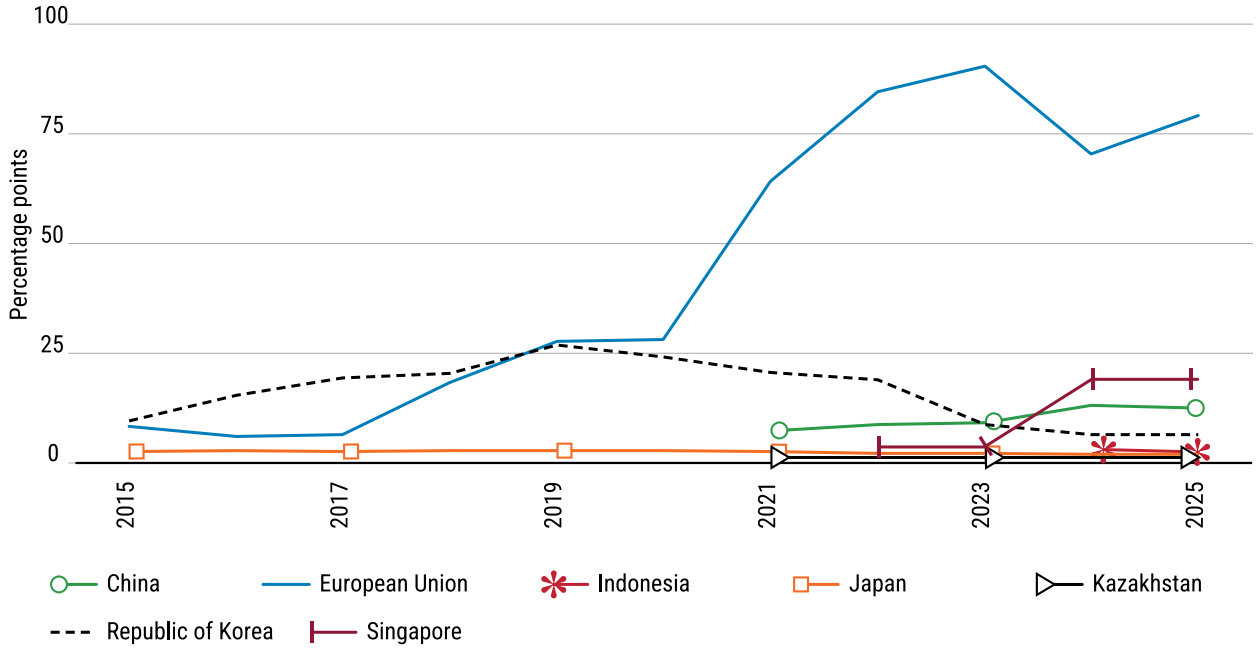
Carbon tax revenues are recycled either directly through public spending or indirectly by forgoing tax revenue such as tax exemptions and accelerated capital depreciation. In both cases, recycling requires government officials to choose which industries, technologies and specific parameters will, in their judgement, deliver the greatest decarbonization impact. Furthermore, supporting green and environmentally sustainable sectors remains difficult due to the lack of clear definitions of such activities (box 2.3), amplifying inefficiencies and reducing fairness in subsidy granting. These decision-making processes are often characterized by shortcomings, including incomplete information,

Table 2.7. Existing emissions trading systems (ETS) and carbon taxes in Asian and Pacific countries

	Instrument	GHG coverage	Sectoral coverage	Regulated gases	Number of emitters covered
Republic of Korea	National ETS (volume-based cap)	79% of national GHG emissions	Heat and power, industry, buildings, waste, public sector, transportation	CO_2, CH_4, N_2O, HFCs, PFCs, SF_6	685
China	National ETS (intensity-based cap)	60% of national CO_2 emissions	Power, steel, cement, aluminium	CO_2 (power, steel, cement, aluminium), CF_4 & C_2F_6 (aluminium)	3757
Kazakhstan	National ETS (volume-based cap)	50% of national CO_2 emissions	Power and centralized heating, extractive industries and manufacturing and processing industry	CO_2	212
Indonesia	National ETS (intensity-based cap)	24% of national GHG emissions	Power	CO_2, CH_4, N_2O	146
Japan	National carbon tax and subnational ETS	70% of national GHG emissions	Carbon tax: fossil fuels; buildings, industry	CO_2	Tokyo: 1400; Saitama ETS: 600
Singapore	National carbon tax	70% of national GHG emissions	Manufacturing, power, water, waste	CO_2, CH_4, N_2O, SF_6, NF_3, HFCs, PFCs	50

Source: Iyer and Tan, 2025.

Figure 2.18. Evolution of carbon tax levels in selected economies, 2015–2025



Source: Iyer and Tan, 2025.

Box 2.3. Challenges in defining "green sectors" for effective carbon revenue recycling

Numerous studies suggest that reinvesting carbon-tax revenues into so-called "green sectors" can offset or even reverse the economic costs of carbon tax. Asian and Pacific governments have substantially progressed in developing their green taxonomies, facilitating decision-making for reinvestment of fiscal revenues into "green sectors." Even so, there is still no universally accepted, objective taxonomy for classifying economic activities as genuinely "green."

The mining industry offers an illustrative example. Critical minerals such as lithium, cobalt, nickel and rare earths are indispensable for batteries, wind turbines and other low-carbon technologies, yet mining is usually categorised as a "brown" or high-emission sector because of its historical environmental damage and current energy-intensive practices (IEA, 2024b; Hund and others, 2023). Modern, high-standard mining operations that employ closed-loop water systems, electrification and rigorous rehabilitation can significantly reduce environmental impacts, sometimes comparable to or better than certain renewable-energy manufacturing chains (Song and others, 2025; Lèbre, Sharma and Remigio, 2024). Some taxonomy frameworks effectively exclude the sector from "green economy" definitions, like the European Union Taxonomy (European Union, 2020) or the ASEAN Taxonomy (ASEAN, 2024) that imposes thresholds so stringent that few real-world projects qualify. Others make reference to technologies that facilitate more environmentally-friendly mining practices, like the Directory of Green Finance Supported Projects of the People's Bank of China (PBoC, 2025).

Given the challenges involved in defining green finance and taxonomies in diverse market conditions, researchers note a variety of green policy impacts. These include, for example, green finance approaches largely successful in Asian and Pacific settings (Azhgaliyeva, Beirne and Mishra, 2022). There are some indications of shifts, such as the abandonment of controls-based lending by the People's Bank of China (PBoC) which moved from discouraging lending to carbon-intensive and polluting industries before 2007 to removing sustainable objectives for priority lending guidance in 2019. Finally, PBoC moved towards market-based guidance in its

Box 2.3. continued.

more recent *Guidelines for Establishing the Green Financial System* (Dikau and Volz, 2021; Diaz-Rainey and others, 2023).

Similar boundary problems can also be seen in sectors such as bioenergy, hydrogen produced from natural gas with carbon capture and storage (Jacobson and others, 2025), waste-to-energy plants and large-scale hydropower. Definitions that are too narrow risk misdirecting fiscal incentives towards politically favoured but suboptimal technologies, while penalizing sectors that are essential enablers of decarbonization.

To this end, proposed solutions include adopting performance-based, technology-neutral criteria (for example, life cycle greenhouse gas thresholds and verifiable environmental management standards) as opposed to rigid sector lists; regularly updating taxonomies through independent scientific panels; and introducing transitional categories that reward demonstrable improvement trajectories. Until these adjustments are widely implemented, modelling results that assume efficient revenue recycling into "green sectors" should be interpreted with caution.

inadequate data and evidence to justify the selection of subsidised environmentally sustainable solutions, and mismatch between the promoted technologies and local conditions (Segerson and others, 2024; OECD, 2024b).

Recycling the income from carbon taxes by lowering other taxes, direct transfers to households or subsidies for green technologies is a must, yet highly complex. Modelled estimates show an overwhelmingly positive impact of the rechannelling of fiscal revenues raised through carbon taxes into an economy (IMF, 2022). The success of carbon taxes, therefore, depends critically on governments' ability to channel recycled revenues productively through subsidies and tax breaks as assumed in the models. This, however, is a difficult and high-risk exercise. A study by the United Nations Department of Economic and Social Affairs highlights several difficulties in revenue recycling, including political economy complexities (for example, lobbying for exemptions that reduce fairness and incentives), volatility of carbon tax fiscal revenues (revenue levels change with emissions) undermining the stability of fiscal expenditures, administrative challenges in identifying vulnerable households (especially in economies with large informal sectors) which could benefit from tax rebates and transfers, and interactions with existing fiscal policies which can cause inefficiencies or double taxation (United Nations, 2021). Furthermore, poor design of recycling mechanisms (for example, untargeted subsidies) can dilute environmental goals and increase costs.

The pace of carbon tax introduction matters for their impact on the economy. For example, it has been estimated that the transition to environmentally sustainable economies could reduce GDP in Asia and the Pacific by 0.6% to 1.7% by 2030 via the increased carbon prices channel, compared to 0.6% to 2.5% globally. However, the models stipulate that the losses are estimated at lower bands in case of a slower transition with efficient carbon tax recycling. In contrast, an abrupt or delayed transition pushes the negative impact higher, including a 1.3 percentage-point rise in the unemployment rate (NGFS, 2025).

Markets tend to be more effective at selecting technologies and allocating resources for decarbonization of the economy, compared to subsidies. Subsidies can lock in inferior technologies, misallocate resources through promotion of suboptimal sectors and solutions, stifle innovation in competing approaches, and, thus, fail to deliver the expected environmental or economic benefits. Investment decisions by private firms are disciplined by the profit motive and the risk of failure – mechanisms that public authorities cannot replicate. An accelerated withdrawal from fossil fuels could exacerbate these problems. A faster transition pace compresses the time available for research, testing, deployment and effective oversight, thereby increasing the likelihood of subsidies backing immature or poorly suited technologies. Moreover, unlike market-based mechanisms, the administrative and oversight costs fall

entirely on the government, contributing to higher fiscal expenditure.

On the other hand, subsidies can be used to sustain priority sectors or technologies that have not yet delivered competitive economic returns and therefore lie outside the scope of business investment but may become competitive upon certain adoption tipping point. Such support may be reinforced by administrative fast-tracking, streamlined permit processes or a reduction in regulatory burdens to lower entry barriers, potentially rendering the subsidized activities profitable (ESCAP, 2025).

2.4.4. Inflation, interest rates and financial stability

Asset stranding and financial stability

Although asset stranding[9] is not a novel phenomenon, the transition to environmentally sustainable economies has notably accelerated its pace and scale. Hundreds of years ago, the vibrant economies of the Silk Road disappeared, giving way to cheaper and more efficient maritime trade. Later, the steam engine phased out older techniques during the nineteenth century industrial revolution. Similarly, transformation towards environmental sustainability brings losses through asset stranding, as old technologies and economic activities fade. The risk of stranding is sensitive to the design and ambition of climate action policies, such as the level, coverage and trajectory of carbon pricing; the stringency of emissions quotas; and the overall speed of decarbonization. Consequently, relevant policy plans – for example, whether to pursue deep reductions in gross emissions or rely on net-emission targets with offsetting or removal – carry significant financial implications.

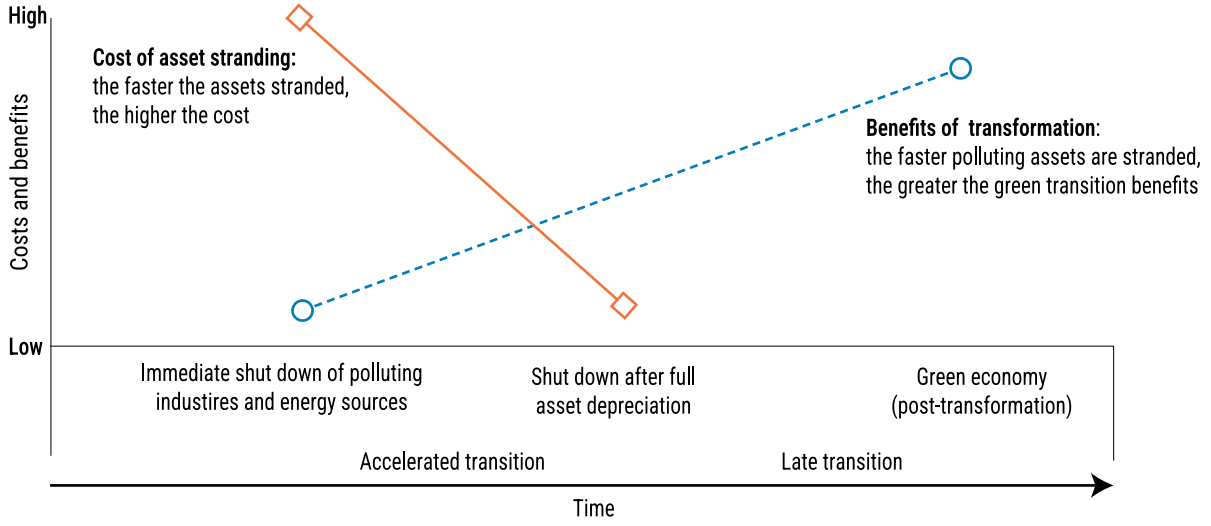
Increasing reliance on fossil fuels amid accelerated transition policies may either elevate financial system risks or lead to climate action delays. By lending to the fossil fuels sector, banks and investors increase their exposure to assets that might soon be stranded due to policy and regulatory changes. Consequently, they face little incentive for supporting transition policies, and thus slow the pace of the transition to environmentally sustainable economies. In South-East Asia, for example, approximately 62% of bank lending goes to large corporations operating in carbon-intensive industries. These shares rise to 76% in Indonesia and 71% in both the Philippines and Viet Nam (CBI, 2022). In a scenario with major and rapid retreat from fossil fuels, these investments would become stranded assets, leading not only to increased financial system risks, but large financial losses in a resource-constrained subregion. Overall, with an average coal plant age in Asia and the Pacific of around 15–20 years (IEA, 2021b),[10] an anticipated lifespan at the time of construction of over 40 years, and continuous expansion of coal-powered capacity as of 2026 (see section 2.1) the coal power plant assets at risk of stranding exceed $1 trillion (ESCAP and others, 2025).

In theory, the transition is proceeding at the right pace if the benefits of stranding fossil-fuel assets outweigh the economic value of the goods and services they would otherwise produce (fig. 2.19**).** However, our understanding of how to calibrate the transition so that the benefits reliably outweigh the costs remains limited. Policies are frequently designed and implemented using relatively crude methods: fixed decarbonization deadlines (for example, net-zero emissions by 2050), promotion of arbitrarily selected environmentally sustainable technologies, or simple inaction – leaving it to market forces to gradually replace a more expensive carbon-based economy with cleaner alternatives. None of these approaches systematically ensures that the overall welfare gains from accelerated stranding will exceed the losses. At the same time, financial stability depends on the pace of the transition particularly through its impact on the sustainability of corporate debt and return on investment – both of which are impacted by asset stranding. Large-scale investments in low carbon development now, with markedly larger climate mitigation and adaptation impacts, or more modest investments over many decades, have different impacts on current asset valuation, especially those linked to the fossil fuels sector thus at risk of stranding.

[9] Stranded assets are investments that become obsolete and lose their economic value well before the end of their anticipated useful life. This often arises from factors such as policy and regulatory changes, shifts in market conditions, environmental constraints and technological disruption.

[10] The average age of existing coal power plants in 2020: South-East Asia – 11 years, India – 13 years, China – 13 years, Japan and the Republic of Korea – 21 years (IEA, 2021b).

Figure 2.19. Theoretical depiction of the costs and benefits of coal asset stranding and the speed of transformation to environmentally sustainable economies



Source: ESCAP.

Continued investment in coal-fired power generation heightens the risk of substantial stranded-asset losses later, thereby posing a barrier to accelerated decarbonization. Investment in coal remains robust across Asia and the Pacific, driving carbon emissions to record levels. Electricity generation in China alone accounts for one-third of global coal consumption (IEA, 2024). New coal-fired capacity additions in China have reached their highest level in a decade (CREA and GEM, 2025), while coal consumption is also rising sharply in India and South-East Asia (IEA, 2025d). In all these cases, the coal assets will most likely either face costly stranding or continue to pollute until the end of their operational life (box 2.4).

New technologies may help reduce the risk of stranded assets. For example, China notes that building coal-fired power plants is needed due to rapid electrification of economy, to stabilize the grid as it integrates increasing amounts of often volatile renewable energy sources, and to meet peak power demand (Reuters, 2025). However, under China's Coal-to-Nuclear strategy, coal power plants could become repowered with small modular nuclear reactors (SMR) powered by uranium, which have similar electricity generation capacity as typical coal power plants (Morelova, 2022; Xu and others, 2022; SCMP, 2025). If this is found to be efficient and scalable, being so far only a theoretical option, other countries could also preserve coal infrastructure and recycle it into environmentally friendly units powered by SMRs. Such solutions, although highly speculative as of 2026, already have implications on current policy choices through the opportunity cost of investment and technologies against potentially avoidable costs of asset stranding.

Inflation and interest rates

An increase in energy costs due to transition policies can lead to higher inflation. Carbon taxes or emission caps increase the production costs for carbon-intensive sectors like energy production or manufacturing, acting as negative supply shocks. Such shocks raise prices, and thus overall inflation. For instance, an increase in carbon taxes from $0 to $100 per ton of CO_2 could increase headline inflation by 1 percentage point over the target for more than 6 years, and core inflation by 0.5 percentage points for 10 years (Del Negro, Giovanni and Dogra, 2025).[11] However, one recent study estimates the inflationary impact of green transition at a lower level of around 0.2 percentage points[12] for headline inflation, pointing to large discrepancies in modelled estimates (Dietrich, Leitenbacher and Müller, 2026). Emerging concepts like "fossilflation" (inflation from fossil fuel dependency), "climateflation" (from climate disasters), and

[11] Increase by 100 and 50 basis points, respectively.

[12] Increase by 20 basis points.

Box 2.4. Where ambitions meet issues such as vested interests, insufficient funding and asset stranding

Indonesia's ambitious plans for an economically and environmentally sustainable transition highlight the difficult trade-offs inherent in accelerated decarbonization. These include the challenge of asset stranding, meeting the investment needs for replacing fossil-fuel capacity and tackling powerful vested interests.

In 2022, the Government of Indonesia and the International Partners Group (IPG) – a coalition of developed countries – launched the Just Energy Transition Partnership for Indonesia. The IPG committed $10 billion in public finance, with the aim of catalysing a further $10 billion from private sources to support the early retirement of coal-fired power plants. At the time, this was the largest energy-transition financing package in the world (JETP Indonesia, 2023).

In 2024, Indonesia announced that all coal-fired and other fossil-fuel power plants would be phased out by 2040 – far earlier than the 2056 target set in 2022 – and that it intended to reach net-zero emissions by 2050 (Cabinet Secretariat of the Republic of Indonesia, 2024).[a] However, the 2022 pledge by ten donor countries and institutions to mobilise $20 billion to retire roughly 13.5% of Indonesia's coal capacity has yet to materialize (Varadhan, 2025).

Simultaneously, the government planned to retire selected coal assets with financing support from the Asian Development Bank under the Energy Transition Mechanism (which covers the cost of asset stranding) before the end of their economic lives in South-East Asia (ADB, 2024). Specifically, a flagship Indonesia–ADB project sought agreement with the private investors from Indonesia, Japan and the Republic of Korea in the Cirebon-1 coal plant for its accelerated closure (ADB, 2024). Opened in 2012, the plant operates under a 30-year power-purchase agreement with PLN, Indonesia's state-owned electricity utility. The original proposal envisaged early retirement in 2035, with compensation to investors provided in part through ADB refinancing of the plant's debt at a lower interest rate. That deal has since been withdrawn.

Compensating private investors for an asset that still has many years of profitable life has proved both economically and politically difficult, especially when weighed against pressing development needs and unmet socioeconomic objectives. The Government of Indonesia has therefore proposed that priority be given to closing older, higher-emitting coal plants while accelerating investment in new renewable generation capacity (Antara News, 2025; Guild, 2025; Reuters, 2025).

These efforts at early retirement are not a story of failure; they are a blueprint of the real-world obstacles confronting ambitious decarbonization ambitions: economic realities, the unavoidable costs of asset stranding, entrenched vested interests and the discipline of a rules-based financial system. The Indonesian experience offers a sobering case study for other major coal-dependent economies – notably China and India – that are also pursuing ambitious decarbonization goals, yet still increase investment in their coal assets.

[a] Similar accelerated coal phase-out targets for the 2040s and 2050s were endorsed by numerous Asian and Pacific economies through the 190-member Global Coal to Clean Power Transition Statement launched at the COP26 climate change conference in 2021 (Government of the United Kingdom, 2021).

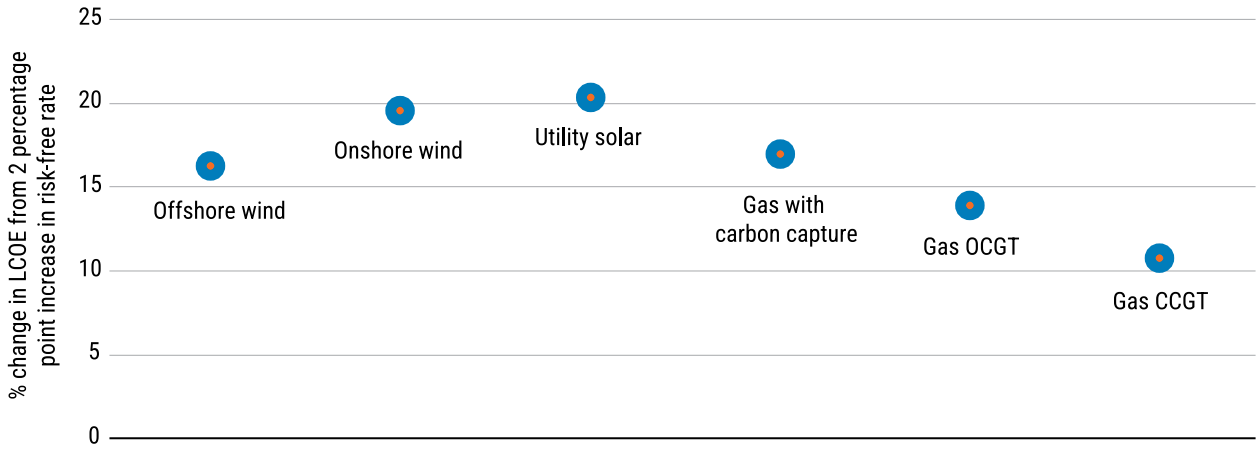
"greenflation" (from climate action) describe these still new, under-researched and poorly understood risks (ESCAP, 2025). Furthermore, uncertainty from uneven policy implementation can further amplify these effects by delaying investments and causing sectoral imbalances.

In the short term, policies for a transition to an environmentally sustainable economy can generate trade-offs between economic output and inflation. Overall, higher costs of fossil fuel use increase inflation and decrease employment, while both are amplified by faster implementation schedules and result in lower overall economic activity (Fornaro, Guerrieri and Reichlin, 2025). For example, introduction of carbon pricing raises the production costs for carbon-intensive firms and increases household energy bills, thereby exerting upward pressure on inflation – effectively acting as a negative supply shock – and decreasing consumption with negative impact on overall economic activity (NGFS, 2024).

The predictability and credibility of transition-related policies significantly influence price dynamics. A gradual, well-communicated carbon-pricing trajectory can generate milder inflationary pressures (Pinheiro de Matos and Gili, 2022). In contrast, a rapid transition, such as high carbon tax rates to meet national environmental targets after years of inaction, would trigger substantial short-term inflation alongside a contraction in GDP. Such an inflationary spike would probably require higher interest rates to manage price stability, thereby further depressing household consumption and economic growth.

Higher interest rates because of higher inflation can substantially decrease the competitiveness of renewable energy compared to fossil fuels, delaying incentives for green transition. A relatively large share of renewable energy investments in solar and wind is not only made upfront, but financed by long-term debt, leading to relatively high leverage (net debt to equity ratio). For example, estimates suggest that a 2 percentage point increase in risk-free interest rates can increase the levelized cost of electricity of renewables by 20%, compared to 11% for combined cycle gas plant (fig. 2.20). Debt-financed nuclear power will face similar headwinds. By contrast, oil and gas companies – after strong deleveraging in recent years – will be much less affected due to the higher equity shares in their investments (Martin and others, 2024), which has increased speculation about the chosen investment direction, split between the historic legacy of fossil fuels and the future of renewable technologies.

Figure 2.20. Capital intensity and sensitivity to interest rate changes of selected energy production technologies



Source: Martin and others, 2024.

Notes: CCGT – combined cycle gas turbine; OCGT – open cycle gas turbine; LCOE – levelized cost of electricity

2.5. A snapshot of policy considerations for environmental and socioeconomic goals

There are no fundamental barriers to pursuing ambitious environmental, economic and social objectives simultaneously. It is, however, difficult to decarbonize quickly without having adverse impacts on economic activities and triggering multifaceted socioeconomic consequences. At present, no economic model can fully integrate all the dimensions of a transition to an environmentally sustainable economy and reliably forecast the long-term outcomes in order to plan the best transition path and timeframe. Choosing the optimal decarbonization pathway will therefore require sound judgement, informed by rigorous economic analysis, responsive to social expectations, and constrained by the pace of technological progress and the availability of resources.

Policymakers must seek transition pathways that entail minimal losses in economic output and employment and avoid inflation, debt and financial stability risks. This consideration is as critical as the need to promote non-fossil energy sources themselves. The current landscape offers few economic incentives for rapid decarbonization, particularly for poorer countries whose governments prioritize the immediate well-being of their populations. Thus, the path towards decarbonization must be gradual, deliberate and consultative.

Labour policies must consider the impact of various decarbonization scenarios aiming to minimize historically expected structural unemployment. Lifelong learning and reskilling must be combined with further private sector investment in education and training.

A gradual transition can avoid risks and lead to better socioeconomic and environmental outcomes. This is because policies designed both to drive the transition and to support adversely affected sectors and communities, may not always be formulated promptly and their implementation may often miss critical windows of opportunity. Moreover, the core assumptions underpinning those policies – for instance, that carbon taxes will be accompanied by efficient and effective revenue recycling – may fall short of expectations.

The withdrawal from fossil fuels should proceed according to a realistic and feasible timeframe, without outpacing a country's ability to replace lost capacity with reliable, stable and low-carbon alternatives. A stable and secure energy supply has long been – and remains – a strategic priority which must be protected even under ambitious energy transition plans. Consequently, the pace, nature and scale of the shift towards environmentally sustainable economies should ultimately be determined by considerations of cost and affordability, system reliability, and national (or subnational) policy priorities. None of these factors should be disregarded, though their relative importance may vary depending on a country's level of economic development, industrial structure, resource endowment and geographical circumstances.

A successful transition to an environmentally sustainable economy would need effective and coherent policy implementation. For instance, carbon taxes exert a drag on economic activity, as they constrain supply, raise energy costs, push up inflation, and can exacerbate inequality and poverty. For this reason, carbon taxes are often proposed alongside mechanisms to recycle the revenues back into the economy to offset the adverse effects. Such an approach, however, would require governments to implement revenue-recycling measures both efficiently and effectively, and to engage in competent central planning when directing subsidies and other support.

Calibrated government intervention will be needed to support market-based mechanisms. Markets left entirely to themselves do not automatically deliver the desired social or environmental outcomes. On the other hand, governments are overall less efficient than free markets at allocating resources. To date, governments have tended to favour heavy-handed direct interventions – subsidies, technology-specific mandates or outright bans – in an effort to compel economies onto a decarbonization trajectory. However, due to the vast number and complexity of decisions needed for a successful transition, there is a need for less intrusive policy alternatives. A better approach would be to rely more extensively on broad, technology-neutral regulations, emissions limits, and carefully designed prohibitions that curb harmful practices without prescribing winners. Such measures constrain negative externalities while still allowing markets to discover and scale up the most cost-effective solutions.

Calibrated government intervention will be needed to support market-based mechanisms. Governments should focus on accelerating technological progress, removing barriers to the rapid deployment of new solutions, and shortening administrative and permit-related timelines for innovative projects.

The economic costs of decarbonization must be distributed mindful of the specific characteristics of different economic sectors. Decarbonization is fundamentally a structural challenge, and its burdens are not evenly distributed. Some economic sectors face a disproportionately heavy load, while others cannot realistically and rapidly decarbonize without targeted support. Without assistance, these vulnerable sectors will either disappear entirely or become the weak links that undermine broader transition efforts. For example, support must be provided for reskilling and for achieving a managed transition in coal-dependent regions. There are no credible reasons to assume that coal phase-out will avoid significant job losses and rising unemployment.

Current transition policies must secure a lasting, market-driven competitive advantage for renewable energy over fossil fuels, achieved through clear socioeconomic benefits rather than perpetual government support. Technological progress and mass adoption of renewable energy solutions are the main drivers of this process for lowering costs and meeting market expectations of the desired features and qualities of renewable energy solutions.

Carbon taxes should be introduced after a careful assessment of their likely impact on economic growth and inflation prospects. Sustained economic growth remains essential for improving people's standards of living, eradicating poverty, and expanding the industrial capacity required for effective decarbonization, especially for developing countries. Similarly, stable inflation ensures that people's purchasing power remains steady.

The recycling of carbon-tax revenues should prioritize indirect, broad-based tax incentives over direct subsidies, thereby minimizing government distortion of market-based mechanisms. Markets tend to be more efficient than governments at identifying and scaling the most cost-effective solutions, including those needed for decarbonization. Direct subsidies, by contrast, frequently lock in suboptimal technologies, stifle innovation among unsubsidized firms and entrench vested interests.

Transition policies must incorporate the reciprocal effects of monetary policy. The transition to environmentally sustainable economie entails inflation, debt sustainability and financial instability risks. However, low inflation, sustainable public debt levels and stable financial markets are essential to enable financing of the needed investment in the economic transition.

Photo: iStock/Galeanu Mihai

Chapter 3

Socioeconomic prosperity amid the transition to an environmentally sustainable economy: policy options

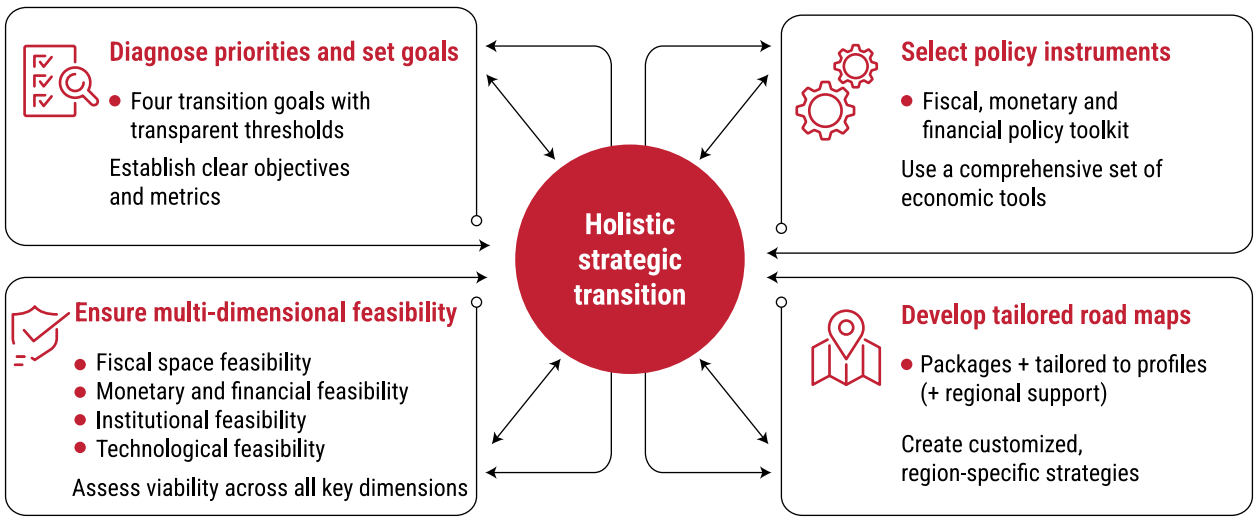
3.1. Introduction

The transition to an environmentally sustainable economy is fundamentally reshaping the macroeconomic landscape of the Asia-Pacific region by altering the relationship between energy systems and economic activity. As a core production input, energy influences economy-wide productivity and competitiveness, while its price volatility directly impacts inflation, fiscal balances and trade positions. Current energy-intensive production processes and high consumption levels increasingly expose the region to competitiveness losses as global markets shift toward clean sources. The imperatives of the 2030 Agenda for Sustainable Development and global climate commitments underscore that fiscal, monetary and financing policies should align with the transition objectives to manage systemic risks and ensure long-term socioeconomic prosperity. However, this shift is unfolding amid slowing economic growth and constrained fiscal space, creating complex trade-offs between economic, social and environmental objectives.

The primary challenge for policymakers is not a lack of options, but rather how to prioritize them and navigate the trade-offs. Fiscal and financial frameworks will need to adapt to the macroeconomic risks arising from the transition. These include volatility in government revenues and foreign-exchange for fossil-fuel-reliant economies, as well as the financial risks of stranded assets in carbon-intensive sectors. At the same time, governments will need to ensure that policies protect vulnerable populations and support a just transition for affected livelihoods. For many economies, the critical task is identifying policies that are not only theoretically sound but practically feasible within national contexts and constraints. Importantly, while countries may face similar transition objectives, their ability to sequence and implement policy instruments varies along with their fiscal, institutional and technological constraints. Strategy differentiation therefore reflects binding feasibility conditions rather than differences in long-term transition objectives.

This chapter addresses the "feasibility gap" by providing a structured framework to prioritize policies based on country-specific conditions. Building on the analysis in chapter 2, which highlights the macroeconomic risks and trade-offs of the transition to an environmentally sustainable economy, it offers a diagnostic method to prioritize the most suitable existing instruments rather than proposing a generic "one-size-fits-all" package. Transition goals diagnose structural pressures within national energy systems using transparent screening thresholds, while feasibility analysis determines sequencing and instrument choice under binding constraints. These transition goals are not mutually exclusive. Many economies face pressures across more than one dimension, and the diagnostic identifies priority structural challenges rather than confining countries to a single objective. Strategic differentiation therefore reflects feasibility conditions rather than differences in long-term ambition. As illustrated in figure 3.1, the chapter proposes differentiated strategies

Figure 3.1. Transition strategy integration framework: from diagnostics to national road maps



Source: ESCAP.

that connect policy goals, macroeconomic impacts and feasibility conditions into actionable guidance for Asian and Pacific economies.

The discussion is organized as follows: Section 3.2 defines specific transition goals for economies in the region. Section 3.3 evaluates priority fiscal, monetary and financial policies for supporting these goals. Section 3.4 introduces a feasibility framework to assess implementation capacity. Section 3.5 synthesizes these findings into strategic policy road maps. Finally, Section 3.6 concludes with key insights on ways to promote prosperity, laying the groundwork for chapter 4, which focuses on how to realize these road maps in practice. While the transition is economy-wide, this chapter focuses on the energy sector, encompassing both energy generation and industrial consumption, as the macrocritical core for Asian and Pacific economies, given its systemic impact on fiscal balances, trade and competitiveness.

3.2. Policy goals: diagnosing national energy transition priorities

To safeguard macroeconomic stability, support sustained growth and enable structural transition, policy frameworks must pivot from broad generalizations to data-driven strategies closely attuned to national contexts. The proposed diagnostic framework prioritizes transparency and inclusivity by using single, high-level indicators rather than complex composite indices, allowing policymakers to identify binding constraints immediately without decoding complex weighting mechanisms. Furthermore, relying on universally reported data maximizes coverage, ensuring that small island developing states (SIDS) and least developed countries (LDCs) – often excluded from data-heavy global indices – are fully integrated into regional analyses. Thresholds, calibrated using a mix of regional medians and policy targets, anchor prioritization in four core structural differentiators that map diverse energy challenges into actionable policy goals, as detailed in chapter 3 technical appendix, section 3.1. By establishing a transparent foundation, policymakers can redefine fiscal and financial instruments to manage emerging risks and translate climate ambitions into pathways aligned with their specific implementation capacity.

The four analytical objectives are defined using distinct structural indicators that capture different dimensions of the energy system: total energy supply composition (goal 1), electricity generation mix (goal 2), energy use per unit of output (goal 3) and household access (goal 4). Although they are related in practice, these indicators measure separate constraints and may therefore be triggered independently or simultaneously within the same economy.

Policy goal 1: reduce fossil fuel dependence (indicator: fossil share of total energy supply > 75%)

Reducing structural fossil fuel dependence is a prerequisite for limiting macroeconomic exposure to international energy price volatility and strengthening fiscal resilience. This framework flags economies as structurally "locked into" hydrocarbons when fossil fuels account for 75% or more of the energy mix. The cut-off is used as a pragmatic screening threshold rather than a universally prescribed value. It is consistent with research identifying economies above this range as structurally fossil-reliant (Rosas-Casals, Marzo and Salas-Prat, 2014) and is broadly aligned with the average for the Asia-Pacific region. The threshold does not imply that economies below 75% have resolved their fossil dependence, but rather that the macroeconomic exposure is less structurally dominant relative to regional peers. It therefore captures economies where hydrocarbon reliance is likely to be structurally binding for the transition agenda. The results are cross-checked against global decarbonization pathways to ensure that the regional diagnostic priorities remain directionally consistent with the 1.5°C goals of the Paris Agreement.

Regarding macroeconomic stability, high fossil fuel dependence increases external vulnerabilities; for net importers, fuel costs weaken trade balances and generate exchange-rate pressures, while for net exporters, it amplifies exposure to terms-of-trade volatility and fiscal revenue risks (IEA, 2023). **From a social welfare perspective**, fossil fuel dependence creates fiscal risk through price-stabilization costs, as international price spikes can translate into significant expenditure pressures and crowd out essential social spending (Coady and others, 2013).

Furthermore, maintaining energy-intensive and trade-exposed production processes exposes economies to competitiveness risks as major markets introduce carbon border adjustment measures, increasing compliance and adjustment costs along decarbonizing value chains.

Figure 3.2 **highlights that structural fossil-fuel dependence remains widespread across developing economies in Asia and the Pacific.** Most such economies remain above the 75% screening threshold. The dominant risk channel, however, differs by trade position of countries: for net exporters such as Azerbaijan and Kazakhstan, remaining above the threshold sustains fiscal vulnerability, as national budgets depend on volatile fossil-fuel export revenues that are increasingly exposed to decarbonization efforts, globally and nationally. For net importers, high dependence entrenches external and price stability risks, as import-bill shocks can drain foreign exchange reserves and spill over into domestic inflation. Moving below the 75% threshold is therefore not only important for moving towards an environmentally sustainable economy, but also for strengthening long-term fiscal resilience and external stability.

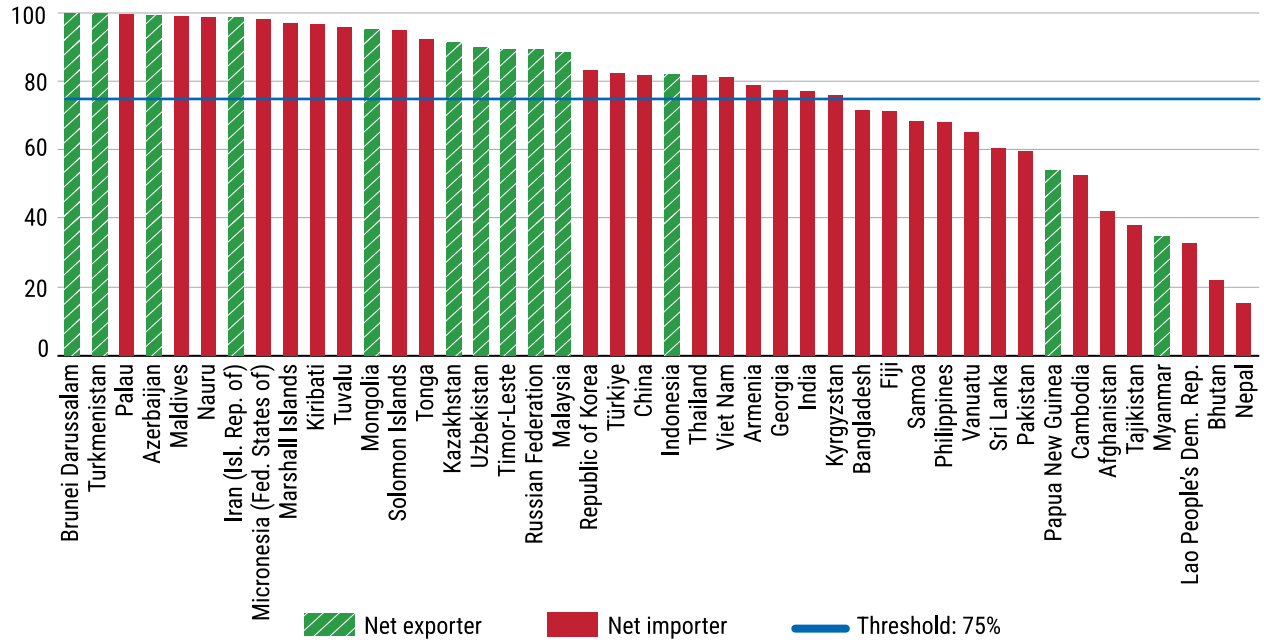
Policy goal 2: increase clean and renewable energy

(indicator: renewables share in electricity generation < 30%)

Scaling up clean and renewable energy acts as a macroeconomic stabilizer by reducing exposure to imported fossil-fuel price volatility and associated inflationary pressures.

This framework uses 30% as a pragmatic "take-off" milestone for the share of renewables in electricity generation, anchored in recent benchmark levels (around 30% globally in 2023) and regional policy ambition, including the ASEAN Plan of Action for Energy Cooperation (ASEAN Centre for Energy, 2025a). This indicator relates specifically to the electricity generation mix and does not duplicate the fossil share indicator in goal 1, which refers to total energy supply across all sectors including transport and industry. The milestone helps distinguish economies where renewables deployment is still at an early stage from those where the priority is to strengthen enabling conditions. These include grid integration, permitting and financing to support faster scaling, while keeping the regional diagnostics broadly aligned with 1.5°C-consistent pathways.

Figure 3.2. Fossil-fuel share of the total energy supply (three-year average of the most recent available data), selected Asian and Pacific developing economies



Source: ESCAP calculations based on IEA World Energy Balances (2025 edition) (IEA, 2025b) and the United Nations Statistics Division's Energy Statistics Database United Nations (2025).

Note: Quantitative indicators are calculated using a three-year average of the most recent available data to ensure robustness. The 75% screening threshold is derived from the structural definition of carbon lock-in. Red bars indicate net energy importers, while green shaped bars indicate net energy exporters.

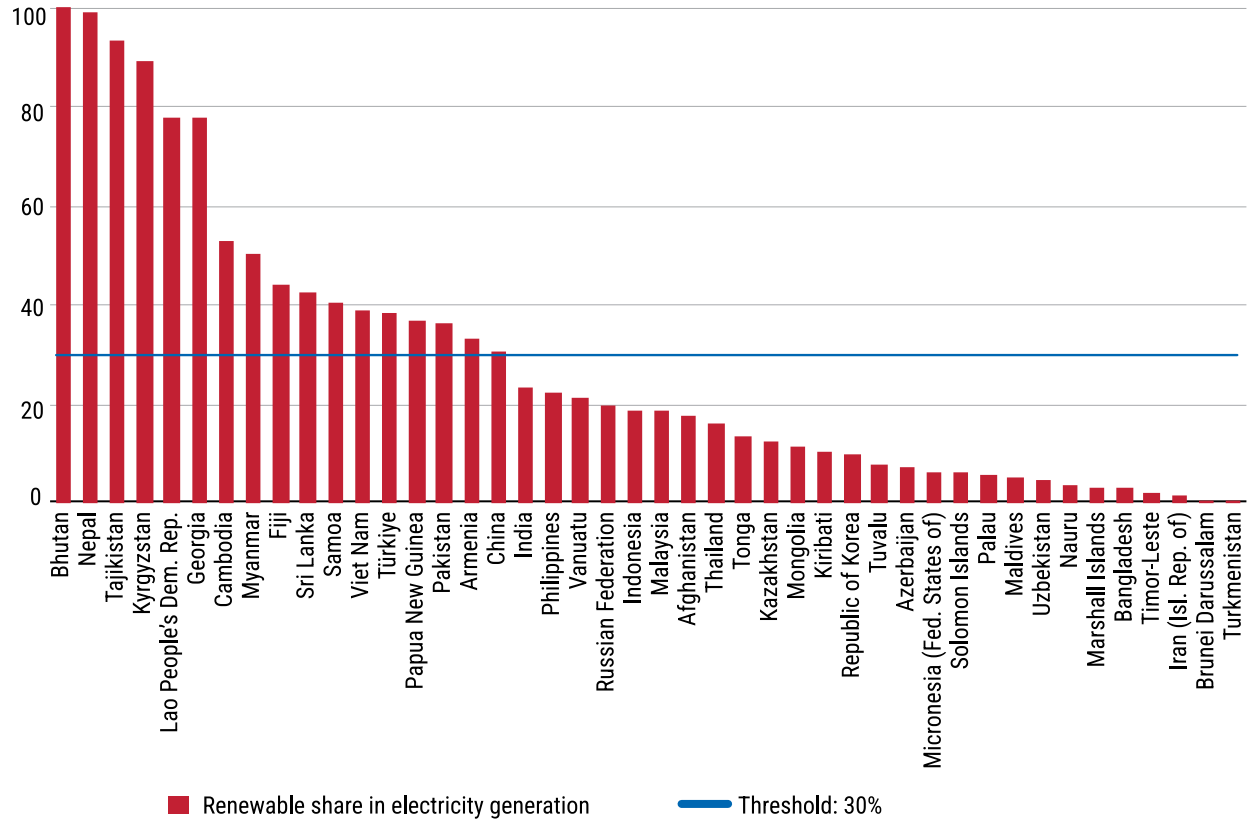
In terms of macroeconomic stability, falling below this milestone signals a reliance on legacy power systems that expose economies to inflationary "cost-push" shocks. Reaching the benchmark is thus essential for maintaining trade competitiveness as global supply chains increasingly mandate low-carbon inputs (IEA, 2024). Consistent with the analysis in chapter 2, the policy implication is not that faster deployment is always optimal; both rapid and delayed transitions can impose significant costs through different channels. **Regarding social well-being**, rapid scaling can create short-run pressures where grids, permitting, financing and social protection systems are not sufficiently prepared, while delayed action prolongs exposure to fuel-price shocks and increases adjustment risks, including stranded assets, labour displacement and grid-integration constraints.

As shown in figure 3.3, renewable penetration varies widely, with economies like Bhutan and Nepal already exceeding the 30% milestone, while others remain reliant on legacy, fossil-based power systems.

Policy goal 3: increase energy efficiency (indicator: energy intensity > 5 MJ/PPP$)

Improving energy efficiency strengthens macroeconomic resilience by reducing the energy needed per unit of output. In this framework, efficiency is proxied by primary energy intensity (SDG indicator 7.3.1), measured in megajoules per purchasing power parity (PPP)-adjusted dollar of GDP (IEA, IRENA, UNSD, World Bank and WHO, 2025). For regional screening, a 5 MJ/PPP$ benchmark identifies economies with relatively high energy use per unit of output. This threshold is near the Asia-Pacific region's sample average and is consistent with applied assessments

Figure 3.3. Share of electricity generation from renewable sources (three-year average of the most recent available data), selected Asian and Pacific developing economies



Source: ESCAP calculations based on the IEA World Energy Balances (2025 edition) (IEA, 2025b) and the World Bank World Development Indicators database (n.d.).

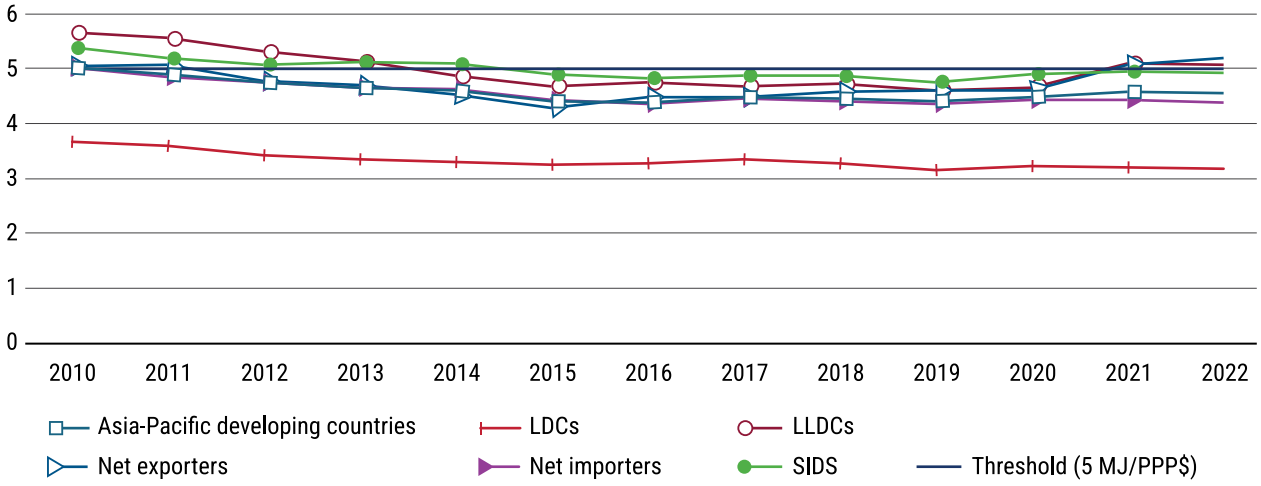
Note: Quantitative indicators are calculated using a three-year average of the most recent available data to ensure robustness. The 30% threshold serves as a strategic "take-off" milestone calibrated to align regional progress with global transition standards.

(for example, Drobot and others, 2022). Countries above it are more exposed to competitiveness pressures from energy-intensive production, making efficiency reforms a near-term transition priority. Lower intensity supports macroeconomic stability by reducing fuel import bills for net importers and easing domestic supply pressures for net exporters, while supporting investment and competitiveness as economies modernize. Often described as the "first fuel" because reducing energy demand can deliver supply-equivalent benefits at lower cost, efficiency permanently cuts household bills and company costs, protecting vulnerable real incomes and improving affordability.

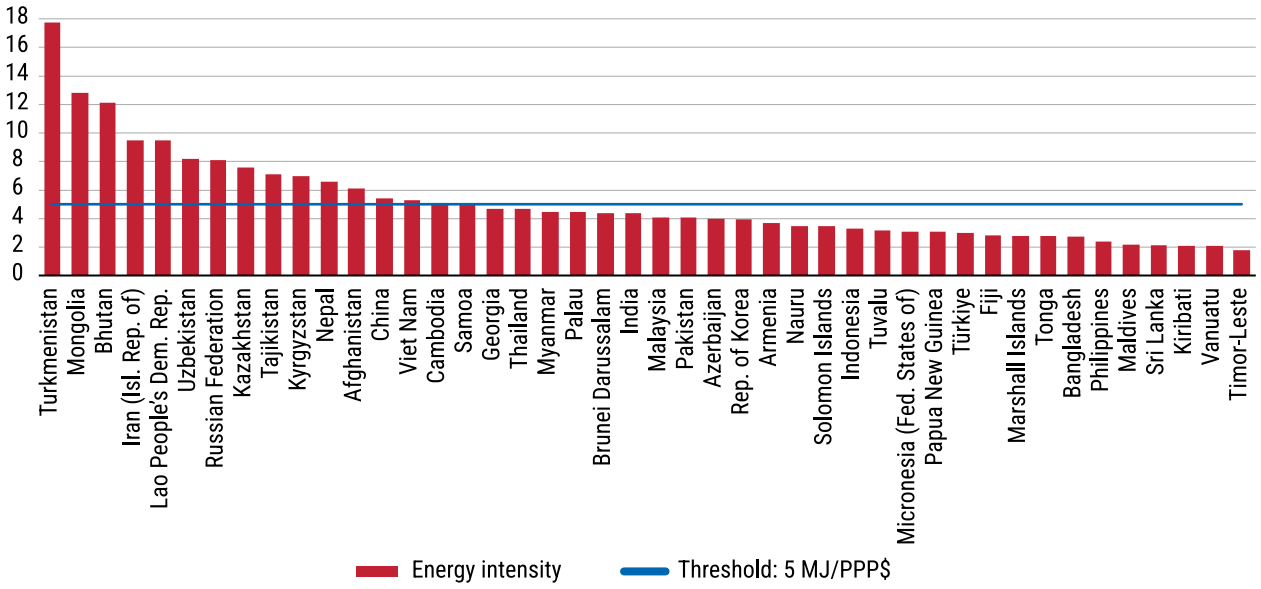
Figure 3.4 indicates that, despite steady progress, energy efficiency gaps remain significant in several groups of Asian and Pacific developing economies. Panel A of figure 3.4 shows that energy intensity in these economies has declined over the past decade but remains above the 5 MJ/PPP$ screening threshold in several country groupings, with landlocked least developed countries

Figure 3.4. Energy intensity trends in Asia and the Pacific

(a) Energy intensity trends in selected Asian and Pacific economies, by development status, 2010–2022



(b) Current energy intensity in selected Asian and Pacific developing economies, 2024–2025



Source: ESCAP calculations based on *Tracking SDG 7: The Energy Progress Report*, jointly produced by the IEA, IRENA, UNSD, World Bank and WHO (2025).

Note: Quantitative indicators are calculated using a three-year average of the most recent available data to ensure robustness. The threshold of 5 MJ/PPP$ identifies economies where energy use per unit of output is relatively high, signalling that efficiency-oriented reforms are a transition priority.

(LLDCs) and small island developing states (SIDS) exhibiting persistently higher intensity than the regional average. Panel B complements this time series by ranking economy-level values against the threshold to identify where efficiency-focused reforms are likely to be a transition priority.

Policy goal 4: increase energy access

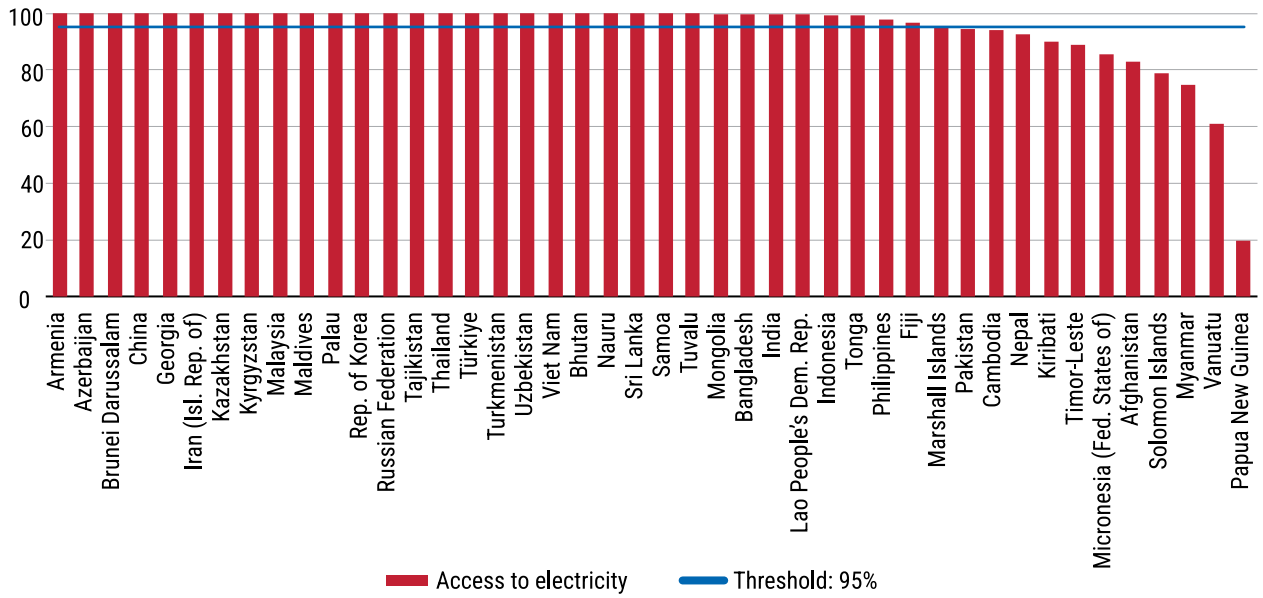
(indicator: access < 95% of all households)

Ensuring universal access to electricity is the foundational requirement for sustained, resilient and inclusive economic development. This framework applies a 95% threshold to distinguish between markets with universal access and those facing a structural "last-mile" challenge (World Bank, 2022), where geography or poverty remain primary barriers to universal access.

Regarding macroeconomic stability, closing the access gap integrates rural economies into the formal sector, enabling enterprises to mechanize production and access digital markets. Universal access further strengthens macroeconomic stability by reducing national reliance on expensive, volatile imported fuels for local power generation, thereby improving the trade balance. In terms of social well-being, universal access is a prerequisite for a just transition. Without it, the benefits of a modern energy system remain unevenly distributed, potentially exacerbating domestic inequality during the shift towards cleaner sources. Reliable power is fundamental for modern healthcare, education and clean water, directly reducing multidimensional poverty and improving health outcomes. In these contexts, the transition allows economies to "leapfrog" legacy fossil-fuel infrastructure by deploying modular, renewable-based mini-grids that are often more cost-effective for reaching underserved populations. Addressing structural barriers to inclusive participation ensures that the energy transition drives broad-based economic resilience.

Electrification progress in the region has been strong but remains uneven, as shown in figure 3.5, with most economies achieving universal access while a few countries, such as Papua New Guinea, face geographically concentrated "last mile" access gaps in remote or sparsely populated areas.

Figure 3.5. Access to electricity in selected Asian and Pacific developing economies, percentage of households



Source: ESCAP based on the World Bank and ESMAP (2025) and IEA, IRENA, UNSD, World Bank and WHO (2025).

Note: Quantitative indicators are calculated using a three-year average of the most recent available data to ensure robustness. In accordance with SDG monitoring practices, once universal access (>99%) is achieved and verified, the value is held constant at 100%.

Table 3.1 **translates these diagnostic thresholds into transition profiles for developing Asian and Pacific economies, anchoring policy priorities highlighted in section 3.3 in national constraints rather than broad regional trends.** Challenges range from single priorities (for example, closing access gaps) to multidimensional transitions that require simultaneous decarbonization and modernization. This framework is a high-level strategic guide, not a prescriptive solution. Because it relies on single national indicators, it can mask subnational variations (for example, urban-rural divides) and overlook qualitative factors such as grid reliability and voltage stability. The groupings should therefore be treated as starting points and complemented with more granular, country-specific assessments. The diagnostic mapping in table 3.1 does not predetermine which strategic road map a country will follow. Strategy selection in section 3.5 depends jointly on policy goals (this section) and feasibility conditions (section 3.4).

Table 3.1. Mapping of national policy goals for the transition to environmentally sustainable economies in the Asia-Pacific region

Country	Goal 1: Reduce dependence on fossil fuels	Goal 2: Increase clean and renewable energy	Goal 3: Increase energy efficiency	Goal 4: Increase energy access
Afghanistan		✓		✓
Armenia	✓			
Azerbaijan	✓	✓		
Bangladesh		✓		
Bhutan			✓	
Brunei Darussalam	✓	✓		
Cambodia			✓	
China	✓		✓	
Democratic People's Republic of Korea			✓	
Fiji				✓
Georgia	✓			
India	✓	✓		
Indonesia	✓	✓		
Iran (Islamic Republic of)	✓	✓	✓	
Kazakhstan	✓	✓		
Kiribati	✓	✓		✓
Kyrgyzstan	✓			
Lao People's Democratic Republic		✓		
Malaysia	✓	✓		
Maldives	✓	✓		
Marshall Islands	✓	✓	✓	
Micronesia (Federated States of)	✓		✓	✓

Table 3.1. continued.

Country	Goal 1: Reduce dependence on fossil fuels	Goal 2: Increase clean and renewable energy	Goal 3: Increase energy efficiency	Goal 4: Increase energy access
Mongolia	✓	✓	✓	
Myanmar				✓
Nauru	✓	✓	✓	
Nepal				✓
Pakistan				✓
Palau	✓	✓	✓	
Papua New Guinea			✓	✓
Philippines		✓		
Republic of Korea	✓	✓		
Russian Federation	✓	✓	✓	
Samoa			✓	
Solomon Islands	✓	✓		✓
Sri Lanka			✓	
Tajikistan			✓	
Thailand	✓	✓		
Timor-Leste	✓	✓		
Tonga	✓	✓		
Türkiye	✓			
Turkmenistan	✓	✓	✓	
Tuvalu	✓	✓		
Uzbekistan	✓	✓	✓	
Vanuatu		✓		✓
Viet Nam	✓			

Source: ESCAP calculations based on the latest available data from the International Energy Agency, the World Bank World Development Indicators and the Asian Development Bank.

Notes:

(1) A tick (✓) indicates that the diagnostic threshold for a specific goal has been met, signalling a priority need for policy action.

(2) Thresholds include a fossil fuel share exceeding 75% (goal 1), a renewables share below 30% (goal 2), energy intensity above 5 MJ/2021 PPP$ (goal 3), and electricity access below 95% (goal 4).

(3) To ensure the robustness of the diagnostic signals and mitigate the impact of year-on-year volatility, all quantitative indicators in this diagnostic assessment are calculated using a three-year average of the most recent available data. Data sufficiency rules were applied strictly: if data were available for only two of the three most recent years, a two-year average was used. If data were available for only one year (or missing entirely), the country was excluded from the analysis for that specific indicator to prevent outliers from distorting the signal. Diagnostic thresholds are calibrated to the regional median rather than absolute global standards, ensuring that diagnostic signals reflect the specific development context of the Asia-Pacific region.

(4) Country cases in section 3.3 illustrate policy instruments and are not intended to imply that each instrument corresponds to a top national priority in table 3.1.

(5) Sri Lanka, Fiji and the Lao People's Democratic Republic do not trigger the main "priority action" thresholds (their fossil-fuel shares are relatively low and renewable/efficiency metrics are comparatively strong). Their focus is therefore advanced resilience and integration, with one tailored goal each: Sri Lanka – goal 3 (energy efficiency): improve energy intensity to support macro-fiscal stability by reducing fuel-import costs and raising productivity. Fiji – goal 4 (energy access): shift from expanding connections to climate-resilient last-mile service for remote islands (for example, cyclone-resilient solar-hybrid systems). Lao PDR – goal 2 (scale renewables): diversify beyond hydro into solar/wind to reduce dry-season supply gaps and reliance on fossil imports, strengthening energy security.

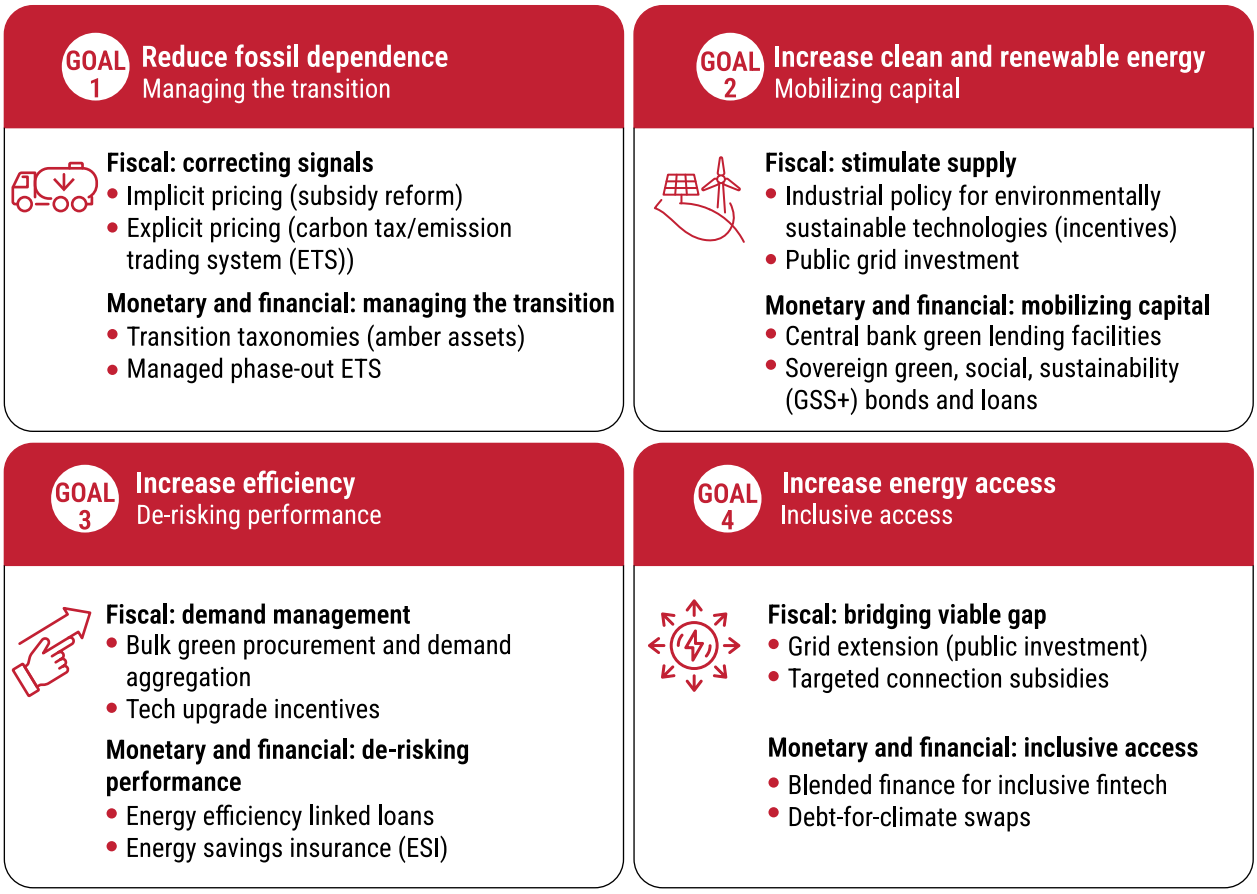
3.3. Priority policies for economic stability, economic growth and well-being

From an economic perspective, achieving the energy transition goals outlined above requires a targeted set of fiscal, monetary and financial instruments. This section assesses the key policies (fig. 3.6) based on their ability to advance transition goals while also supporting the three core dimensions of socioeconomic prosperity: macroeconomic stability, economic growth and social well-being. The instruments combine market-based mechanisms with targeted state-led approaches. Where fiscal tools involve direct intervention, such as industrial policy for environmentally sustainable technologies, they are used to address market failures and coordination gaps, not to replace private capital. This helps limit long-run distortions through performance-based, time-bound and market-compatible design, consistent with the balanced approach to state intervention highlighted in chapter 2.

3.3.1. Priority policies for reducing fossil fuel dependence (goal 1)

For economies where fossil fuels account for over 75% of the total energy supply, the primary objective is to correct market signals that incentivize carbon-intensive consumption and production. This requires a comprehensive approach that combines fiscal instruments to rectify price distortions (by removing distortions and pricing externalities) with financial mechanisms to manage the orderly exit of legacy assets. These policies are designed to reduce structural dependencies while safeguarding the fiscal and financial stability of the economy during the shift. For both subsidy reform and carbon pricing, credibility depends on transparent revenue recycling, using savings to protect low-income households and to fund adjustment support for affected workers and fossil-dependent communities.

Figure 3.6. Priority policies for achieving the four energy transition goals



Source: ESCAP.

A. Fiscal policies: correcting price signals

Policy 1: Fossil fuel subsidy reform

Phasing out subsidies is a prerequisite for realigning price signals and strengthening the fiscal balance sheet. In Asia and the Pacific, the scale of support remains substantial: explicit subsidies continue to impose a direct fiscal burden, while implicit subsidies, reflecting the underpricing of environmental externalities, can exceed a quarter of GDP in some economies. As shown in table 3.2, Indonesia's total subsidy profile is now dominated by implicit costs (7.4 % of GDP), even as it maintains a relatively low explicit fiscal outlay of 1.1% following successful historical reforms. Box 3.1 illustrates how Indonesia achieved this initial reduction in explicit spending through its "Big Bang" reform strategy.

In Asia and the Pacific, reform durability depends on implementation choices. Table 3.2 highlights selected strategies that combine gradual price adjustment with targeted compensation mechanisms to manage inflationary pressure and distributional impacts. Beyond technical design, chapter 4 emphasizes that subsidy reform is politically contested; the actors-objectives-context (AOC) framework provides a lens to map stakeholder incentives, anticipate resistance and build coalitions for a just transition.

Table 3.2. Current fossil fuel subsidies in selected Asian and Pacific economies

Subregion	Country	Explicit subsidy (% of GDP)	Implicit subsidy (% of GDP)	Total subsidy (% of GDP)
North and Central Asia	Uzbekistan	10.20	22.40	32.60
	Kazakhstan	3.80	15.60	19.40
	Turkmenistan	11.50	14.20	25.70
South and South-West Asia	India	1.80	11.20	13.00
	Pakistan	2.60	9.40	12.00
	Bangladesh	2.20	8.10	10.30
South-East Asia	Indonesia	1.10	7.40	8.50
	Malaysia	2.50	6.20	8.70
	Viet Nam	1.40	10.80	12.20
	Thailand	1.20	7.90	9.10
East and North-East Asia	China	0.40	14.10	14.50
	Mongolia	1.60	28.40	30.00

Source: ESCAP based on IMF Fossil Fuel Subsidies Data (Black and others, 2025).

Note: Explicit subsidies represent direct fiscal outlays for price support, while implicit subsidies reflect the underpricing of environmental externalities, including local air pollution and climate damage.

Box 3.1. Indonesia's "Big Bang" reform (2014–2015)

Amid a weakening current account, Indonesia used the fall in global oil prices to abolish gasoline subsidies in 2014–2015. The reform delivered large fiscal savings, cutting explicit energy subsidies from 3.2% of GDP (2014) to 1.0% (2015), strengthening the sovereign balance sheet and resilience to external shocks (World Bank, 2016). To support economic growth, the government reinvested part of the savings into productivity-enhancing spending, raising central government capital expenditure from 1.3% to 2.5% of GDP between 2014 and 2015 to address infrastructure gaps (Jong, 2024). To safeguard people's well-being, the reform expanded social protection: funds were channelled to the Indonesia Health Card and Smart Card programmes, reaching around 88 million vulnerable people (ADB, 2015). Estimates suggest that poverty could have increased by about 0.26 percentage points without compensation, but targeted transfers largely offset the impact (Dartanto, 2013).

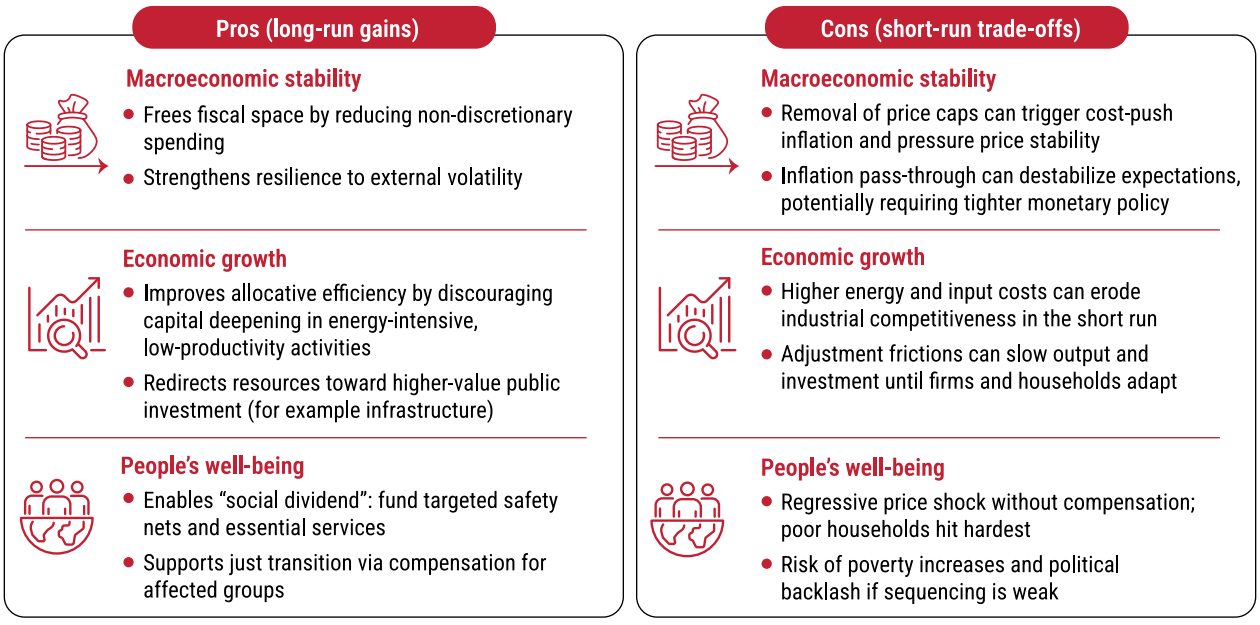
Subsidy reform creates fiscal gains but can trigger public resistance. It works best when price changes are gradual, savings are transparently recycled, and targeted compensation protects vulnerable households and firms (fig. 3.7). In practice, recycling should prioritize targeted cash transfers or energy affordability support for low-income households, alongside reskilling and localized support for workers and communities affected by higher energy prices and sectoral adjustment.

Policy 2: Carbon pricing mechanisms

Explicit pricing instruments, such as emissions trading systems (ETS) or carbon taxes, provide a robust market signal necessary to internalize the social cost of carbon. Drawing on chapter 2's review of the fiscal and efficiency considerations of carbon pricing, the focus here is on instrument choice under feasibility constraints. By putting a price on carbon emissions, these tools can incentivize economy-wide innovation and technological adoption required for the transition to an environmentally sustainable economy. Carbon pricing can also help pre-empt foreign levies like the European Union's Carbon Border Adjustment Mechanism (CBAM) by retaining revenue domestically and dampening potential exchange rate fluctuations by signalling a credible de-risking path to global bond markets.

Uptake in Asia and the Pacific remains uneven and concentrated in a small set of economies. As of 2024–2025, operational "direct" carbon pricing in the region is primarily implemented through ETSs (for example, China, Indonesia, Kazakhstan, New Zealand and the Republic of Korea) and a smaller number of explicit carbon taxes (notably Japan and Singapore). Table 3.3 summarizes the main operational instruments and their current scale of implementation in the region, showing that coverage ranges from sector-specific systems (Indonesia's power-sector scheme) to economy-wide or near economy-wide systems (for example, the Republic of Korea ETS).

Figure 3.7. Fossil fuel subsidy reform: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

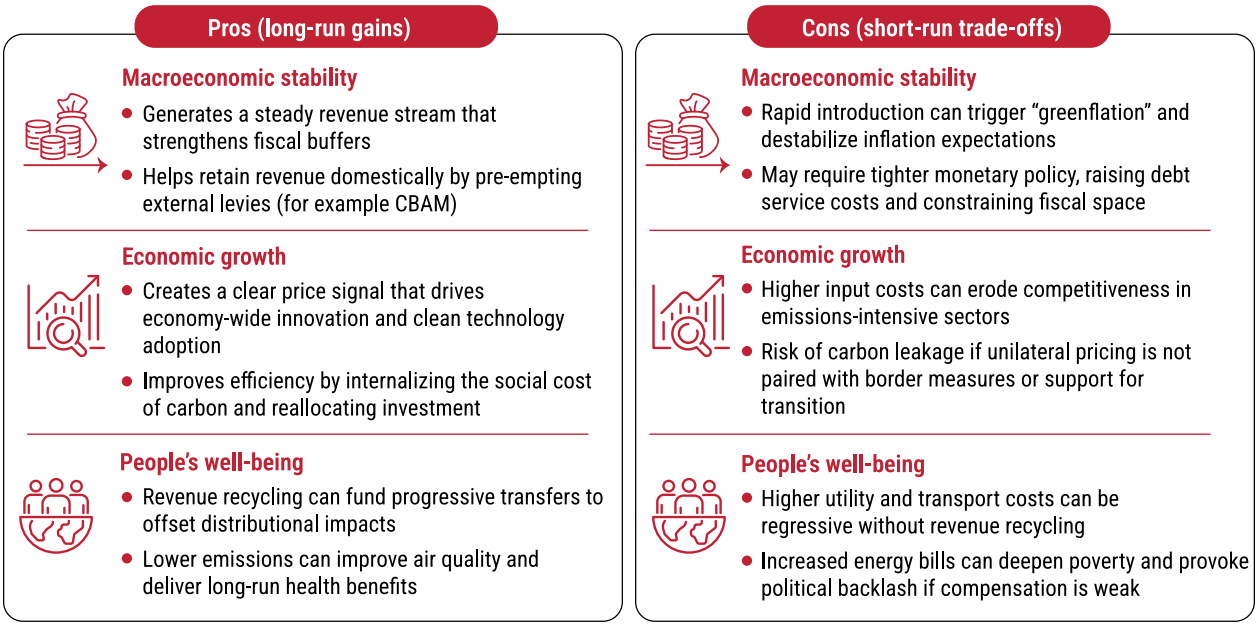
Table 3.3. Operational carbon pricing in the Asia-Pacific region

Economy	Instrument	Status	Coverage
Republic of Korea	National ETS	Launched 2015	Broadest coverage in Asia; the Republic of Korea ETS covered 79% of national GHG emissions in 2022, covering power, industry, buildings, waste, transport, domestic aviation and maritime.
China	National ETS	Launched 2021	The world's largest ETS. Initially power-sector only, China officially expanded the national ETS to cement, steel and aluminium, with the first compliance deadline at end-2025 (covering 2024 emissions); the expansion adds approximately 1,500 covered companies and approximately 3 $GtCO_2e$ (gigatons of CO_2 equivalent) of covered emissions.
Singapore	Carbon tax	Launched 2019	Covers approximately 80% of national emissions; the carbon tax was raised to S$25/$tCO_2e$ (approximately $18) from 2024 and is scheduled to rise to S$45/$tCO_2e$ (approximately $33) in 2026–2027 with a view to further increase to S$50–80 (approximately $37-59) by 2030.
Indonesia	Power-sector ETS	Launched 2023	Power-sector ETS launched with an initial phase covering coal-fired power plants (with plans to broaden power-sector coverage in subsequent phases). The carbon tax is legislated but has been repeatedly postponed, and the timeframe for implementation remains uncertain.
Japan	Carbon tax and green transformation emissions trading scheme (GX-ETS)	Tax (2012)/ ETS (2023)	Carbon tax (in place since 2012) alongside the GX-ETS, which started as a voluntary scheme in FY2023 (April 2023-March 2024). The GX-ETS is expected to transition to mandatory compliance from FY2026 (April 2026-March 2027), after its first compliance deadline.
New Zealand	National ETS	Launched 2008	Highly comprehensive sectoral coverage (including forestry, stationary energy, industrial processes, liquid fossil fuels, waste and synthetic gases); covered 44% of emissions in 2022 (verified ETS emissions 34.2 $MtCO_2e$).
Kazakhstan	National ETS	Launched 2013	Covers around half of Kazakhstan's CO_2 emissions (2022), across power, centralized heating, extractive industries and manufacturing (212 installations).

Source: ESCAP based on the International Carbon Action Partnership Status Report (2025) and the World Bank (2025e).
Note: Coverage reflects the percentage of national greenhouse gas emissions regulated by the respective instrument.

Figure 3.8. highlights the efficiency benefits of carbon pricing alongside the distributional and competitiveness risks. A carbon tax provides price certainty but uncertain emissions outcomes, whereas an emissions trading system provides emissions certainty but allows price variability; hybrid approaches combine these features through design instruments such as price corridors. Carbon pricing is most suitable where administrations can predictably phase prices, recycle revenues transparently and manage leakage. To keep the just-transition compact explicit, a share of carbon-pricing revenues should be recycled to support low-income households as well as affected workers and communities. Without these conditions, public resistance rises and investment signals weaken. Box 3.2 elaborates how these design choices can work in practice.

Figure 3.8. Carbon pricing mechanism: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Box 3.2. China's national emissions trading system (ETS) (2021–present)

Covering the power sector and regulating approximately 5.1 billion tons of CO_2 annually (ICAP, 2025), the ETS in China was designed to manage the trade-off between putting a price on carbon and maintaining energy security. To ensure macroeconomic stability, China prioritized price certainty over high valuations in its initial phase, employing price stability mechanisms, such as daily trading limits and allowance adjustment, to maintain a steady price averaging approximately ¥96 per ton in 2024 (approximately $13) (ICAP, 2025). This prevented sudden cost shocks for the power sector, avoiding a spike in electricity prices. Despite the moderate price, the system effectively supported economic activity through efficiency. In its first compliance cycle, the carbon intensity of regulated power plants fell by 2.5–3.1% (Yan and others, 2025), indicating a successful decoupling of industrial output from emissions. Furthermore, some modelling-based results suggest that power-sector emission reductions consistent with the ETS trajectory could lower PM2.5 exposure and related premature deaths by around 10–12% in heavily polluted regions (Kiesewetter, Zhang and Liu, 2024).

B. Monetary and financial policies: managing the exit

Policy 3: Transition finance taxonomies

Clearly defining "transition" activities (through standardized taxonomies) stabilizes the financial system by linking current industrial practices to long-term decarbonization objectives.

Transition finance taxonomies are particularly relevant in the Asia-Pacific region, where several economies are leading in the development of "traffic light" systems by categorizing activities as green (sustainable), amber (transitioning) or red (unaligned). Table 3.4 summarizes the status of major taxonomy initiatives in the region. By clarifying the eligibility criteria for transition-aligned investments, such as industrial retrofitting and managed phase-down pathways, taxonomies can support a more orderly financing environment for hard-to-abate sectors while strengthening market transparency.

As figure 3.9 indicates, well-designed taxonomies can steer capital and strengthen credibility, but poor design can misallocate finance. Taxonomies are most suitable when thresholds are

Table 3.4. Status of sustainable and transition finance taxonomies in Asia and the Pacific

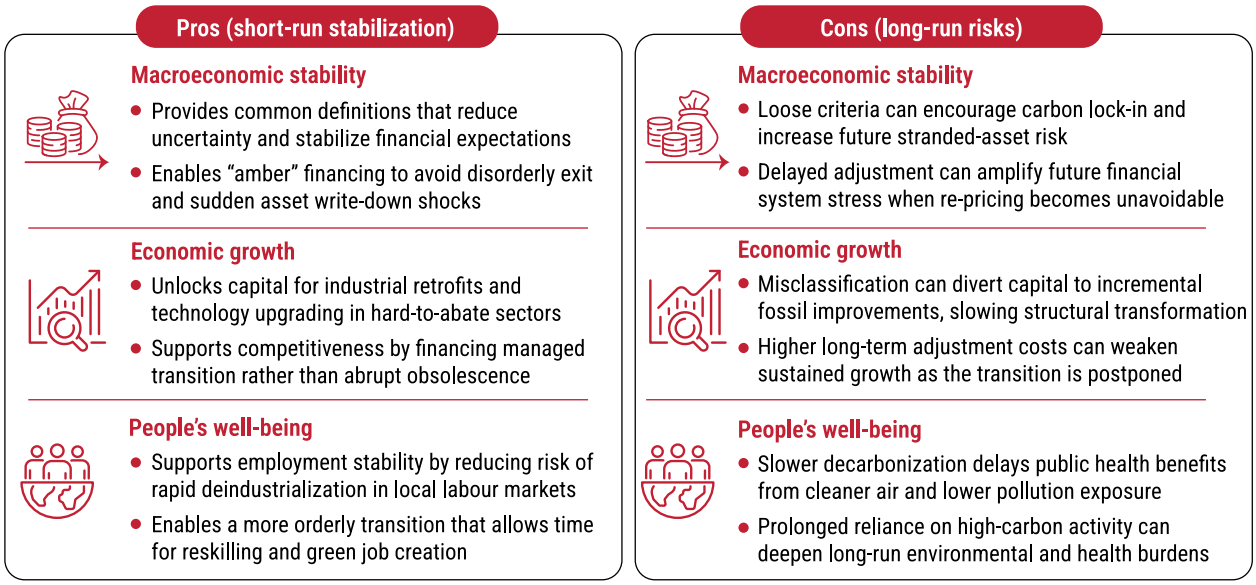
Economy/subregion	Taxonomy name/status	Key features
South-East Asia	ASEAN Taxonomy (version 3, 2024)*	Science-based, multi-tiered framework; uniquely classifies coal plants as green or amber if retiring early.
Singapore	Singapore-Asia Taxonomy (2023)	World's first to pioneer a dedicated "Transition" (amber) category with detailed sector-specific thresholds.
China	Green Bond Catalogue (updated)	Focused on industrial decarbonization; working with Singapore to map interoperability with the Common Ground Taxonomy.
Thailand	Thailand Taxonomy (2023)	Initial focus on energy and transport; aligned with ASEAN standards to support carbon neutrality goals.
Malaysia	CCPT (2021)	Principle-based taxonomy to standardize classification of green and transition assets for banking supervision.
Indonesia	TKBI Version 2 (2024)	Aligned with ASEAN standards; emphasizes the need for a just transition and social safeguards.

Source: ESCAP based on the ASEAN Taxonomy for Sustainable Finance (version 3), Bank Negara Malaysia (2021), and official national taxonomy documents.

Note: "Amber" categories refer to dedicated transition activities with detailed sector-specific thresholds designed to support managed phase-down pathways while preventing carbon lock-in.

* The ASEAN Taxonomy for Sustainable Finance (version 3) was released in March 2024 and became effective on 20 December 2024. It expands sectoral technical screening criteria beyond version 2 to include Transportation and Storage, and Construction and Real Estate, and applies a multi-tier "traffic light" classification (green/amber/red), with an "amber" tier to recognize and guide financing for eligible transition activities that are not yet green.

Figure 3.9. Transition finance taxonomies: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Box 3.3. Malaysia's climate change and principle-based taxonomy (2021)

Malaysia's central bank, Bank Negara Malaysia (BNM), implemented the Climate Change and Principle-based Taxonomy (CCPT) to standardize the classification of green and transition assets, integrating climate risk with prudential supervision. This framework successfully balanced economic stability and transition ambition, and enhanced banking sector resilience. By 2023, CCPT-aligned climate disclosures had become near-universal among major Malaysian banks, significantly enhancing the sector's ability to price transition risks and prevent disorderly deleveraging (BNM, 2023). Regulatory clarity also catalysed a surge in investment: between 2021 and 2023, green bond issuance increased by 23%, reaching $8.2 billion. This capital injection supported the growth of new green industries, contributing an estimated 0.3 percentage points to annual GDP growth through improved resource efficiency (BNM, 2023). Crucially, for people's well-being, the taxonomy explicitly requires financial institutions to assess remediation measures for any transaction, ensuring that financing flows align financial stability with social safeguards (BNM, 2021).

stringent, governance is strong and supervision prevents greenwashing, meaning the mislabeling of carbon-intensive activities as sustainable; overly permissive criteria can lock in high-carbon assets. Box 3.3 shows how a taxonomy can be operationalized through supervisory integration.

Policy 4: Managed phase-out mechanisms (energy transition mechanisms)

Managed phase-out mechanisms, such as energy transition mechanisms (ETMs), use blended finance to resolve the "stranded asset" deadlock, which, as noted in chapter 2, is highly sensitive to the pace of decarbonization and can lead to sizable financial losses for asset owners, workers and subnational governments dependent on fossil-fuel revenues.

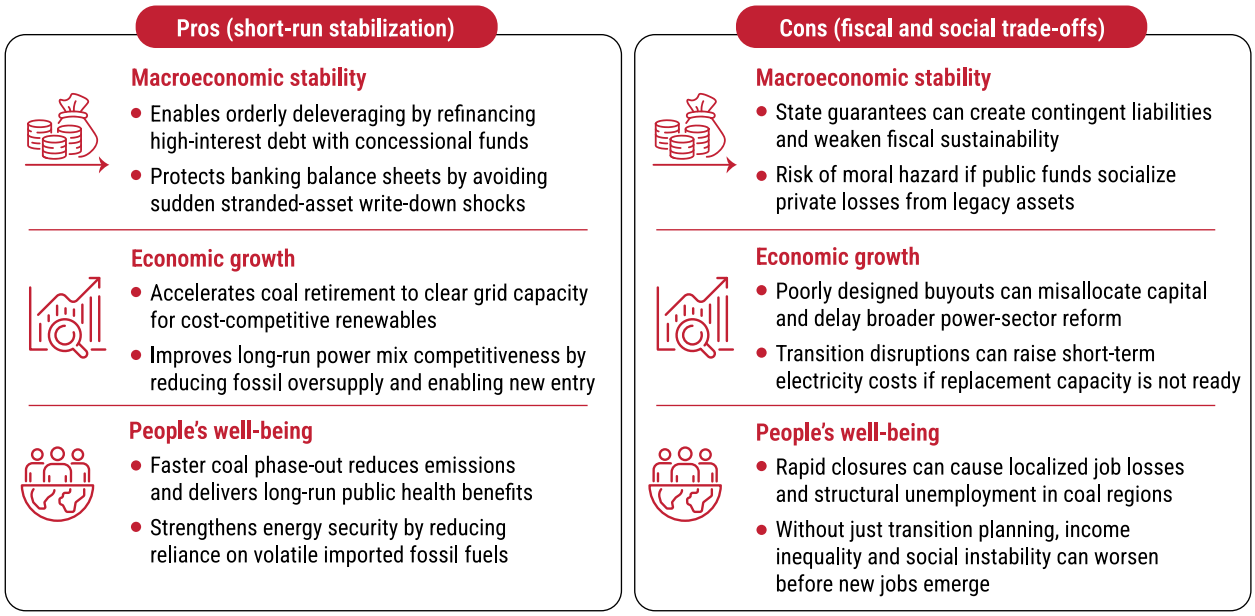
Recent ETM pilots in Asia and the Pacific illustrate how blended finance can accelerate coal retirements while delivering large, measurable emissions reductions. The ETM model has been piloted in Indonesia and the Philippines and extended analytically to Viet Nam (ADB, 2023). Retiring 50% of coal power capacity in Indonesia, the Philippines and Viet Nam 10–15 years earlier than originally planned could cut emissions by 200 million tons of CO_2 per year and approximately 2–3 gigatons cumulatively (Chaerani, 2024). In parallel, Indonesia's Accelerating Coal Transition investment plan includes $500 million in concessional finance intended to leverage approximately $2.0 billion in multilateral development bank (MDB) co-financing (Government of Indonesia, 2024).

Figure 3.10 **summarizes transition benefits alongside fiscal and moral-hazard risks. ETMs are most suitable where governance can cap contingent liabilities, ensure accelerated retirements and fund credible just-transition measures.** Weak structuring can shift costs to the public balance sheet. Box 3.4 illustrates how transaction design can manage these risks.

3.3.2. Priority policies for increasing clean and renewable energy (goal 2)

For economies aiming to reach the 30% renewables threshold, a key policy challenge is to cultivate **new growth engines through green supply chains and enabling infrastructure.** Unlike fossil fuel reduction, which primarily involves managing an orderly exit, scaling renewables requires considerable mobilization of capital and industrial capability. The priority policy mix should therefore combine fiscal instruments to stimulate supply in specific strategic sectors (for example, solar photovoltaic (PV), wind turbines and battery storage) and de-risk foundational grid infrastructure, with monetary and financial instruments that unlock private liquidity to scale development.

Figure 3.10. Energy transition mechanisms: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.
Note: Outcomes depend on governance, guarantee structure and just transition planning.

Box 3.4. The energy transition mechanism (ETM) in Indonesia (2021)

The Asian Development Bank (ADB) partnered with Indonesia to launch a pilot ETM transaction focusing on a 660-megawatt Cirebon-1 coal-fired power plant in West Java[a] in 2021. This transaction established a precedent for using financial structures to align environmental sustainability ambitions with economic considerations. To support sustained economic growth, the agreement aimed to retire the plant roughly seven years ahead of schedule, projecting the removal of 660 MW of baseload capacity from the Java-Bali grid. The transaction also used blended finance to refinance the plant's debt at a lower cost, allowing equity holders to exit without a default. This preserved the country's investment-grade rating and protected the domestic banking sector from a shock of sudden asset stranding (ADB, 2023). Finally, from the perspective of people's well-being, the early retirement of the plant is projected to avoid substantial cumulative emissions (estimated to be around 30 million tons of CO_2) over the plant's remaining life, significantly reducing local pollutants and associated health costs on densely populated West Java (ADB, 2023).

[a] The success of such mechanisms depends on managing the risk of political backlash, as large-scale, loan-heavy financial packages can be perceived as an erosion of national energy sovereignty and a shift towards disproportionate foreign donor influence.

A. Fiscal policies: stimulating supply

Policy 1: Industrial policy supporting the transition to an environmentally sustainable economy (production incentives)

Targeted production incentives can help economies capture the energy-transition value chain rather than relying on imported technologies. By providing performance-linked support for frontier sectors such as solar PV modules, batteries, grid equipment and other clean energy-enabling manufacturing, governments can accelerate domestic capability-building and industrial upgrading.

Across developing economies in Asia and the Pacific, targeted industrial policies are being used to scale clean technology manufacturing and accelerate the energy transition. Initiatives include India's Production Linked Incentive scheme for high-efficiency solar modules, China's strategic subsidies for electric vehicle battery manufacturing and others as detailed in table 3.5.

As shown in figure 3.11, production incentives can boost growth and competitiveness but carry fiscal and capture risks (that is, the risk of policymaking being dominated by vested interests). They are most suitable when time-bound, performance-linked, competitively allocated and tightly monitored to stimulate additional private-sector innovation and investment without rent-seeking or lock-in. Box 3.5 provides an example of conditional support in practice.

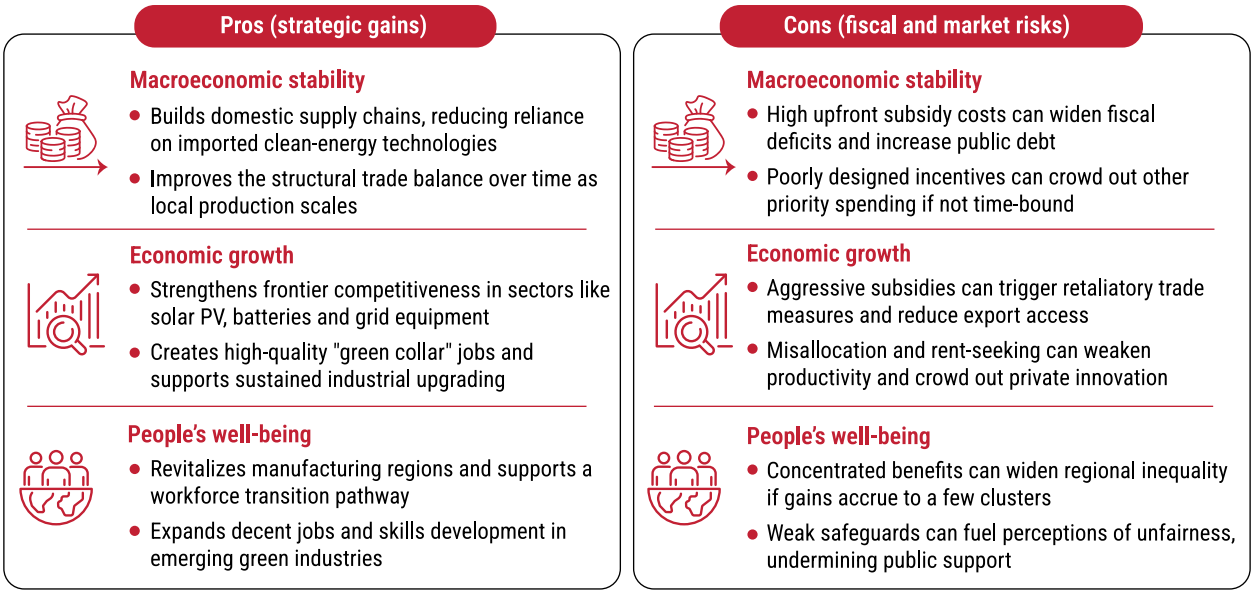
Table 3.5. Environmentally sustainable production incentives in the Asia-Pacific region

Economy	Key programmes/ initiatives	Start year	Target sector(s)	Performance-linked mechanism
India	Production Linked Incentive (PLI)	2021	Solar PV, advanced chemistry cell (ACC) batteries	Payouts are based on incremental sales and achieving high efficiency/local content thresholds (up to 60%).
China	National Strategic Subsidies	2009	EV batteries, solar supply chain, green hydrogen	Extensive support for manufacturing clusters; subsidies are often tied to technology leadership and research and development spending.
Australia	Hydrogen Headstart and Production Tax Incentive	2023	Green hydrogen and ammonia	Offers a credit/tax offset of A$2 per kg of production for renewable hydrogen produced and sold.
Thailand	EV 3.5 and BOI Incentives	2024	Electric vehicles and components	Provides subsidies and tax waivers (up to 8 years) contingent on committing to local assembly by 2026/2027.
Viet Nam	Decree 58/2025/ ND-CP	2025	Solar, wind and green hydrogen	Incentives like fee exemptions (up to 12 years) are prioritized for projects using 100% green hydrogen/ammonia.

Source: ESCAP based on national budget documents and the Impact and Policy Research Institute (IMPRI) (2025a, b).

Note: Performance-linked mechanisms ensure that payouts are contingent on achieving specific incremental sales, high efficiency or local content thresholds.

Figure 3.11. Industrial policy supporting transition to an environmentally sustainable economy (production incentives): trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Outcomes depend on performance-linked design, time-bounded support and competition policy.

Box 3.5. India's production-linked incentive (PLI) for solar PV (2021–present)

The Government of India allocated ₹24,000 crore (approx. $2.9 billion) to subsidize high-efficiency solar module manufacturing, but conditioned payouts on actual sales and local value addition. The policy successfully catalysed substantial private capital, resulting in the creation of 48 GW of manufacturing capacity. This expansion is projected to generate $64.6 billion in revenue over five years, effectively positioning India as a diversification hub in the solar supply chain (Sharma, Tewani and Gupta, 2025). By substituting imports with domestic production, the scheme is projected to save approximately ₹15,290 crore ($1.8 billion) in foreign exchange annually. This structural shift in the trade balance reduces the economy's exposure to currency volatility and external supply shocks (IMPRI, 2025a). Unlike capital-intensive sectors that create few jobs, the PLI's domestic content requirement spurred local labour-intensive assembly. As of late 2025, the scheme had created approximately 43,000 jobs (11,220 direct in solar manufacturing firms, with the remainder indirect across the supply chain) across nine states, revitalizing local economies in regions like Gujarat and Tamil Nadu (IMPRI, 2025a).

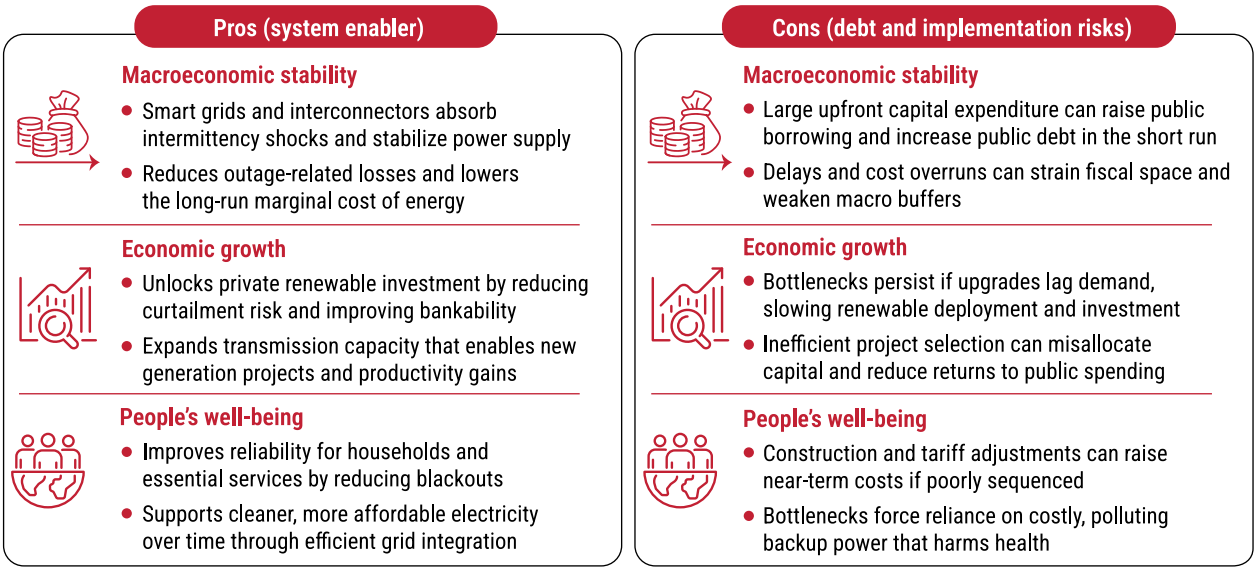
Policy 2: Public investment in grid modernization

Direct public investment in smart grids and transmission infrastructure is the critical enabler for the renewable transition, resolving the viability gap that otherwise halts private investment. Private power generation capacity cannot scale without a public backbone capable of handling intermittent supply. By expanding and modernizing the grid, governments can improve the bankability of clean generation projects and unlock private capital that would otherwise not be deployed.

The scale of the challenge is substantial across Asia and the Pacific. In South-East Asia, expanding and modernizing power grids to integrate higher shares of renewables would require a doubling of annual grid investment to nearly $30 billion by 2035 (IEA, 2024). Regionally, the ASEAN Power Grid vision implies vast infrastructure needs: achieving an integrated transmission network by 2045 is associated with an estimated $800 billion in generation and transmission investments (World Bank, 2025c).

As shown in figure 3.12, grid modernization improves system reliability but requires high upfront capital spending and strong delivery capacity. It is most suitable where project selection, procurement and regulation are robust, and tariffs/financing are aligned to protect fiscal space. Otherwise, bottlenecks persist and the deployment of renewables is curtailed. Box 3.6 elaborates how upgrades can unlock renewable integration.

Figure 3.12. Public investment in grid modernization: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Outcomes depend on project governance, planning capacity and tariff design.

Box 3.6. China's ultra-high voltage (UHV) grid expansion (2018–present)

Facing a geographic mismatch between renewable resources (in the west of the country) and industrial demand (in the east), China's State Grid Corporation invested approximately ¥2.38 trillion ($340 billion) in grid upgrades during the 13th Five-Year Plan (2016–2020). This public outlay helped integrate over 360 GW of new renewable capacity in 2024 alone (more than half the global total). Grid connections cut wind curtailment from over 17% to roughly 3% by 2023, improving asset returns (World Economic Forum, 2025; Wang and others, 2023). The expansion also reduced vulnerability to regional power shortages and volatile coal prices. The Ningxia-Hunan UHV line delivers 36,000 GWh annually, supplying stable power for 10 million households and reducing reliance on local thermal backup (Wang and others, 2023). The UHV network is estimated to reduce CO_2 emissions by nearly 1% year-on-year, delivering public health benefits especially in urban centres (World Economic Forum, 2025).

B. Monetary and financial policies: mobilizing capital

Policy 3: "Green" central bank liquidity and incentive frameworks

Central banks can actively lower the capital cost for the transition to an environmentally sustainable economy by calibrating macroprudential levers, such as reserve requirements and lending facilities, to favour green assets.

In the Asia-Pacific region, this is not purely theoretical, with economies operationalizing various such tools. They range from environmentally sustainable relending/refinancing facilities (for example, Bangladesh, China, Japan, Malaysia and Pakistan) to environmentally sustainable-linked reserve or macroprudential incentives (for example, Indonesia and the Philippines), as detailed in table 3.6. By offering preferential liquidity or lower reserve ratios to banks that lend to clean energy projects, central banks can effectively subsidize green growth through the monetary transmission channel. This supports sustained economic growth by increasing the supply of credit to strategic sectors (like electric vehicles or green housing) without requiring direct fiscal outlays.

Table 3.6. Central bank transition-aligned liquidity and incentive frameworks in Asia and the Pacific

Economy	Implementation/ reference	Central bank/ authority	Instrument type	Primary mechanism for transition to an environmentally sustainable economy
China	2021	People's Bank of China	Transition relending facility	Carbon emission reduction facility: Provides low-cost funds (1.75%) to banks, covering 60% of the principal for loans in clean energy and energy conservation.
Japan	2021	Bank of Japan	Transition-linked lending operations	Climate response financing operations: Provides long-term, zero-interest funds to financial institutions against their climate-related lending or investment portfolios.
Bangladesh	2016 (expanded in 2023)	Bangladesh Bank	Transition refinancing	Green transformation fund: Refinancing scheme for export-oriented sectors to adopt environmentally friendly machinery and water/energy efficiency technologies.
Indonesia	Since 2019 (LTV); 2023 (KLM)	Bank Indonesia	Transition macroprudential incentives	Macroprudential liquidity incentive (KLM): Differentiated reserve requirements and loan-to-value (LTV) rules (up to 0% down payment) for energy-efficient buildings and electric vehicles.
Philippines	2023	Bangko Sentral ng Pilipinas	Preferential reserve treatment	Reserve requirement incentives: Reduced reserve requirements (from 3% to 0%) for banks issuing sustainable bonds to lower the intermediation cost of transition capital.
Pakistan	2016 (revised 2020)	State Bank of Pakistan	Renewable energy refinance	Financing scheme for renewable energy: Provides concessional refinancing for solar, wind and hydro projects, with specific windows for small-scale residential and small- and medium-sized enterprise (SME) uptake.
Malaysia	2022	Bank Negara Malaysia	Transition-support facility	Low carbon transition facility (LCTF): A dedicated fund for SMEs to finance the capital expenditure required to adopt sustainable practices and improve energy efficiency.

Source: ESCAP based on Bank Indonesia (2023), Bank Negara Malaysia (2023) and respective central bank annual reports.

Note: This table excludes economies where central banks primarily use supervisory guidance or disclosure requirements without explicit liquidity or reserve incentives.

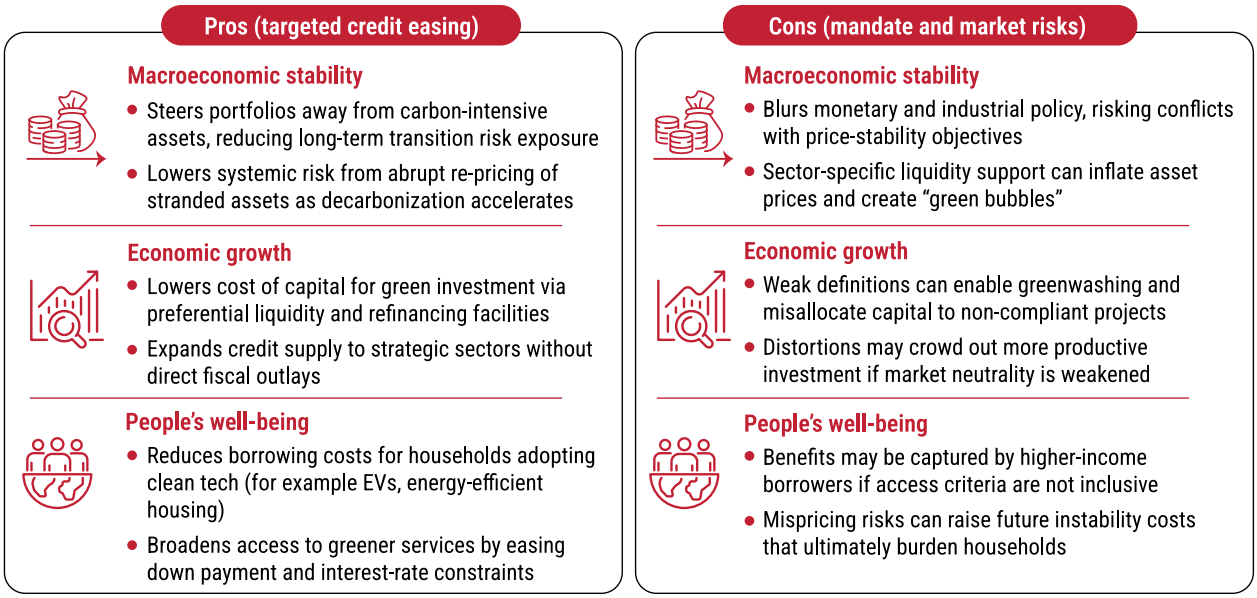
As indicated in figure 3.13, green liquidity tools can expand credit but may create mandate and market distortion risks. They work best when definitions are rigorous, aligned with taxonomies, and supported by strong governance that prevents greenwashing and protect the price-stability mandate. Box 3.7 sets out a calibrated implementation approach.

Policy 4: Sovereign GSS+ bonds

Sovereign GSS+ bonds (green, social, sustainability and sustainability-linked instruments) can mobilize large-scale capital for resilience, bridging the gap between immediate fiscal constraints and long-term infrastructure needs for the transition.

The Asia-Pacific region is now the global leader in transition bonds and a primary hub for sovereign GSS+ activity. Overall, the regional market has shown considerable resilience, with sustainable bonds now representing 21% of total international bond issuance in Asia and the Pacific

Figure 3.13. Central bank green liquidity and incentive frameworks: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Outcomes depend on strict taxonomy compliance and safeguarding the price-stability mandate.

Box 3.7. Bank Indonesia's macroprudential liquidity incentive (KLM) policy (2023–present)

Under the KLM framework, the central bank reduced the reserve requirement ratio by up to 50 basis points for banks that met specific green lending targets, effectively freeing up trapped capital for productive use. This policy unlocked significant liquidity, providing an estimated Rp50 trillion ($3.2 billion) in additional lending capacity for priority sectors, including renewable energy and electric vehicles (IFC, 2023; Chaerani, 2024). The policy was calibrated to ensure that banks kept strong buffers, with the capital adequacy ratio remaining high at 27.4% and non-performing loans contained at 2.5%, proving that green incentives need not compromise systemic stability (Bank Indonesia, 2023). To support inclusion, the liquidity incentives were paired with relaxed loan-to-value rules, allowing 0% down payments for green automotive loans and 100% financing for green housing. This directly reduced the upfront cost barrier for households, enabling wider access to energy-efficient assets (Chaerani, 2024).

in 2024, double the global average outside the region (Climate Bonds Initiative, 2025b). Table 3.7 shows the recent development of GSS+ bonds. By committing debt proceeds for green projects, governments can fund critical public goods, such as coastal adaptation, renewable energy parks or resilient water systems, that underpin long-term economic growth by protecting the asset base from climate shocks.

Figure 3.14 shows that sovereign labelled bonds can mobilize finance but their issuance adds to debt and requires credibility. They work best when fiscal discipline is strong and project selection robust, supported by transparent reporting to reduce greenwashing and preserve fiscal space. Box 3.8 illustrates how proceeds can be linked to resilient public value.

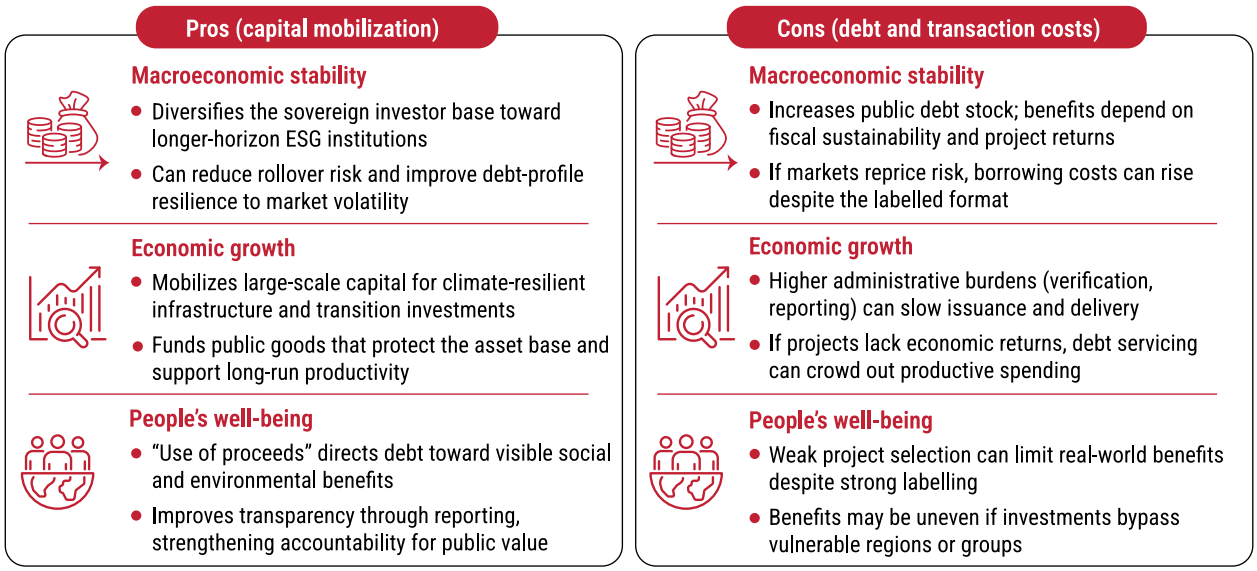
Table 3.7. Sovereign green, social and sustainability (GSS+) bond issuance in the Asia-Pacific region

Economy	Cumulative sovereign issuance (billion $)	Key developments in 2024/2025
Thailand	$15.0	Issued ASEAN's first sovereign sustainability-linked bond in 2024 ($868m).
Hong Kong, China	$12.5	Remains a top hub; issued $1 billion in green bonds in 2024.
Singapore	$10.2	Maintains steady issuance; strictly aligned with the Singapore-Asia Taxonomy.
Philippines	$8.4	Accounted for over 50% of all ASEAN international issuance in 2024.
Japan	$7.5	Global leader in transition bonds, funding 22 next-gen climate areas.
Indonesia	$5.2	Pioneered "blue bonds" in 2024 to support marine conservation.
China	$0.83	Announced inaugural sovereign green bond for issuance in London in 2025, marking its first offshore sovereign green bond offering.
Uzbekistan	$1.1	Diversified its market with a major sovereign sustainability bond in 2024.

Source: ESCAP based on the Climate Bonds Initiative (2025a). Data as of October 2025.

Note: GSS+ instruments include green, social, sustainability and sustainability-linked bonds. Sustainable bonds represented 21% of total Asian international bond issuance in 2024.

Figure 3.14. Sovereign green, social and sustainability (GSS+) bonds: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Outcomes depend on credible frameworks, impact reporting and high-return/avoided-cost project selection.

Box 3.8. Fiji's sovereign green bond (2017)

Facing annual losses estimated at 5% of GDP due to the impacts of climate change, the Government of Fiji raised FJ$100 million (approx. $50 million) in 2017 to fund its transition to a climate-resilient, low-carbon development pathway. The sovereign green bond issuance was unique in its focus on adaptation, with 90.6% of proceeds allocated to projects that protect communities, such as climate-proofing schools and improving water infrastructure. This investment provided clean water access to over 42,000 people in rural areas, protecting health outcomes from climate disruption (IFC, 2024; Government of Fiji, 2018). The bond successfully diversified the Government's funding sources. It was issued in two tenors; a 5-year at 4.00% and a 13-year at 6.30%. Both were oversubscribed by investors, demonstrating that credible green frameworks can attract private capital even for non-commercial adaptation projects (World Bank, 2017). By financing the rehabilitation of infrastructure post-cyclone Winston, the bond protected the tourism and agriculture sectors – drivers of 40% of Fiji's GDP – ensuring that natural disasters did not result in permanent structural economic damage (IFC, 2024).

3.3.3. Priority policies for increasing energy efficiency (goal 3)

For economies with secure energy supply but high energy intensity, as discussed in section 3.2, improving energy efficiency is the first step of the transition. The primary challenge is to decouple economic growth from energy demand by providing incentives to modernize industrial and building stocks. While foundational regulatory standards, such as minimum energy performance standards and building codes, are essential to set the baseline, policies should focus on closing the investment gap. This requires a targeted mix of fiscal instruments that shift relative prices and purchasing incentives towards energy-efficient goods and financial instruments to lower the high upfront capital cost of retrofitting.

A. Fiscal policies: demand-side management

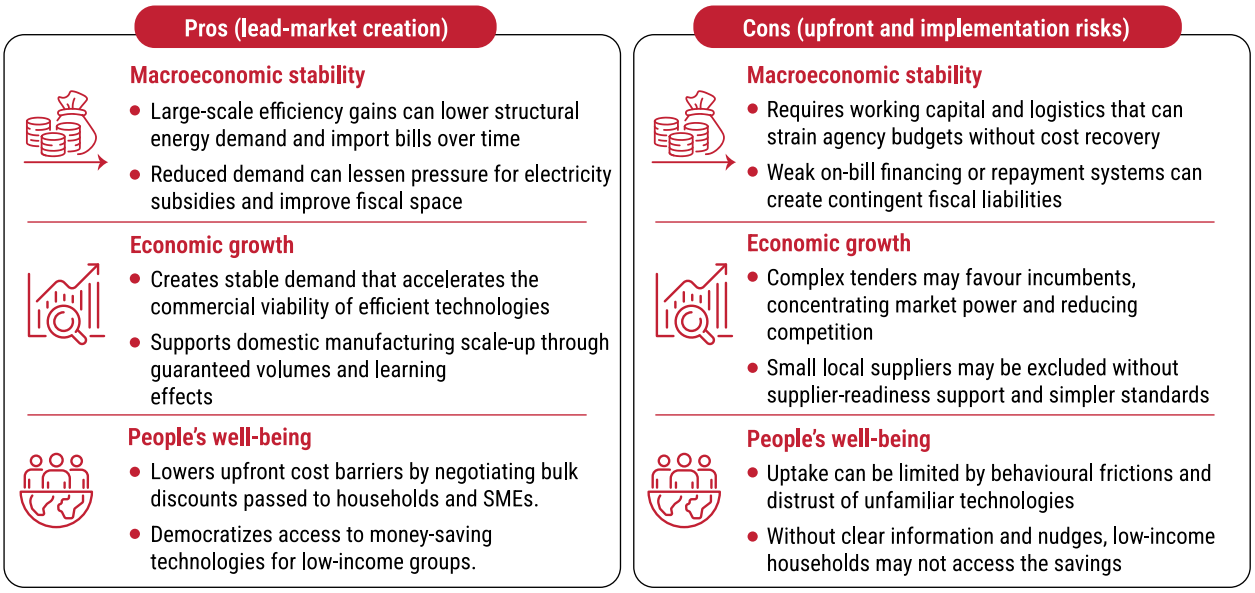
Policy 1: Bulk green procurement and demand aggregation

Bulk green procurement and demand aggregation leverage the state's purchasing power to create a "lead market" for efficient technologies by procuring at scale and reducing unit costs for households and firms. Traditional green public procurement focuses on the government as an end-user (for example, by buying efficient equipment for public offices). Public demand aggregation leverages coordinated bulk purchasing (often with repayment mechanisms such as on-bill instalments) to overcome upfront cost barriers and accelerate market adoption. It should be paired with the behavioural "last-mile" measures discussed in chapter 4.

Bulk procurement has proven to be a high-impact, scalable tool for accelerating energy efficiency uptake in Asia and the Pacific. The approach has been deployed at very large scale in the region through India's UJALA programme, as discussed in box 3.9. More recently, regional policy road maps highlight bulk procurement as a scalable mechanism for efficiency technologies in South-East Asia, including support efforts that involve Thailand and other partners (OECD, 2024).

As shown in figure 3.15, demand aggregation can cut costs and accelerate uptake, though it depends on the quality of implementation. Bulk procurement works best when governments can run competitive tenders, enforce standards and pass savings on through simple payment mechanisms. Box 3.9 illustrates how rapid scale-up can be achieved through a super-aggregator model.

Figure 3.15. Bulk green procurement and demand aggregation: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Effectiveness depends on cost-recovery design, supplier readiness and behavioural "last-mile" measures.

Box 3.9. India's unnat jyoti by affordable LEDs for all (UJALA) scheme (2015–present)

Implemented by Energy Efficiency Services Limited (EESL), a state-owned super-aggregator, India's UJALA used bulk procurement to sharply reduce bulk procurement prices for LED bulbs (CLASP, 2023). Competitive tenders slashed procurement costs from ₹310 (approximately $3.70) to around ₹38 (approximately $0.45) (2014–2024), driving retail prices down from ₹350 (approximately $4.20) to around ₹70 (approximately $0.85) (EESL, 2024). This made efficient lighting affordable even for poor households (IBEF, 2024). Moreover, this affordability catalysed domestic manufacturing, expanding capacity to 40 million units/month (CLASP, 2023). With 368 million bulbs distributed, the scheme saves 47.8 billion kWh annually and removed 9,586 MW of peak demand, negating costly plant construction (IBEF, 2024). Crucially, it saves consumers ₹19,153 crore ($2.3 billion) annually while cutting 39 million tons of CO_2 emissions (IBEF, 2024).

Policy 2: Technology upgrade incentives

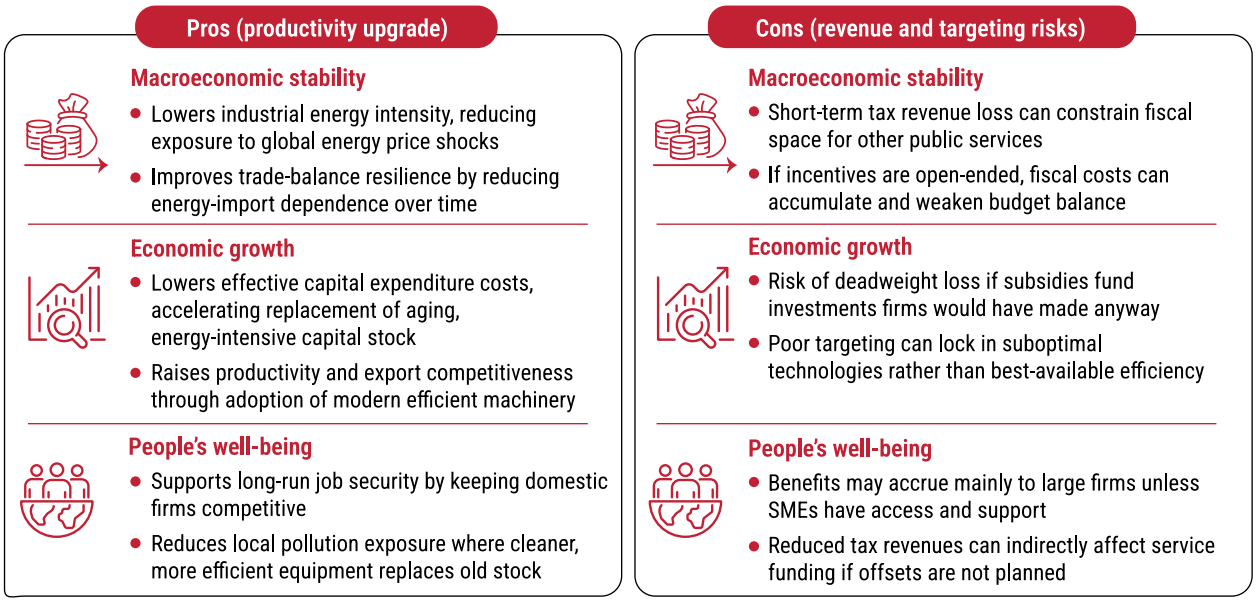
Incentives for upgrading technology, such as tax allowances, accelerated depreciation or enhanced capital allowances, reduce the effective upfront cost of industrial modernization by allowing firms to deduct qualifying capital expenditure on energy-efficient machinery from taxable income. These incentives are typically used to accelerate replacement of ageing, energy-intensive capital stock and should be designed as time-bound and standards-based (that is, linked to technologies that exceed business-as-usual performance) to minimize deadweight losses (that is, subsidizing investments that would have occurred anyway) and improve targeting.

Technology upgrade incentives are widely used across Asia and the Pacific, though they vary in form and eligibility rules. Singapore's corporate tax system has provided accelerated capital allowance treatment for certified energy-efficient equipment and technology (IRAS, 2025). Japan has operated an energy efficiency promotion tax framework that includes accelerated depreciation for qualifying investments (IEA, 2019).

Malaysia's green investment tax allowance (GITA) has provided an allowance on qualifying green technology assets over successive programme periods (MGTC, 2025). Indonesia's investment incentive framework included accelerated depreciation and amortization provisions for qualifying investments (UNCTAD, 2019).

Figure 3.16 **highlights productivity benefits alongside revenue leakage and deadweight loss. Incentives for upgrading are most suitable when they are time-bound, standards-based and verified, targeting above-baseline technologies to avoid subsidizing business-as-usual investment.** Box 3.10 discusses how such incentives can be structured and delivered.

Figure 3.16. Technology upgrade incentives: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Effectiveness depends on time-bounded design and targeting technologies beyond business-as-usual standards.

Box 3.10. Malaysia's green investment tax allowance (GITA) (2014–2026)

Malaysia's GITA scheme has provided, since 2014 and through its current extension to 2026, a 100% investment tax allowance on qualifying green capital expenditure. This incentive structure has been pivotal in driving industrial retrofitting. In the first half of 2023 alone, the Malaysian Investment Development Authority approved green technology projects worth RM1.3 billion ($280 million), ranging from renewable energy to industrial energy efficiency upgrades (KPMG, 2023). By incentivizing the adoption of energy-efficient equipment listed in the MyHIJAU directory,[a] the scheme reduces the energy intensity of the manufacturing sector. This structural shift lowers the long-term energy import bill and enhances the resilience of the industrial base against energy price volatility (KeTTHA, 2017). The extension of GITA to include "green services" and solar leasing has broadened the beneficiary base, allowing smaller service providers to enter the market and creating skilled jobs in energy auditing and installation (EY Malaysia, 2023).

[a] The MyHIJAU Directory is Malaysia's official green product and service certification registry, used to identify eligible technologies for green incentives and public procurement.

B. Monetary and financial policies: de-risking performance

Policy 3: Energy efficiency-linked loans

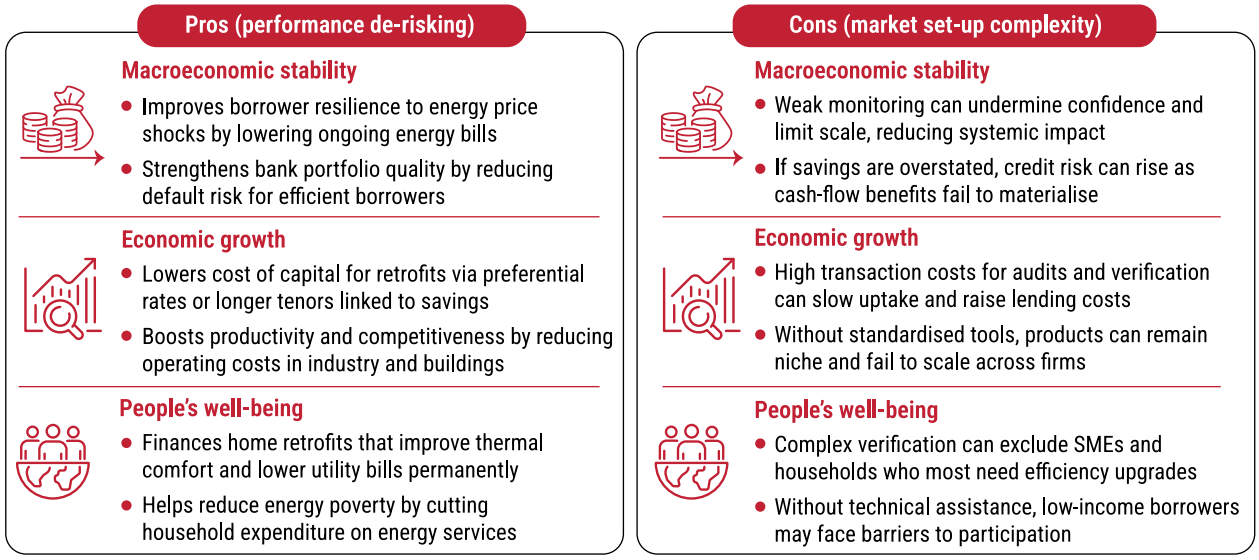
Efficiency-linked loans address the critical "maturity mismatch"[1] for private sector retrofits by tying credit terms directly to verified energy savings. By offering preferential interest rates or longer tenors for projects that meet specific efficiency targets, these instruments reduce the cost of capital for firms investing in modern machinery, building insulation or waste heat recovery.

Across the region, targeted credit facilities and preferential mortgage terms are being used to lower financing costs and stimulate investment in energy efficiency. For example, Thailand's Energy Efficiency Revolving Fund provided zero-interest credit lines to participating banks on the condition that they on-lend to energy efficiency projects at an interest rate of no more than 4% (World Bank, 2013). Japan Housing Finance Agency's Flat 35 S programme offers reduced interest rates for a portion of the loan term for homes meeting higher energy efficiency standards (JHF, 2025).

As figure 3.17 indicates, efficiency-linked loans can address financing barriers but face measurement and verification (M&V) and access constraints. These loans work best when M&V are standardized and low-cost, alongside technical assistance to enable small- and medium-sized enterprises (SMEs) to participate and lenders to price savings confidently. Box 3.11 presents an operational facility approach in Uzbekistan.

[1] Energy-efficiency upgrades in the private sector (like building retrofits) pay for themselves slowly over time through lower energy bills. But loans are often shorter-term or structured in a way that requires repayment before those savings fully materialize. That mismatch between when costs are paid and when benefits show up is the "maturity mismatch."

Figure 3.17. Energy efficiency-linked loans: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.
Note: Scaling requires standardized verification and technical assistance for audits and project preparation.

Box 3.11. Uzbekistan's industrial energy efficiency facility (2018)

Supported by the World Bank, the Government of Uzbekistan established a dedicated facility to finance retrofits for 30 large state-owned enterprises in energy-intensive sectors like oil, gas and chemicals. By modernizing outdated equipment, the participating enterprises achieved energy savings equivalent to 360 million kWh annually. The energy saved was substantial enough to satisfy the electricity needs of approximately 176,000 households per year (World Bank, 2018). This avoided generation capacity (often referred to as "nega-watt" capacity, meaning electricity saved rather than produced) reduced the strain on the national grid and lowered the implicit subsidy burden on the state, improving the overall fiscal balance (World Bank, 2018). The programme's focus on industrial efficiency indirectly protected jobs by ensuring that key employers remained financially viable during the transition to market-based energy pricing. Furthermore, the reduction in energy waste contributed to national energy security, ensuring reliable supply for the population.

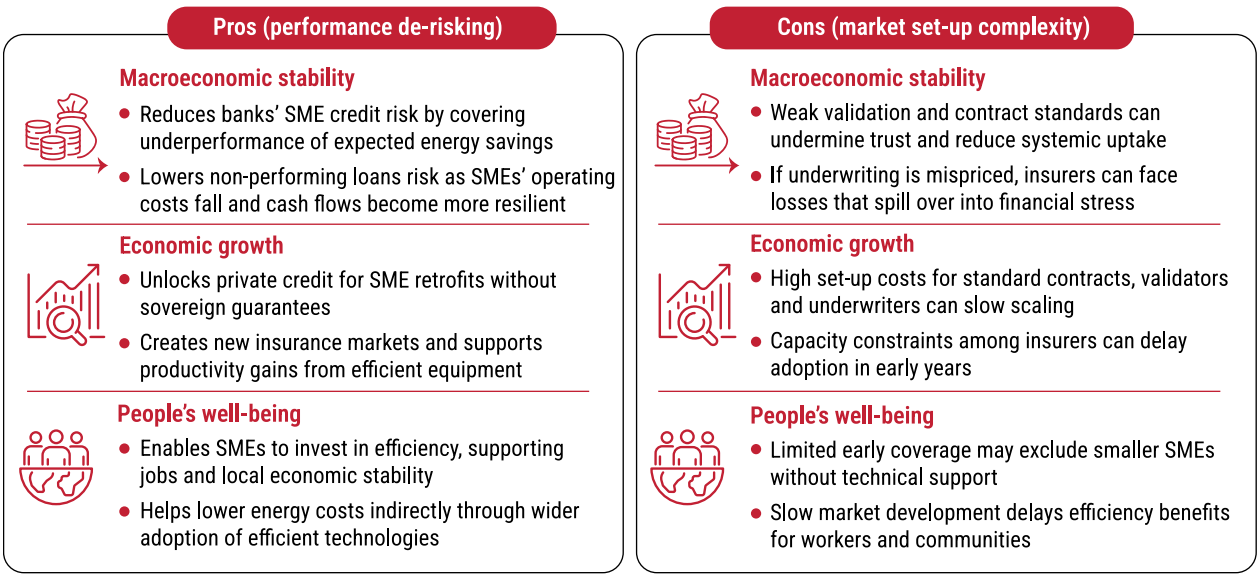
Policy 4: Energy savings insurance

Energy savings insurance (ESI) is a de-risking instrument designed to overcome "performance risk" in energy-efficiency investments by insuring the delivery of verified energy savings. If realized savings fall short of the agreed baseline, the insurance compensates the difference, improving lender confidence and enabling SMEs to finance retrofits without relying on sovereign guarantees. The instrument typically requires a standardized performance contract, an independent technical validation process and an insurer (or reinsurer) willing to underwrite technical risk (OECD, 2023).

Uptake remains nascent in Asia and the Pacific, but ESI is emerging in policy road maps and pilot design work. In Thailand, an ESI model has been explicitly identified as a pilotable mechanism to promote energy-efficiency markets and unlock SME investment potential (OECD, 2024). Regional development efforts are also under way with a multi-donor initiative supporting the design of de-risking instruments for energy-efficiency investments in the region, starting with India and the Philippines, to help unlock private capital (Chatterjee, 2025).

Figure 3.18 **summarizes key risk-reduction benefits and shows why ecosystem constraints can limit scale. ESI is most suitable where pipelines, standard contracts, credible validators and insurer/reinsurer capacity exist.** Public support should build market infrastructure. Box 3.12 outlines what that enabling setup looks like.

Figure 3.18. Energy savings insurance (ESI): trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Scaling requires standardized contracts, credible validation entities and insurer capacity-building.

Box 3.12. Mongolia's energy savings insurance (ESI) pilot (2023–present)

Led by XacBank and the Basel Agency for Sustainable Energy, Mongolia launched an ESI pilot to decarbonize micro, small and medium enterprises (MSMEs). With a $296,300 Green Climate Fund grant, XacBank linked the model to a $60 million credit line serving 240+ MSMEs (OECD, 2024). Fully deployed, it is estimated to mobilize $36 million, saving 39 GWh, and avoiding 234,206 tCO_2e over five years (OECD, 2024). By mitigating performance risk, the pilot encourages MSMEs to invest in efficient heating and insulation technologies that are essential for business continuity during Mongolia's harsh winters. They also help lower operating costs (BASE, 2023). This model mobilizes private lending rather than recurring subsidies, creating a scalable mechanism (OECD, 2024).

3.3.4. Priority policies for increasing energy access (goal 4)

For economies where a significant portion of the population lacks reliable electricity, the "transition" is fundamentally about building infrastructure to bridge the "last mile". Unlike advanced economies that are focused on decarbonizing existing systems, these economies should prioritize expanding access to unlock basic economic potential. This requires a targeted mix of fiscal instruments to bridge the viability gap for infrastructure and financial instruments to overcome sovereign borrowing constraints.

A. Fiscal policies: bridging the viability gap

Policy 1: Public investment in grid extension

Direct public investment in backbone energy infrastructure – particularly grid extension, transmission lines and last-mile connections – is often the most viable way to connect remote populations where private investment is not profitable. Treating the grid as a public good helps resolve the market failure that leaves rural and sparsely populated areas un- or underserved. Doing so can also reduce reliance on costly local diesel generation in isolated systems where it remains prevalent (IEA, 2024).

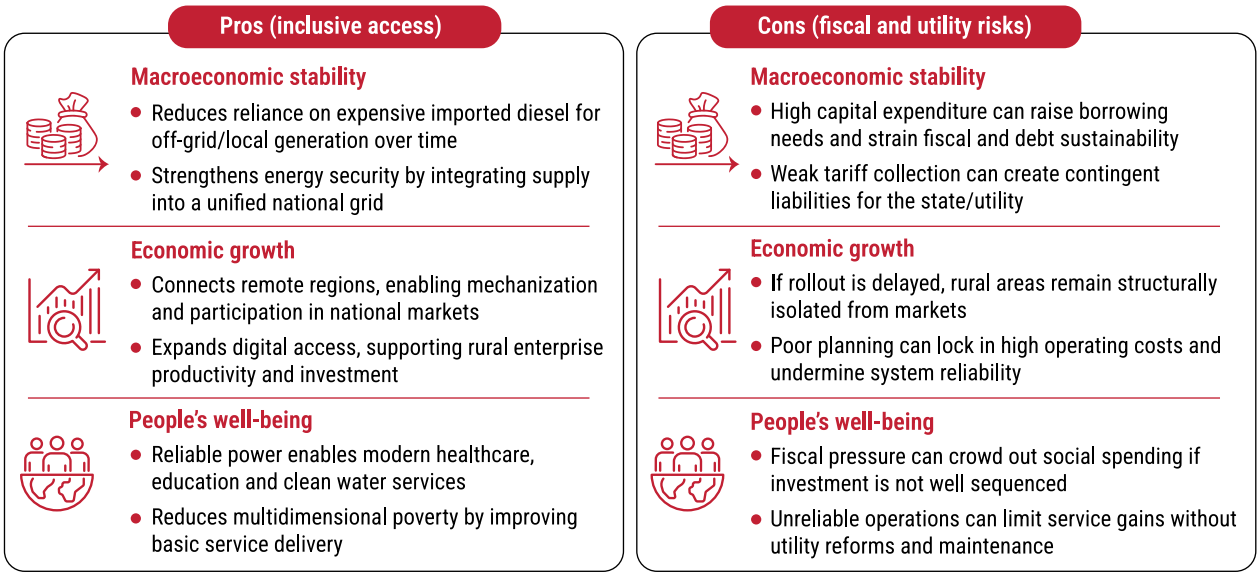
While developing economies in Asia and the Pacific have made rapid progress towards universal electrification, the remaining access gap is now concentrated in harder-to-reach settings. Almost 1 billion people have gained access since 2010, and 97% of the region's population had electricity access in 2023 (IEA, 2024). Closing the final gap will require continued grid expansion alongside complementary decentralized solutions (IEA, 2024).

As shown in figure 3.19, grid extension offers growth gains but can strain public finances if utilities continue to make losses. It works best when capital expenditure is paired with operational and financial reforms, loss reduction, tariff discipline and maintenance, so that solvency and service quality improve. Box 3.13 illustrates a reform pathway that supports scale.

Policy 2: Targeted connection subsidies (output-based aid)

Targeted one-off connection subsidies, often delivered as output-based aid, lower the upfront connection charge that can exclude disadvantaged households even when there is a grid. By subsidizing the capital cost of connection, rather than ongoing consumption, governments can expand the customer base while avoiding open-ended fiscal liabilities, provided that subsidies are tied to verified connections and clear eligibility rules.

Figure 3.19. Public investment in grid extension: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Viability depends on pairing investment with operational reforms and financially solvent utilities.

Box 3.13. Nepal's rapid electrification drive (2000–2024)

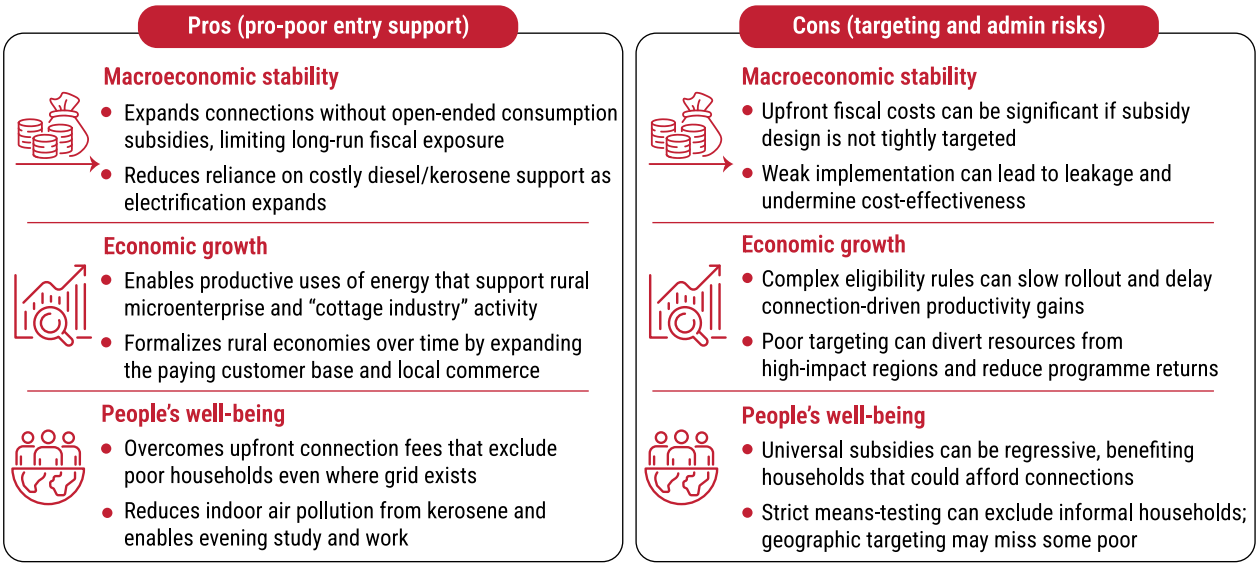
The Nepal Electricity Authority (NEA) expanded electricity access from 53% in 2010 to 95% by 2024, effectively ending the era of "load-shedding"[a] (World Bank, 2025a). Through rigorous reforms, the NEA reduced system leakage (technical and non-technical losses) from around 26% in the early 2010s to about 12–13% by 2023–2024. This converted the utility from a fiscal burden into a profitable asset, with NEA reporting double-digit-billion-rupee net profits (approximately $75–150 million, depending on the year) in recent years instead of chronic losses ((World Bank, 2025b). The stabilization of the power supply fueled a rebound in the industrial and services sectors. The elimination of power cuts is estimated to have saved the economy around 6-7% of GDP annually in avoided losses, proving that reliable infrastructure is a critical growth enabler (World Bank, 2023a). Universal access has bridged the urban-rural divide, enabling modern health care services in remote provinces like Karnali, where access rates surged, directly improving maternal health and literacy outcomes (World Bank, 2023a).

[a] A deliberate, controlled and temporary measure used by utility companies to cut power to specific areas, preventing a total, long-term blackout when electricity demand exceeds supply.

Results-linked subsidies offer a practical way to expand electricity access in remote and high-cost settings by reducing upfront connection barriers for low-income households. In the Pacific, this approach has been operationalized through the Vanuatu GPOBA Improved Electricity Access project, which provides targeted support for low-income consumers to obtain formal grid connections. The programme includes a one-off subsidy covering up to 80% of connection costs, alongside additional support for household wiring where needed (World Bank, 2014). Similar output-based mechanisms have been applied in other remote island systems to ease access constraints, suggesting a growing uptake of results-linked approaches in Asian and Pacific power sectors.

Figure 3.20 highlights strong inclusion benefits but also leakage and targeting risks. Connection subsidies work best when they are one-off and results-based, with clear eligibility criteria, verified connections and simple delivery systems. Pairing them with wiring support can improve safety and effectiveness. Box 3.14 elaborates practices that deliver impacts.

Figure 3.20. Targeted connection subsidies (output-based aid): trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Effectiveness depends on targeting design (often geographic) and robust verification of connections.

Box 3.14. The Philippines' Sitio Electrification Programme (2011–2019)

The Philippines tackled the "last mile" challenge through its Sitio Electrification Programme, providing 100% subsidies to connect remote subvillages where electrification had previously been deemed commercially unviable. This intervention proved that energy access is a prerequisite for economic diversification: grid connection triggered a 42% surge in household income, driven largely by a structural shift from subsistence agriculture to higher-value non-farm enterprises (Chakravorty, Emerick and Ravago, 2016). The fiscal return on investment was rapid; with an average connection cost of roughly $325, the infrastructure outlay was socially recouped within just one year of realized welfare gains. By 2019, the programme had electrified over 1.5 million households, creating a double dividend of improved educational outcomes and reduced household expenditure on expensive kerosene (Department of Energy Philippines, 2020).

B. Monetary and financial policies: addressing sovereign constraints

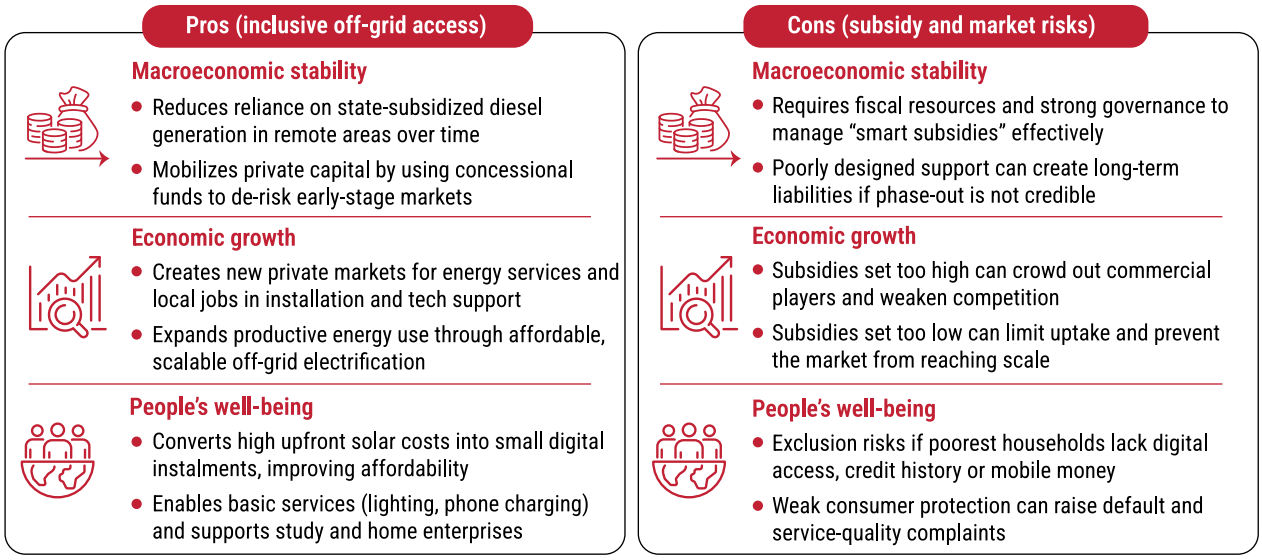
Policy 3: Blended finance for inclusive fintech (pay-as-you-go)

Blended finance facilities can use concessional public funds to de-risk private investment in off-grid solar, resolving the "affordability trap" through digital innovation. In scattered rural settlements, extending the main grid is often economically unviable. Blended finance vehicles can provide grants or low-interest credit to private energy companies, allowing them to deploy "pay-as-you-go" (PAYG) models. This enables households to pay for solar systems in small instalments; mimicking operational expenditure rather than a prohibitive capital cost.

Blended support that combines grants with concessional finance can help scale off-grid solutions by lowering costs for providers and improving affordability for households. This approach is reflected in Bangladesh's IDCOL Solar Home System programme, which channels grant and concessional-loan support through partner organizations. Another example is the International Finance Corporation (IFC) Lighting Myanmar initiative, which uses grant-backed market development to expand access to quality-verified off-grid solar products and consumer finance (IFC, 2020; World Bank, 2023b).

As indicated in figure 3.21, PAYG blended finance can expand access but requires governance to avoid market distortion and implementation risks. It works best when smart subsidies are targeted and time-limited, consumer protections are strong and effective oversight prevents crowding-out. Reliable payment infrastructure is essential. Box 3.15 illustrates how de-risking can be structured.

Figure 3.21. Blended finance for inclusive financial technology (fintech): trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Success depends on well-calibrated, time-bound "smart subsidies" and strong consumer protection.

Box 3.15. Pakistan's Sindh province solar energy project (2019–present)

Approved in 2018 and effective from 2019, and supported by the World Bank, the Sindh provincial government launched a blended finance facility to accelerate distributed solar power deployment, leveraging private sector delivery models. The project has already installed solar systems in around 200,000 homes, providing clean, reliable electricity to roughly 1.5 million people (Government of India, 2025). This has dramatically improved the quality of life in off-grid areas, reducing reliance on hazardous kerosene lamps. By subsidizing up to 80% of the cost of solar-powered irrigation pumps for tens of thousands of farmers (with a design target of around 80,000), the scheme modernized the agricultural backbone of the province. This reduced input costs for farmers and improved water efficiency, directly boosting agricultural productivity (Government of India, 2025). The wider adoption of distributed solar has reduced demand (relieving the strained national grid) and lowered the province's dependence on imported fossil fuels, contributing to long-term energy security (ESMAP, 2021).

Policy 4: Debt-for-climate swaps

Debt-for-climate swaps allow highly indebted countries to turn external liabilities into funding for climate resilience and transition investments. This is done by negotiating partial debt relief or refinancing in exchange for committed funding for agreed climate projects.

In Asia and the Pacific, swaps have so far been implemented mainly through bilateral, deal-specific conversions, rather than large, **system-wide restructurings.** In addition to the Indonesia-United States agreement discussed in box 3.16, Italy and the Philippines also signed a debt-swap agreement in 2012 of €2.9 million (approximately $3.7 million) to finance development projects for environmental protection and poverty reduction (Ambasciata d'Italia Manila, 2012). More recent region-wide assessments emphasize that while the use of swap instruments has increased in recent years, their aggregate contribution to debt reduction remains modest, so expectations about debt-sustainability impacts should be realistic (UNDP, 2023).

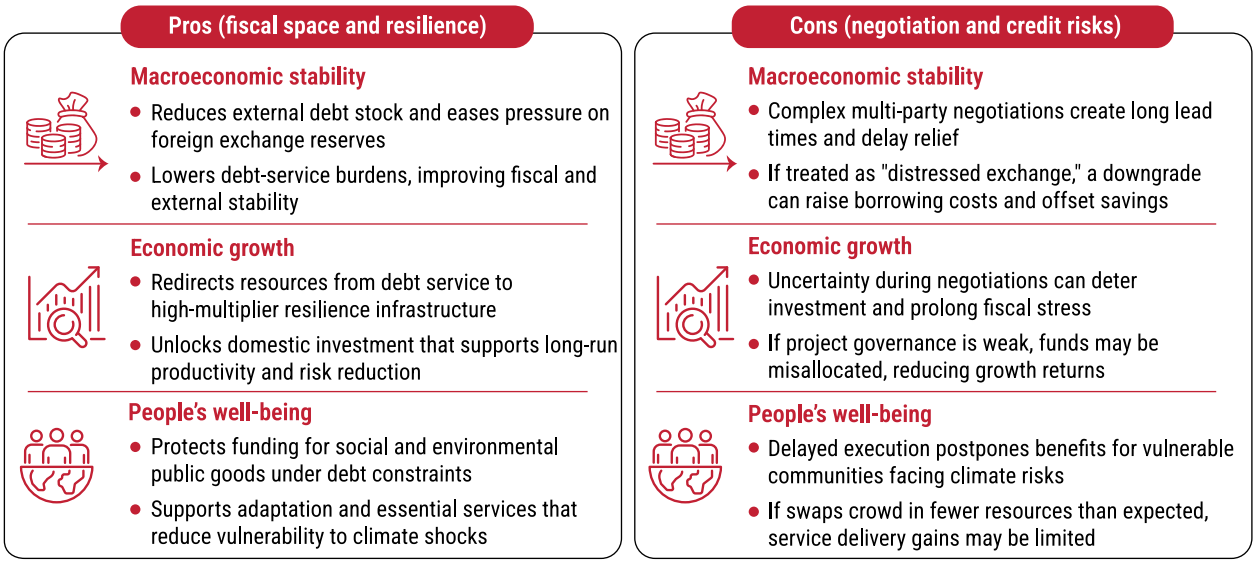
Figure 3.22 **highlights the fiscal space potential but also the modest debt-relief effects and transaction costs. Swaps work best when governance is transparent, projects are additional to existing public spending commitments, and**

Box 3.16. Indonesia's debt-for-nature swap (2024)

In 2024, Indonesia signed a landmark $35 million[a] debt-for-nature swap with the United States under the Tropical Forest and Coral Reef Conservation Act (TFCCA). The agreement improves allocative efficiency by retaining debt service payments within the domestic economy. Over the next nine years, approximately $3.9 million will be redirected from external creditors to a local conservation fund annually, easing pressure on foreign reserves (US Treasury, 2024). The funds are strictly earmarked for protecting over 800,000 hectares of coral reef ecosystems (Jong, 2024). This investment directly secures the economic base of the "Blue Economy" – referring to sustainable ocean-based economic activities such as fisheries, tourism and marine conservation – by effectively managing reefs in these seascapes, which support marine tourism and fisheries industries valued at millions of dollars annually. It sustains the livelihoods of coastal communities and Indigenous groups who rely on these ecosystems for food security (Simpson and others, 2024).

[a] While current transaction sizes are often small relative to GDP, they serve as critical pilots for establishing the legal frameworks needed for larger sovereign restructuring in the future.

Figure 3.22. Debt-for-climate swaps: trade-offs for macroeconomic stability, economic growth and people's well-being



Source: ESCAP.

Note: Most viable where solvency pressures exist and swap governance ensures credible project delivery.

coordination aligns with debt management strategy. Deals should be designed to limit fragmentation. Box 3.16 sets out how a recent swap structure channels repayments into agreed priorities.

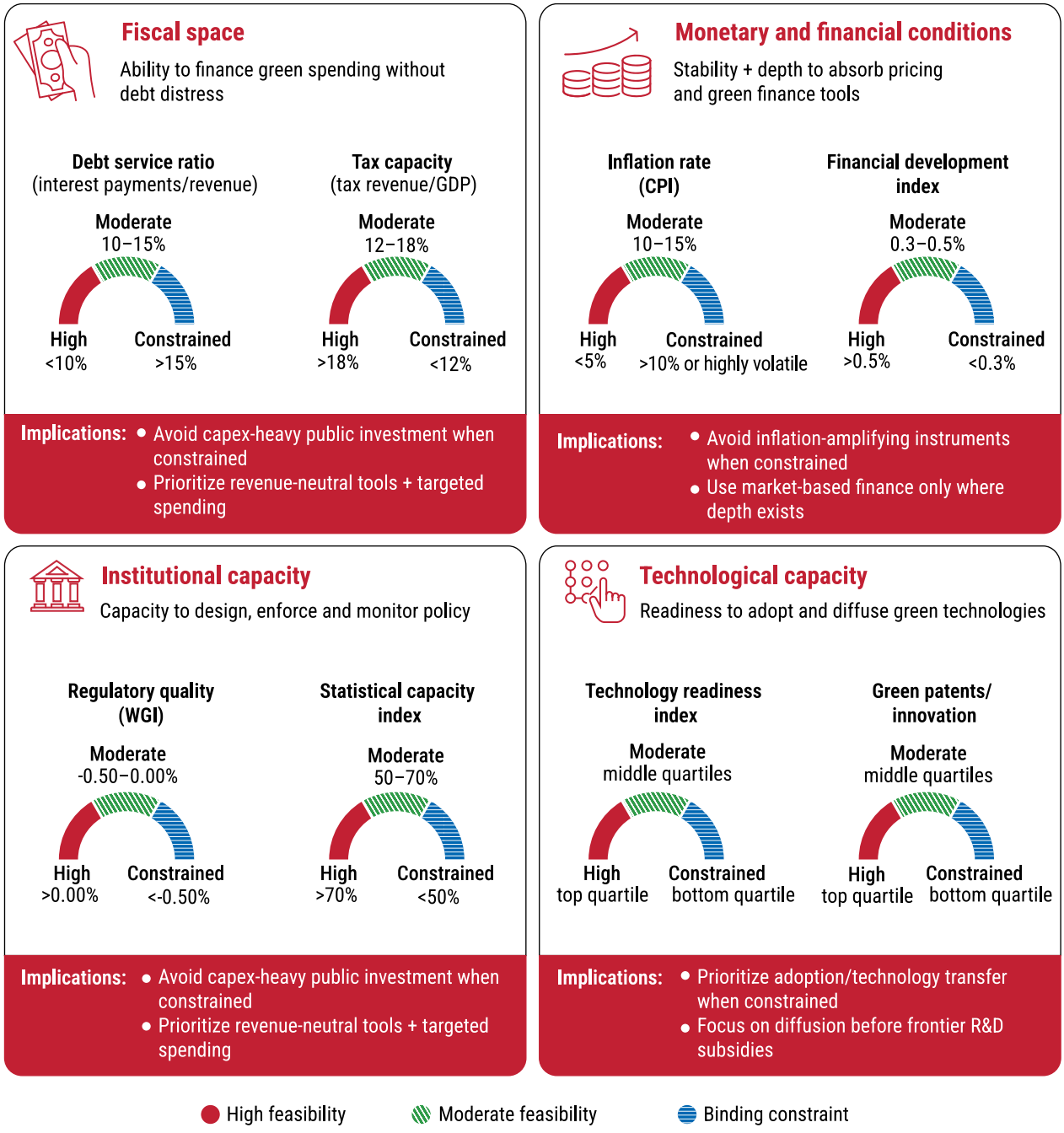
To translate transition objectives into macroeconomic outcomes, policy design must move beyond individual tools towards integrated packages. Identifying priority policies is only the starting point. Since single instruments rarely deliver economic stability, economic growth and well-being at once, policymakers should build synergies by bundling fiscal corrections, social buffers and financial incentives into coherent packages. Sections 3.4 and 3.5 assess the economic feasibility of such packages amid the transition to an environmentally sustainable economy.

3.4. Feasible policies and implementation capacity

The decisive challenge for policymakers is to align priority instruments with national implementation capacity. This section applies a diagnostic framework to assess feasibility across the four pillars of fiscal space, financial depth, institutional quality and innovation capacity. It also links a set of observable indicators to two key questions. One, what do these indicators signal about capacity? Two, how should they shape policy choice? This ensures that the strategic road maps in section 3.5 are actionable rather than aspirational.

Figure 3.23 summarizes the feasibility framework for policy selection, with each pillar assessed using a small set of indicators. It identifies binding constraints that determine which instruments are realistically deployable rather than ranking countries or policies. High feasibility expands the menu of viable instruments, including complex, market-based or enforcement-intensive policies. Lower feasibility narrows options, indicating where governments should rely on simpler design, revenue-neutral reforms, external concessional finance or direct public provision. The framework applies a binding-constraint principle: a single constrained pillar can render certain instruments impractical even when other pillars are strong. Feasibility therefore operates as a filter on instrument choice rather than a ranking of overall performance. The table defines each pillar, the indicators used to assess it, and the implications for instrument choice, while country thresholds and ratings are discussed in the chapter 3 technical appendix, section 3.2.

Figure 3.23. The macroeconomic feasibility diagnostic framework



Source: ESCAP based on IMF Government Finance Statistics (GFS), World Bank World Development Indicators (WDI), the UNCTAD Technology and Innovation Report (UNCTAD, 2025) and WIPO (2024).

Note: (1) Detailed benchmarking methodology, indicator definitions, thresholds, sources and country-level indicator assessments are provided in the chapter 3 technical appendix, section 3.2. (2.) Indicators should be interpreted jointly, as a single low-feasibility pillar can become binding for specific instruments. (3.) The framework captures technical and administrative feasibility.

Feasibility conditions are only one dimension of implementation. Reforms can still be slowed or reversed by vested interests, institutional inertia and behavioural resistance. Chapter 4 therefore complements this diagnostic by analysing political economy and behavioural dynamics that shape uptake, compliance, and durability.

3.5. Suitable policies: strategic road maps

Strategic road maps should be built on country-level diagnostics to identify a suitable policy mix. By cross-referencing a country's policy goals (section 3.2) with its feasibility profile (section 3.4), policymakers can prioritize the policies (section 3.3) that are actionable and avoid instruments that are premature or high-risk under binding constraints. This integration defines what can be credibly pursued in each national context.

With this development-first framing in mind, the road maps below translate diagnostics into action. They apply to groups of economies that share similar structural characteristics and feasibility profiles, and country cases are used to illustrate operationalization rather than provide templates. Policymakers should use granular domestic data to refine instrument design, prioritization and financing choices. Once a road map is selected, chapter 4 provides tools to support delivery, including scenario modelling to quantify trade-offs and distributional impacts, political economy analysis to manage coalition and justice risks, and behavioural insights to strengthen uptake and compliance.

3.5.1. National strategic road maps

Figure 3.24 summarizes three national strategy archetypes aligned to distinct feasibility profiles and priority instrument bundles. The archetypes are defined primarily by feasibility profiles rather than by the nature of the transition goal. Economies with similar structural goals may follow different strategies if their fiscal, financial, institutional or technological capacities differ. Strategy A manages the exit from fossil fuels under tight fiscal space, strategy B scales green growth and competitiveness where feasibility is high, and strategy C builds foundational access where institutional and technological constraints are binding. Across all archetypes, policies and finance are most durable when they expand affordable, reliable low-carbon energy services and visible social and economic gains (see box 3.17).

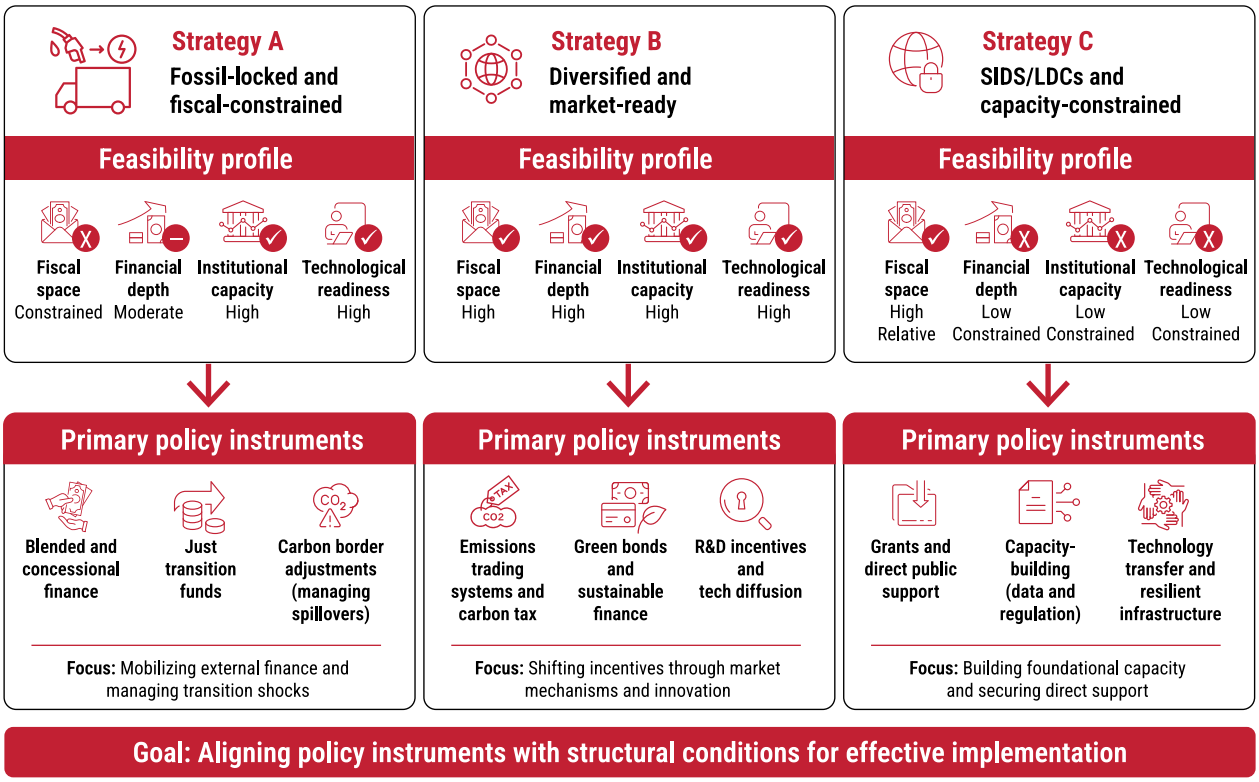
Box 3.17. The transition to an environmentally sustainable economy as a capability-enhancing development strategy[a]

Actions to reduce carbon emissions deliver durable results when they are designed and assessed as development finance, not as stand-alone mitigation. The key imperative is prioritization: capability-enabling investments, including energy access, reliable services, productive assets and public services, should be prioritized before pursuing the largest possible emissions reductions.

Statistical results indicate that weak institutions magnify the development trade-offs of carbon-reducing measures, while social welfare, livelihood and education co-benefits are more likely when carbon actions are linked to service delivery rather than emissions metrics alone. Accordingly, instruments such as green bonds, carbon markets and blended finance should be tied to expanding and upgrading low-carbon energy services that enable industrial activity, small enterprises and social infrastructure. Politically, pricing and subsidy reforms are most feasible when paired with visible improvements in affordability, reliability and access.

[a] Source: UNIDO SRO (2026).

Figure 3.24. National strategic road maps: matching policy ambition with implementation feasibility



Source: ESCAP.

Note: Tick (✓) icons indicate high feasibility; Dash (–) icons indicate moderate feasibility; Cross (X) icons indicate low or constrained feasibility. The three strategic road maps are defined by the specific interplay of the feasibility pillars: (1) Strategy A: Characterized by low or constrained fiscal space and moderate to high monetary and financial depth, supported by sufficient institutional capacity and technological readiness (typically rated moderate or high). This profile typically represents fossil-fuel-reliant economies where the priority is managing a stable exit from high-carbon industries through sophisticated regulatory and market-based mechanisms, while pairing reforms that affect prices with visible affordability, reliability and access gains (box 3.17). (2) Strategy B: Represents a high-feasibility profile where all four pillars are strong. Countries in this category have the strategic latitude to deploy a comprehensive suite of market-led, fiscal and regulatory instruments to scale green growth and international competitiveness, with investment choices framed around productivity and welfare gains alongside emissions reductions (box 3.17). (3) Strategy C: Defined as an institutional-first profile where fiscal space is relatively high (often supported by official development assistance), but financial depth, institutional capacity and technological readiness are low or constrained. The road map for this profile focuses on building foundational access and the basic regulatory architecture required to attract long-term investment, with a service-delivery focus to expand affordable and reliable low-carbon energy access (box 3.17).

These road maps are policy envelopes shaped by feasibility and impact considerations rather than menus of optional interventions, and the country cases are illustrative rather than prescriptive. The sections that follow operationalize each archetype through country examples and tailored packages, highlighting how instrument choice, sequencing and financing should be adapted to binding constraints. Country groupings are derived from the pillar ratings in the chapter 3 technical appendix, section 3.2 using a binding-constraint approach. They are presented in the chapter 3 technical appendix section 3.3 as indicative guidance rather than a definitive classification.[2] That section also contains a detailed methodology.

[2] While the three primary archetypes represent the dominant feasibility profiles in the region, the framework also identifies "hybrid" variants (see chapter 3 technical appendix, section 3.3). These cater to economies that broadly align with a specific strategy but face a single, unique binding constraint, such as limited financial depth or lagging technological readiness, that requires a more phased or simplified implementation of the core policy bundle.

Strategy A: Managing macroeconomic exposure under tight fiscal constraints

This strategy applies where fiscal space is the binding constraint on policy implementation and where macroeconomic exposure to fossil fuel systems remains significant. In these contexts, the central focus is on containing fiscal risks, managing stranded asset exposure, and correcting price distortions in a manner that preserves macroeconomic stability. The strategy reflects binding fiscal constraints combined with fossil dependence, rather than a singular objective.

All countries in this profile pursue multiple transition goals, but fossil-exit measures require careful sequencing because fiscal exposure is the primary binding constraint shaping instrument choice.

Although fossil dependence may be a prominent structural feature, this strategy is defined by feasibility conditions rather than a single transition goal. Other objectives, such as scaling renewables or improving efficiency, may also be pursued, but the sequencing is shaped by tight budget constraints and risk-management considerations.

Table 3.8 summarizes the feasibility profile and priority instrument bundle for this strategy. Indonesia is used as an illustrative example. The road map can be applied where fiscal space is the binding constraint even when institutions and finance remain supportive. It can be adapted across countries with similar feasibility conditions.

Given the fiscal constraints, capital-intensive policies that rely on public balance sheets are typically unsuitable as first movers. Priority entry points include fossil fuel subsidy reform to correct price signals without large new spending, complemented by gradual carbon pricing where revenues are recycled to protect vulnerable groups and manage competitiveness pressures. Where institutional capacity is strong, transition finance taxonomies that include amber categories[3] can steer banks and corporations toward managed retirement and retrofitting without direct public liabilities. Blended finance mechanisms, including energy transition facilities, can then leverage external concessional resources – favourable financing terms – to bridge viability gaps for early coal retirement that would otherwise be difficult to underwrite domestically.

[3] Amber categories refer to transitional economic activities that are not yet fully aligned with long-term sustainability objectives but are considered necessary steps in shifting high-emission sectors towards lower-carbon pathways.

Strategy B: Scaling systemic transition under strong feasibility conditions

This strategy applies where none of the three feasibility pillars constitutes a binding constraint, meaning institutional capacity, financial depth and technological feasibility are sufficiently strong to support broad instrument choice and flexible sequencing. Under these conditions, governments can design mutually reinforcing reform packages across markets, finance and industry, with sequencing determined by systemic impact rather than capacity limitations.

Although economies following this strategy may prioritize renewables expansion or efficiency upgrading, the defining feature is implementation capacity rather than the transition goal itself. Strong feasibility conditions allow sequencing on the basis of effectiveness and systemic impact rather than capacity gaps.

Table 3.8. Indonesia's feasibility assessment and suitable policies

Feasibility pillar	Assessment	Implications	Suitable policies (strategy A)
1. Fiscal space	Low/ constrained	Limited room for large public CAPEX; need revenue-neutral or externally financed tools.	Fossil fuel subsidy reform; gradual carbon tax/ pricing with revenue recycling for social protection and competitiveness.
2. Monetary and financial system	Moderate	Some depth for green tools; needs guidance to steer credit.	Transition taxonomies to define "amber" activities; blended finance/ETM-style structures for early coal retirement.
3. Institutional capacity	High	Can design and enforce relatively complex instruments.	Carbon pricing framework (tax or ETS pilots) with measurement, reporting and verification (MRV); transition taxonomy regulation and just-transition plans.
4. Technological readiness	High	Can adopt cleaner technologies quickly once incentives are aligned.	Green industrial/technology-upgrade incentives; targeted grid modernisation (phased, blended-finance/PPP-enabled under low fiscal space); taxonomy-aligned lending/ETM-style de-risking to crowd in private capital.

Source: ESCAP.

Note: Assessments are derived from the standardized indicators and thresholds established in the macroeconomic feasibility diagnostic framework in section 3.4.

Table 3.9 summarizes the feasibility profile and priority instrument bundle for this strategy. Thailand is used as an illustrative example.

With no binding constraints, the policy package can be structured as mutually reinforcing reforms across markets, finance and industry. Capital mobilization can be accelerated through corporate and sovereign green bonds where deep markets support dedicated transition finance. Green industrial policies can scale priority supply chains, such as electric mobility and energy storage, while strong technological feasibility enables a shift away from technology adoption towards domestic innovation and export competitiveness. High institutional capacity also makes compliance-intensive schemes feasible, including carbon pricing and emissions trading systems supported by robust monitoring, reporting and verification systems. The principal risk in this profile is underutilization rather than infeasibility.

Table 3.9. Thailand's feasibility assessment and suitable policies

Feasibility pillar	Assessment	Implications	Suitable policies (strategy B)
1. Fiscal space	High	No binding fiscal constraint; can co-finance transition.	Green industrial policy (tax incentives, production support) for EVs, batteries, supply chains; guarantees/viability gap funding (VGF) for grid and storage.
2. Monetary and financial system	High	Deep markets allow sophisticated, market-based tools.	Sovereign and corporate green bonds; expansion of green lending/sustainability-linked loans.
3. Institutional capacity	High	Can run compliance-heavy schemes.	Mandatory ETS with MRV; comprehensive green/transition taxonomies; strong governance for green value chains.
4. Technological readiness	High	Able to move from adoption to innovation and export.	Green industrial policy (production incentives) including R&D and cluster policies for EVs, batteries, grid modernisation (smart grids); support for innovation ecosystems (skills, digital, R&D).

Source: ESCAP.

Note: Assessments are derived from the standardized indicators and thresholds established in the macroeconomic feasibility diagnostic framework in section 3.4.

Table 3.10. Solomon Islands' feasibility assessment and suitable policies

Feasibility pillar	Assessment	Implications	Suitable policies (strategy C)
1. Fiscal space	High (relative; ODA-dependent)	Can invest when backed by concessional finance; projects must stay affordable.	Public grid/mini-grid CAPEX, connection subsidies, funded by domestic resources plus ODA/climate finance with affordability safeguards.
2. Monetary and financial system	Low/ constrained	Shallow markets; complex capital-market tools not realistic.	Blended/inclusive green finance, e.g. micro-credit for solar home systems and off-grid solutions, via public banks/NGOs.
3. Institutional capacity	Low/ constrained	Limited capacity for complex schemes.	Simple tariffs and grants, basic green budget tagging, avoid ETS/taxonomy/R&D schemes that are admin-heavy.
4. Technological readiness	Low/ constrained	Focus on adopting proven tech, not developing it.	Technology transfer of solar, mini-grids, mini-hydro; training for local technicians rather than R&D incentives.

Source: ESCAP.

Note: Assessments are derived from the standardized indicators and thresholds established in the macroeconomic feasibility diagnostic framework in section 3.4.

Strategy C: Expanding foundational capacity under binding institutional constraints

This strategy applies where institutional capacity, financial depth or technological feasibility constitute binding constraints on policy implementation. The defining feature of this profile is limited implementation capacity rather than a single transition goal. Policy sequencing therefore prioritizes foundational system-building measures that strengthen delivery institutions, regulatory frameworks and financial intermediation before more complex market-based instruments can be deployed at scale.

Assignment to this strategy reflects binding delivery and institutional constraints rather than overall performance across all feasibility pillars, and placement should be interpreted to be dynamic as implementation capacity evolves.

The road map prioritizes foundational investment to close access and reliability gaps. It relies on concessional finance where domestic bankability is limited and works with development partners and private providers where viable. Instruments should be simple and administratively feasible, such as basic tariffs and targeted grants, combined with public or utility-led grid extensions, mini-grids and connection support. Inclusive green finance ecosystems, such as microcredit for solar home systems and clean cooking, can expand access without relying on deep capital markets. Technology transfer of proven off-grid solutions and training for local technicians can deliver rapid deployment and immediate well-being gains while avoiding premature adoption of complex market- or innovation-led instruments.

The three strategy archetypes are defined by feasibility conditions rather than transition goals alone. Economies that share similar structural transition pressures may therefore follow different strategic road maps depending on their fiscal space, financial depth, institutional quality and technological readiness. Conversely, economies pursuing different transition goals may adopt similar sequencing strategies if their binding constraints are comparable.

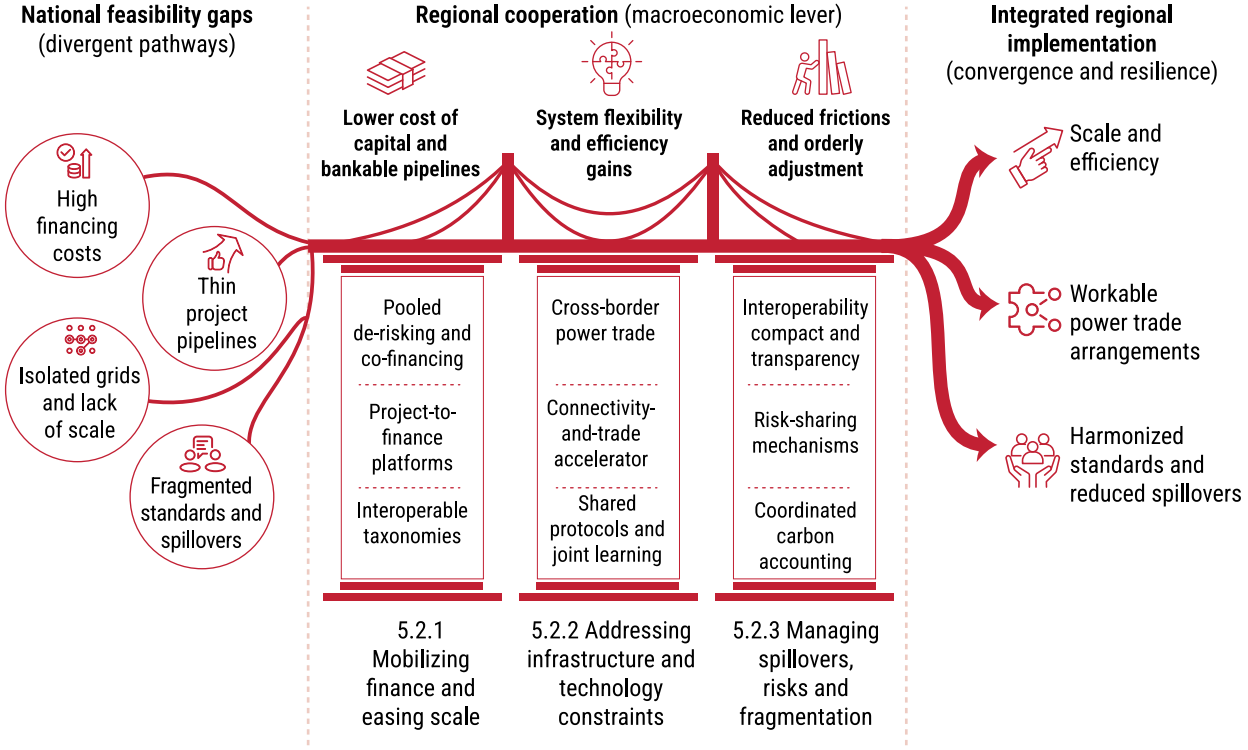
3.5.2. The regional imperative: from fragmentation to integrated implementation

Regional cooperation can be an economic lever for bridging national feasibility gaps as transition pathways diverge in Asia and the Pacific. Clean energy investment in emerging markets and developing economies remains concentrated in a small number of markets, while the cost of capital is materially higher in many others, narrowing the range of nationally feasible instruments even where policy intent is strong (IEA, 2023). In South-East Asia, thin project pipelines and high perceived risks continue to keep low-emissions power investment below the announced targets (IEA, 2025a).

The region also forgoes scale and efficiency gains where coordination mechanisms have not yet matured from pilots into operational regional systems. Cross-border power system integration can lower the cost of renewable integration through wider balancing areas and stronger coordination of operations and planning. However, progress in interconnection and power trading remains limited relative to its potential in parts of the region (ACE, 2025a, 2025b). In parallel, fragmented transition finance standards and uneven transition-plan disclosure practices raise transaction and compliance costs and reduce comparability across jurisdictions (NGFS, 2022). A more diagnostic regional agenda therefore focuses on a small number of high-leverage initiatives that lower the cost of capital through improved bankability and de-risking. It also aims to unlock system flexibility through workable power trade arrangements and to improve interoperability in taxonomies, disclosure and carbon accounting to reduce cross-border frictions and spillovers (UNCTAD, WTO, OECD, IMF and World Bank, 2024). Figure 3.25 shows how regional cooperation can bridge the binding feasibility constraints identified in Section 3.4.

While Section 3.5.1 focused on national feasibility conditions and strategy profiles, regional cooperation can relax binding fiscal, financial, institutional and technological constraints and expand the set of implementable instruments across all strategy archetypes.

Figure 3.25. The regional imperative: bridging national feasibility gaps through integrated implementation



Source: ESCAP.

3.5.2.1. Mobilizing finance and easing scale constraints

A primary barrier to implementation is the difficulty of translating national transition priorities into bankable pipelines at an affordable cost of capital. In South-East Asia, the IEA identifies the high cost of capital and the limited project pipelines as binding constraints and estimates that getting on track towards announced targets would require a substantial scale-up of low-emissions power investment (IEA, 2025a). This reflects a broader feasibility challenge in emerging markets and developing economies where capital is not priced or structured to match transition needs at scale, which narrows the set of implementable national policy packages even when priorities are well defined (IEA & IFC, 2023). Although the intensity of this constraint varies across strategy profiles, access to affordable capital remains a relevant feasibility enhancer even for economies with otherwise strong institutional and technological capacity.

Regional cooperation can close the "bankability gap" by scaling project preparation and de-risking through pooled platforms, with the ASEAN Catalytic Green Finance Facility (ACGF) serving as an operational example. Cambodia's Energy Transition Sector Development Program illustrates how regional platform support can combine technical assistance with co-financing to support implementation and subsequent phases (ASEAN Infrastructure Fund, 2025). At the programme level, the Green Climate Fund's FP156[4] positions the ACGF as a regional "green recovery" programme intended to catalyse larger pools of climate finance across participating countries (Green Climate Fund, 2021). Interoperability is the second leverage point. Variation in transition finance and disclosure practices increases due diligence costs and limits comparability (NGFS, 2022). The ASEAN taxonomy work demonstrates a pathway for improving usability and comparability while accommodating different starting points (ASEAN Taxonomy Board, 2024).

Taken together, a regional function could operate as a project-to-finance platform that standardizes project preparation and documentation,

[4] FP156 refers to the Green Climate Fund funding proposal approving support for the ASEAN Catalytic Green Finance Facility as a regional programme to mobilize climate-aligned infrastructure investment.

expands pooled de-risking and co-financing windows, and strengthens taxonomy and disclosure interoperability. Doing so would make finance a feasibility enhancer rather than an implementation bottleneck.

3.5.2.2. Addressing system-level infrastructure and technology constraints

System-level constraints such as small market size, geographic dispersion and variability in renewable supply can raise the cost of flexibility and slow down renewable integration even when domestic policies are well designed. Effective cross-border integration can deliver system benefits through coordinated operations, long-term planning and appropriate regional institutional arrangements, supporting more secure and cost-effective power system transformation (IEA, 2019). As mentioned in Section 3.2, achieving an integrated South-East Asian transmission network by 2045 is estimated to require US$800 billion in total investment but would substantially lower the cost of renewable integration through wider balancing areas and shared flexibility (World Bank, 2025d). These system-level constraints may be most restrictive for economies with limited domestic flexibility, but even high-feasibility economies face coordination challenges that benefit from regional institutional arrangements.

Regional action becomes most catalytic when it focuses on the operational arrangements that make cross-border trade workable at scale, including settlement and cost-sharing. Initiatives such as the ASEAN Power Grid Financing effort aim to mobilize funding to expand and integrate national grids. However, scaling these initiatives requires investable interconnection planning alongside interoperable technical standards and workable trading, settlement and cost-sharing rules (World Bank, 2025d; ASEAN Centre for Energy, 2025b). A focused connectivity-and-trade accelerator can therefore prioritize these operational prerequisites while complementing them with shared technical protocols and joint learning platforms. This would reduce learning costs and implementation risks for smaller or lower-capacity systems, thereby lowering unit costs of transition for participating economies (IEA, 2019).

3.5.2.3. Managing spillovers, risks and policy fragmentation

Divergent transition strategies generate cross-border spillovers that can raise adjustment costs and undermine macroeconomic stability when policies differ in timing, stringency and instrument choice. Mitigation policies, especially carbon pricing and related measures, create spillovers and competitiveness concerns, strengthening the case for coordinated approaches that manage cross-border effects (UNCTAD, WTO, OECD, IMF and World Bank, 2024). Because strategy profiles differ in their macroeconomic exposure to fossil revenues, energy import dependence and competitiveness pressures, the nature of spillovers and adjustment risks also varies across countries.

Regional cooperation can reduce these costs by improving transparency and interoperability rather than enforcing uniformity, while strengthening risk-sharing for shocks that propagate through trade, finance and energy markets. Fragmentation in transition finance criteria and uneven transition-plan disclosure practices increase transaction costs and complicate capital allocation decisions across jurisdictions (NGFS, 2022). A focused interoperability and spillover-management compact can strengthen comparability in taxonomies, disclosure and carbon accounting and support more orderly adjustment, while preserving national autonomy in instrument design and sequencing. Such a compact would improve the region's capacity to manage spillovers linked to carbon pricing and border measures (UNCTAD, WTO, OECD, IMF and World Bank, 2024).

3.6. Conclusion

Supporting socioeconomic prosperity amid the transition to an environmentally sustainable economy, with a focus on energy transition, requires fiscal, monetary and financial policies to pivot from merely facilitating green projects to actively driving structural transformation. This chapter has demonstrated that the transition is not an environmental add-on but a fundamental shift in the region's development approach. By integrating environmental sustainability and energy transition objectives into core macroeconomic policymaking, governments can secure socioeconomic prosperity by maintaining macroeconomic stability against climate and energy shocks, unlocking new drivers of sustainable economic growth, and ensuring well-being through equitable access.

While an overly rapid transition can impose short-run costs as discussed in chapter 2, delaying action increases the risk of more disruptive and costly adjustment. The feasibility diagnostic helps prioritize and design reforms to match ambition with capacity and manage this trade-off.

This chapter highlights that structural transition goals and feasibility-based implementation pathways must be analytically distinguished. While many economies face overlapping pressures to reduce fossil dependence, scale renewables, improve efficiency and expand access, the appropriate sequencing and instrument mix depends on binding fiscal, financial, institutional and technological constraints.

While road maps involve near-term trade-offs and must remain politically feasible, delays increase the risk of disorderly adjustment, including stranded assets in fossil-locked economies, fiscal stress in revenue-dependent countries, and competitiveness losses as global markets shift toward low-carbon standards. The strategic imperative is therefore to prioritize and sequence reforms proactively, using the feasibility diagnostic to match ambition with capacity rather than waiting for shocks to force abrupt correction.

Feasibility is not a static constraint but a dynamic variable that governments can expand. Institutional and financial gaps currently limit the deployment of sophisticated market mechanisms in many economies. This is not a signal to lower ambition but a call to invest in foundational capacity. Strengthening carbon monitoring systems, building regulatory expertise for green and transition taxonomies and transition planning, improving public financial management, and deepening local capital markets are prerequisites for mobilizing larger pools of transition finance and deploying more efficient policy tools.

Regional cooperation can close feasibility gaps by converting national priorities into bankable pipelines, making cross-border power trade operational at scale, and improving interoperability in taxonomies, disclosure and carbon accounting to reduce spillovers. Fragmented coordination makes national road maps costlier and slower. Priorities therefore include project-to-finance functions and pooled de-risking, investable interconnection planning with workable trading, settlement and cost-sharing arrangements, and interoperability measures that reduce cross-border frictions.

Policy implementation should move beyond aggregate metrics to address distributional impacts across regions, sectors, firm sizes and gender differences. Transition risks are often spatially and socially concentrated, and small and medium-sized enterprises and informal workers frequently have limited buffers to adapt. The fiscal and financial tools discussed in this chapter should therefore be paired with targeted upskilling and social protection measures to support affected workers and communities, ensuring that the pursuit of prosperity does not exacerbate existing inequalities.

Turning these strategic road maps into reality requires sustained attention to the implementation architecture. Chapter 4 builds on this analysis by focusing on execution choices, coordination mechanisms and political economy considerations that can help translate feasibility-based strategies into sustained action.


Photo: adobe stock/Marcin Jucha

Chapter 4

Socioeconomic prosperity amid the transition to an environmentally sustainable economy: policy implementation

4.1. Introduction

Macroeconomic policies to support the energy transition to an environmentally sustainable economy inevitably involves trade-offs – between short-term costs and long-term gains, across social groups and economic sectors, and among key policy objectives such as climate ambition, energy security, economic growth, macroeconomic stability and social well-being. These trade-offs are particularly complex because the costs and benefits of the transition are unevenly distributed. Transition costs, such as job losses in coal mining, revenue declines in fossil fuel-dependent countries, and rising household and industrial energy prices, are often concentrated in vulnerable communities. Meanwhile, the benefits of clean energy, such as improved air quality, new industries and green jobs, tend to be diffuse and delayed, accruing largely to urban and well-connected regions. These asymmetries increase political sensitivity and raise the stakes of policy adoption.

These distributional dynamics help explain why transition-related economic policies are adopted unevenly across countries. While chapter 3 outlines a suite of priority fiscal, monetary and financial policy options to support socioeconomic prosperity amid the transition, their uptake – in practice – depends heavily on technical, institutional and political conditions. Some instruments, such as transition finance taxonomies or managed phase-out mechanisms, require specialized expertise, strong regulatory and enforcement capacity, reliable data systems and detailed regulatory frameworks that many developing economies have yet to build. Others, including fossil fuel subsidy reform and carbon pricing, are less constrained by technical feasibility than by uncertain trade-offs, distributional impacts, vested interests and political dynamics that make adoption risky or politically costly. These adoption challenges echo the implementation realities that condition many of the instruments discussed in chapter 3, highlighting the need for credible delivery pathways.

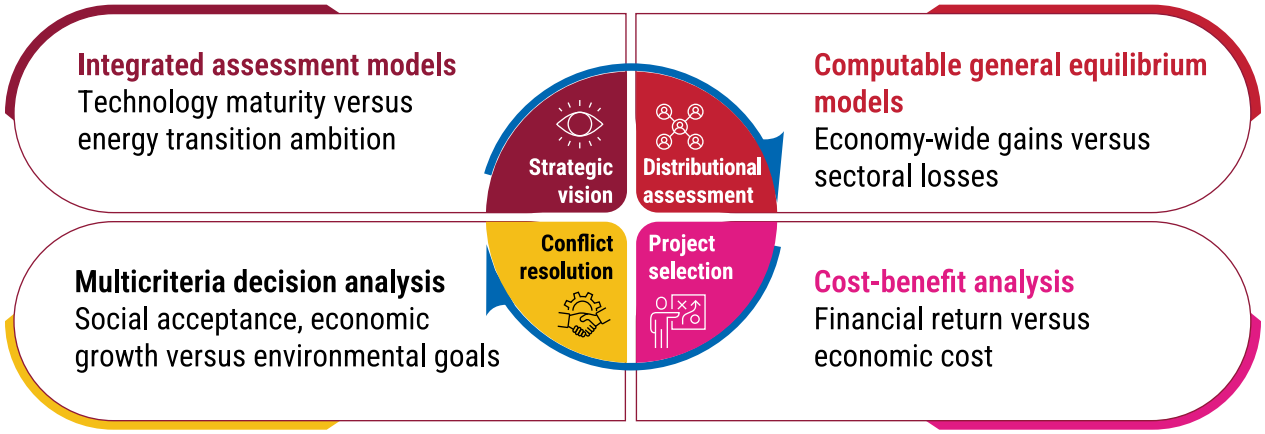
Implementation outcomes therefore depend on political, technical and institutional realities, not economic design alone. Across Asia and the Pacific, governments must navigate constraints such as limited administrative capacity, fragmented governance arrangements and weak coordination. At the same time, equity and fairness concerns influence public acceptance, while existing incentive structures affect how institutions and stakeholders respond once reforms are introduced.

Effective implementation starts with a clear understanding of the required policy trade-offs and their economy-wide effects. Long-term integrated scenario approaches allow policymakers to assess how policy packages interact across macroeconomic, sectoral and distributional dimensions. By revealing synergies and potential conflicts, data-driven scenario planning can support coherent sequencing, align transition policies with national development objectives and reduce the risk of unintended social consequences. Cross-ministerial coordination, particularly among energy, finance, trade, environment and transport authorities, helps translate these insights into consistent policy action.

Political economy considerations and behavioural approaches can further strengthen implementation by addressing barriers that analytical tools alone cannot resolve. Political economy analysis helps governments identify who gains, who loses and which institutions or interests may block reform. Behavioural science can explain why households, firms and investors do not always respond to prices and information and offer practical tools to improve policy uptake. Together, political economy and behavioural science can help close the gap between policy intent and real-world outcomes.

Against this backdrop, this chapter translates policy options into implementation through three complementary approaches. It examines how governments can: (i) anticipate and assess trade-offs using analytical tools; (ii) apply a political economy lens to manage vested interests and institutional constraints; and (iii) use behavioural insights to improve uptake and close last-mile implementation gaps. Drawing on country experiences from across Asia and the Pacific, the chapter highlights practical pathways for turning the strategic road maps and policy priorities identified in chapter 3 into effective, durable, socially supported and politically feasible outcomes.

Figure 4.1. Analytical tools for integrated scenario planning



Source: ESCAP.

4.2. Integrated scenario planning

The transition to an environmentally sustainable economy, focusing on the energy sector, involves complex trade-offs and synergies that require integrated policy assessment. Economic policies for this purpose interact across sectors, time horizons and social groups, often creating tensions that cannot be resolved through single-instrument analysis. Without an integrated and forward-looking approach, these interactions risk producing unintended consequences that erode political support and complicate implementation.

Systematic assessment can help policymakers anticipate trade-offs and identify potential synergies to support policy adoption. Integrated analytical tools can enable governments to examine how different policy choices, such as carbon pricing, subsidy reform or renewable energy investment, interact with economic growth, inflation, fiscal space, financial stability and energy affordability. By revealing where objectives reinforce or conflict with one another, early assessment reduces adoption risks and supports more coherent policy design (fig. 4.1).

Crucially, integrated scenario planning creates a platform for early engagement among fiscal, energy and environmental authorities, as well as with affected stakeholders. Joint interpretation of evidence enables policymakers to confront trade-offs collectively, manage distributional tensions proactively and build consensus around sequencing and complementary measures. When embedded in institutional coordination mechanisms, this approach strengthens accountability and helps balance short-term political pressures with long-term development objectives, setting the stage for the political economy considerations discussed in the following section.

4.2.1. Long-term planning using integrated assessment models

Integrated assessment models (IAMs) can help policymakers understand how achieving long-term transition objectives, such as the 1.5°C or 2°C climate targets, creates trade-offs across economic growth, emissions reductions and sectoral transitions over multiple decades (UNFCCC, 2025)**.**[1] IAMs can take into account declining costs of low-carbon technologies based on accumulated experience and investment, which enable policymakers to assess pathways in which early and coordinated action makes an environmentally sustainable economy competitive over the long term.

IAMs have been adopted in several Asian and Pacific countries to translate long-term objectives into national road maps. Using an IAM to simulate interactions among energy, water, land and the economy in India, one study identified two critical policy implications for achieving net-zero emissions. First, accelerating the transition to an environmentally sustainable economy requires eliminating electricity pricing

[1] For a detailed discussion of the model and its technical specifications, see chapter 4 technical appendix, section 4.1.1.

distortions between industrial and residential consumers, as higher industrial tariffs currently discourage the electrification of industrial energy use. Second, meeting the projected requirement of approximately 7,500 GW of solar capacity could occupy up to 6% of India's land area by 2100, underscoring the need for mandated land co-location strategies to mitigate land-use conflicts alongside macroeconomic policy measures (Chaturvedi and Malyan, 2022).

Beyond national aggregates, IAMs are also increasingly being used to reveal granular sectoral trade-offs and unintended consequences at the subnational level. Policies that appear efficient nationally can create localized distortions or uneven burdens. In the Republic of Korea, a provincial-level application of IAM[2] revealed inter-sectoral trade-offs. Simulating a tax on coal-fired power generation reduced power sector emissions but inadvertently increased coal consumption in the steel industry by raising electricity prices, creating uneven impacts across industrial provinces (Jeon, Roh and Kim, 2021).

However, building a national IAM from scratch requires resources and expertise that are beyond the reach of many developing countries. For many economies, partnerships with institutions hosting established IAMs offer a more feasible approach. Through international collaboration, countries can access sophisticated scenario analysis while gradually developing domestic modelling capacity (box 4.1).

4.2.2. Assessing sectoral and distributional impacts

Computable general equilibrium (CGE) models and microsimulation can complement IAMs by providing detailed sectoral and distributional impact assessments that long-term integrated models cannot capture (OECD, 2024).[3] IAMs lack the granularity to assess how economic policies affect individual industries, income groups or regions in the near- and medium term. CGE models and microsimulation fill this gap by tracing how costs and benefits are shared across economic sectors and across households by income, gender and location (box 4.2).

CGE models are particularly useful for evaluating sector-specific economic impact. In China, a CGE model has been used to assess green credit policies targeting energy-intensive industries such as chemical, paper and cement, and quantifies the systemic effects of applying a higher interest rate (2 percentage points higher) to these sectors. One study showed that, in the medium term, this policy reduced commercial bank loans to targeted sectors by 6.92 billion yuan (roughly $1 billion), causing real investment in the chemical and paper industries to contract by approximately 0.24% and 0.29% respectively (Liu and others, 2017).

CGE models are also valuable for tracking the emerging structural shocks that can rapidly alter energy demand patterns. For example, a recent application of a CGE[4] model assessed the impact of the rapid expansion of artificial intelligence (AI)-driven data centres in China by 2030. It projected data centre electricity demand growth of around 10% per year and an increase in electricity prices of 5.3% by 2030. This study also evaluated policy responses, showing that strong pro-renewable measures, such as targeted feed-in tariffs, could offset up to 166 TWh of potential coal-based power generation (Bogmans and others, 2025).

Microsimulation complements CGE analysis by examining distributional impacts at the household level. It also demonstrates that protecting vulnerable households can be fiscally feasible.

Beyond income effects, microsimulation provides granular evidence on labour-market transitions, enabling policymakers to anticipate sector-specific employment risks during the transition to an environmentally sustainable economy. A study from New Zealand used worker-level data to simulate job shifts under various emissions pathways, indicating that specific sub-sectors in manufacturing could face employment contractions of 30–35%, signalling an urgent need for targeted retraining programs in those industries (Riggs and Mitchell, 2021).

[2] Global Change Assessment Model (GCAM-Korea).

[3] For a detailed discussion of the model and its technical specifications, see chapter 4 technical appendix, section 4.1.2.

[4] IMF-ENV, a global dynamic computable general equilibrium model developed by the International Monetary Fund's Research Department.

Box 4.1. The Asia-Pacific integrated model (AIM): supporting decarbonization policy through evidence-based analysis

Japan: charting a path to carbon neutrality

To support Japan's 2050 carbon neutrality target, the National Institute for Environmental Studies (NIES) developed an Asia-Pacific integrated model (AIM), combining macroeconomic projections, sectoral technology choices and power system planning. This integrated structure shows how changes in industry, energy demand and electricity supply interact over time.

One study explored two net-zero pathways using AIMs: a "technology" pathway based on efficiency, electrification, renewables and carbon capture, and a "technology + social transformation" pathway that assumed reduced demand (15% lower carbon-intensive industrial production and 20% lower transport activities by 2050) (Hibino and others, 2022).

The analysis revealed evolving energy security dynamics. Domestic renewables will increase Japan's energy self-sufficiency from 15% to over 70% by 2050, but imported low-carbon fuels remain necessary, accounting for around 30% of hydrogen and synthetic fuels and all ammonia for power generation. Decarbonization therefore shifts, rather than eliminates, strategic dependencies.

By quantifying these cross-sector impacts, AIM provides policymakers with a transparent view of trade-offs: higher upfront investment needs and infrastructure scaling versus long-term emission reductions, improved air quality and energy resilience. AIM suggests that Japan can achieve net-zero without GDP losses if the right mix of technologies and demand-side measures is sequenced appropriately. Insights from AIM have provided a quantitative basis for hydrogen policies and sectoral road maps for power, transport and buildings.

Thailand: supporting climate commitments through partnership

Since 2000, the NIES has partnered with Thammasat University to build local capacity to use the AIM. Thailand now applies tailored versions of AIM to inform its targets for carbon neutrality and net-zero emissions by 2050.

Scenario analysis using AIM/Hub-Thailand highlights the trade-offs between economic growth, investment needs and emission reductions.

A recent study compared three pathways: business-as-usual (BAU), achieving the NDC[a] target and reaching net-zero by 2050. Achieving net-zero could reduce GDP by 2.2% in 2030 and 8.5% by 2045, with carbon pricing rising from $2.2 per ton in 2025 to $308.9 by 2040. Investment beyond BAU totals $205 billion for the NDC and $410 billion for net-zero (2005 prices) (Chaichaloempreecha and others, 2024).

The model reveals the social and energy security benefits that alter the perceived costs of climate action. The health and economic damages from PM2.5 air pollution are substantial, with estimates suggesting costs equivalent to roughly 6% of Thailand's annual GDP. Under a net-zero scenario, emissions of black carbon, carbon monoxide and nitrogen oxides would decline by 20%, 17% and 41%, respectively, generating significant social benefits. Energy security also improves, as import dependence declines to 71% under net-zero and to 48% if biomass is sourced domestically.

[a] Nationally determined contributions - voluntary, country-specific climate action plans submitted under the Paris Agreement to reduce greenhouse gas emissions and adapt to climate change.

4.2.3. Quantitative economic evaluation: cost-benefit analysis

Cost-benefit analysis (CBA) offers a direct economic benchmark, in monetary terms, for evaluating policies, complementing the long-term systems perspective provided by IAMs. In essence, IAMs help answer the question "what could happen under different scenarios?", whereas CBA focuses on "is a particular policy worth implementing, and which instruments deliver the greatest net economic benefit?"

CBA can quantify the economic value of specific transition instruments.[5] In the context of energy transition, CBA can evaluate measures such as carbon taxes or renewable energy subsidies by monetizing benefits, like avoided climate damages measured through the social cost of carbon against costs such as potential GDP losses or higher energy prices (Mandell, 2013).

CBA is mostly used for project appraisal and investment decisions at the project level. International financial institutions like the Asian Development Bank and the World Bank routinely require rigorous ex ante CBA to validate loan approvals, as seen in the case of Maldives' grid-scale storage project (ADB, 2023) and Mongolia's first utility-scale battery system (Global Green Growth Institute, 2020). Both cases quantified avoided diesel costs and stability benefits to justify renewable integration. In India, the World Bank (2022) has conducted counterfactual analysis to compare solar park expansion against a "thermal-only" baseline, monetizing avoided coal generation and transmission losses.

Beyond initial approval, CBA analyses are increasingly being used to enforce accountability and guide adaptive management throughout the project lifecycle. Since 2002, Japan has mandated that public infrastructure projects undergo CBA not only prior to adoption but again every three to five years. This periodic review process allows the government to reassess project necessity, verify whether projected benefits are materializing, and identify potential cost reductions, including project cancellation in cases of significant cost escalation (Toyama and Sagara, 2017).

4.2.4. Evaluating trade-offs across multiple objectives: multicriteria decision analysis

Given that policy trade-offs sometimes cannot be fully expressed in monetary terms, multicriteria decision analysis (MCDA) serves as a valuable tool for comprehensive policy evaluation. MCDA can provide a structured framework for assessing options across multiple – often conflicting – criteria, using both quantitative indicators and qualitative judgments.[6] It explicitly recognizes that policymakers must balance economic efficiency, social equity and environmental effectiveness based on value judgments about their relative importance.

Effective MCDA implementation requires inclusive stakeholder engagement and transparent processes, as policy trade-offs are inherently shaped by political and institutional contexts. A review of Viet Nam's resource mobilization plan for just transition and decarbonization indicates that current mechanisms often fail to include youth, women, informal workers and ethnic minorities in energy transition dialogues, leading to oversight of distributional impacts on vulnerable groups (European Commission, 2023).

[5] For a detailed discussion of the model and its technical specifications, see chapter 4 technical appendix, section 4.1.4.

[6] For a detailed discussion of the model and its technical specifications, see chapter 4 technical appendix, section 4.1.5.

Box 4.2. CGE-microsimulation analysis: assessing the distributional impacts of climate mitigation policies in Indonesia[a]

Scenarios

Three policy scenarios are compared with the business-as-usual scenario:

1. Low ambition: removal of electricity and fuel subsidies, with savings used for public investment.
2. Medium ambition (NDC-aligned): Adds early coal retirement, wetland and forest restoration, power-sector emissions caps, and a carbon tax of up to $\$40/tCO_2$ for all sectors and GHG emissions except for agriculture. Revenues support social assistance, low-carbon investment and compensation for stranded assets.
3. High ambition (net-zero pathway): Extends the medium scenario with a carbon tax rising to $\$200/tCO_2$ and adds foreign investment equivalent to 1% of GDP.

Key findings

Shifts in labour market and wages:

- Because the agricultural sector is exempt from the carbon tax, it will expand relative to energy-intensive sectors. This creates employment opportunities, particularly for low-skilled workers in rural areas.
- While low-skilled employment rises, wages for this group are projected to decline due to an influx of labour into the agricultural sector. Conversely, while overall high-skilled employment may contract along with energy-intensive service sectors, wages in specific green subsectors (for example, renewable energy) surge due to labour market frictions and skill shortages.

Distributional outcomes

- Carbon tax revenue recycling ensures that the overall policy impact is progressive. Poorer households, who benefit most from social assistance and lower food prices, see larger relative increases in consumption.
- Poverty is projected to decline in scenario 2 and 3, potentially by up to 1 percentage point nationally and almost 4 percentage points in specific regions, provided that fiscal revenues are effectively channelled into social protection.

Policy insight

This case illustrates that climate mitigation does not necessarily entail a trade-off with equity. CGE–microsimulation analysis shows that while carbon pricing poses risks to purchasing power, revenue recycling can transform a regressive tax into a progressive outcome. However, aggregate gains mask individual losses; specifically, high-skilled workers in contracting carbon-intensive industries and low-skilled workers facing wage stagnation. It highlights the need for complementary measures, such as targeted assistance, worker transition programmes and investment mobilization, to ensure a just and inclusive transition.

[a] See World Bank, 2023a.

Use of MCDA has become increasingly popular for complex energy and environmental decisions that require balancing competing objectives. Although not formally labelled as such, an MCDA approach informed the design of the European Union's Carbon Border Adjustment Mechanism (CBAM), where options were evaluated for environmental effectiveness, WTO compatibility, administrative feasibility and diplomatic implications (European Commission, 2021) (box 4.3).

MCDA is also becoming integral to policy design in many Asian and Pacific economies. For instance, a study on China shows how MCDA models can allocate emission quotas by explicitly weighting equity criteria (historical responsibility) against economic efficiency (industrial output) in the national carbon trading market, ensuring that developing regions receive fairer allowances than under a purely market-based approach (Qin and others, 2017).

Box 4.3. Multicriteria decision analysis (MCDA): supporting the implementation of the EU Carbon Border Adjustment Mechanism

As part of its *Fit for 55* package, the European Union developed the Carbon Border Adjustment Mechanism (CBAM) to address the risk of "carbon leakage" and preserve the integrity of its climate ambitions. Designing such a novel instrument required balancing multiple objectives that could not be reduced to a single metric, including environmental effectiveness, economic impacts, legal feasibility and administrative practicality, making the policy process a clear example of MCDA in practice.

Although the European Commission's impact assessment (IA) did not label its approach as MCDA, it followed the core steps of the method. A discrete set of six policy options was defined, ranging from import taxes to certificate systems aligned with the EU Emissions Trading System. These options were evaluated against criteria including emissions reduction potential, risks of carbon leakage, macroeconomic impacts, distributional effects and administrative costs. The IA demonstrated explicit trade-offs: options requiring importers to report actual emissions provided stronger decarbonization incentives but incurred higher monitoring and verification costs than using default values based on EU benchmarks.

Stakeholder consultations with industry, member States and civil society helped clarify the value judgements behind these trade-offs. Most actors agreed that CBAM would reinforce incentives for cleaner production and innovation, while raising costs for EU industries – especially in downstream sectors. These divergent preferences underscored the need for transparent weighting of criteria, a central principle of MCDA.

The IA ultimately identified a certificate-based system with a gradual phase-in and parallel phase-out of free allowances as the preferred design, reflecting a balanced compromise across environmental, economic, social and administrative considerations. While no formal numerical weighting was applied, the final choice made the implicit ranking of criteria explicit and politically accountable.

4.2.5. Mapping analytical tools to policy options

As illustrated in table 4.1, no single tool can capture the economic, social and technological complexities of the transition. Instead, these tools function as a complementary system of checks and balances. Integrated assessment models and CGE models establish macro-level feasibility and economy-wide trade-offs, while microsimulation and cost-benefit analysis provide the granularity needed to shape implementation choices, including the targeting and calibration of compensation. Used together within an integrated scenario-planning framework, these tools enable policymakers to move beyond generic transition strategies toward precise policy engineering that aligns instruments with country-specific economic structures and social conditions.

Analytical tools, discussed above, typically assume that policies are implemented as designed, institutions function without friction, and actors behave rationally – assumptions that rarely hold in practice. Actual policy outcomes depend heavily on governance quality, institutional capacity, incentives and human behaviour. To address these real-world dynamics, the following sections introduce political economy and behavioural science lenses that complement quantitative analysis.

Table 4.1. Mapping analytical tools to policy options identified in chapter 3

Policy options in chapter 3	IAM	CGE	MS	CBA	MCDA
1.					
Fossil fuel subsidy reform					
Phase-out of subsidies to remove price distortions	X	X		X	X
Revenue recycling	X	X	X	X	
Carbon pricing mechanisms					
Carbon taxes	X	X		X	X
Emissions trading systems	X	X			X
Transition finance taxonomies					
Early retirement of coal plants	X	X		*	*
Allowing banks to finance the managed decline of high-carbon sectors					*
Managed phase-out mechanisms (energy transition mechanisms)					
Blended finance to refinance high-interest commercial debt with concessional funds	X			X	
2.					
Industrial policy supporting transition (production incentives)					
Fiscal instruments such as performance-linked subsidies for strategic sectors (for example, solar PV, batteries) to foster domestic manufacturing and competitiveness	X	X		X	X
Public investment in grid modernization					
Direct state investment in smart grids and transmission infrastructure to handle intermittent renewable supply and unlock private generation investment	X	X		X	X
Central bank green liquidity and incentive frameworks					
Preferential liquidity rates for bank lending to clean energy	X	X	X		
Reduced reserve requirements for green lending				*	
Relaxed loan-to-value (LTV) rules		*			
Sovereign GSS+ bonds					
Sovereign green, social and sustainability bonds to fund public goods like renewable energy parks or climate adaptation infrastructure		*		X	*

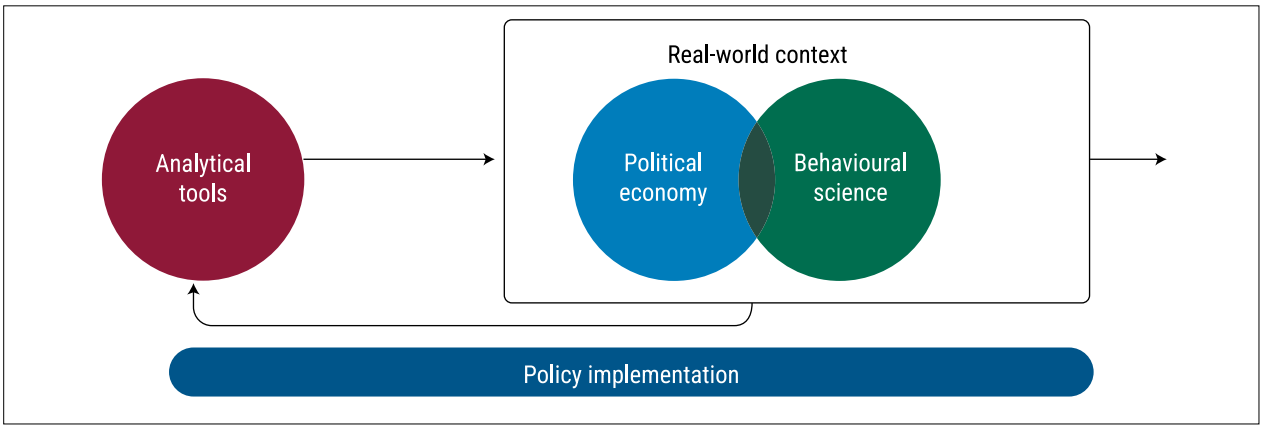
Table 4.1. continued

Policy options in chapter 3	IAM	CGE	MS	CBA	MCDA
3.					
Bulk green procurement and demand aggregation					
The government acts as a super-aggregator to buy efficient goods in bulk, negotiating lower prices to make technologies affordable for mass markets	X			X	X
Technology upgrade incentives (fiscal measures to reduce the upfront cost of industrial modernization)					
Investment tax allowances	X	*	X		X
Accelerated depreciation of energy-efficient machinery		*			
Energy efficiency-linked loans					
Financial products that offer preferential interest rates or longer tenors for projects that verify specific energy savings			X	*	
Energy savings insurance (ESI)					
An insurance product that covers the "performance risk" of new technology; if projected savings do not materialize, the insurance pays the difference, de-risking the investment for SMEs				*	*
4.					
Public investment in grid extension					
Direct state funding for backbone infrastructure to connect remote or rural regions where private returns would be negative	X	*	X	X	*
Targeted connection subsidies (output-based aid)					
Subsidies covering the capital cost of connection charges for poor households, rather than subsidizing consumption		X	X	X	
Blended finance for inclusive fintech (PAYG)					
Using public funds (grants or low-interest credit) to de-risk private "pay-as-you-go" solar models, enabling households to pay for solar systems in small digital instalments				X	
Debt-for-climate swaps					
Agreements where creditors write off a portion of a nation's external debt in exchange for the government committing those funds to domestic climate and energy transition projects				*	*

Source: ESCAP.

Note: This table identifies the analytical frameworks that can be used to calibrate and choose appropriate policy instruments discussed in chapter 3. The mapping is based on a representative stocktake of modelling case studies across Asia and the Pacific. As such, it serves as a functional guide rather than an exhaustive list of all possible analytical frameworks. For example, dynamic stochastic general equilibrium models are not included in this table, but they are used as evaluation tools that central banks rely on to understand the interplay between climate goals and traditional mandates. MS stands for microsimulation. X denotes applications identified in the Asia-Pacific region modelling stocktake; * denotes potential applications where the tool's methodology has the potential for policy design and evaluation but was not sampled in the stocktake.

Figure 4.2. The complementary roles of analytical tools, political economy and behavioural science in policy implementation



Source: ESCAP.

Political economy analysis reveals how stakeholder interests, power relations and institutional bottlenecks can block efficient policies, while behavioural science explains how framing, social norms and cognitive biases determine public acceptance and compliance. By feeding these real-world insights back into analytical models, and simulating delayed implementation, policy reversals or uneven enforcement, policymakers can move beyond idealized projections to design strategies that are not only technically sound but politically durable and socially supported (fig. 4.2).

4.3. Political economy considerations of transition-related policies

This section examines the implementation of transition policies through a political economy lens, focusing on who holds influence, what objectives they pursue, and how institutional and contextual conditions shape outcomes. It recognizes that reform trajectories are shaped by power relations, distributional trade-offs, coordination challenges and external constraints, rather than by policy design alone.

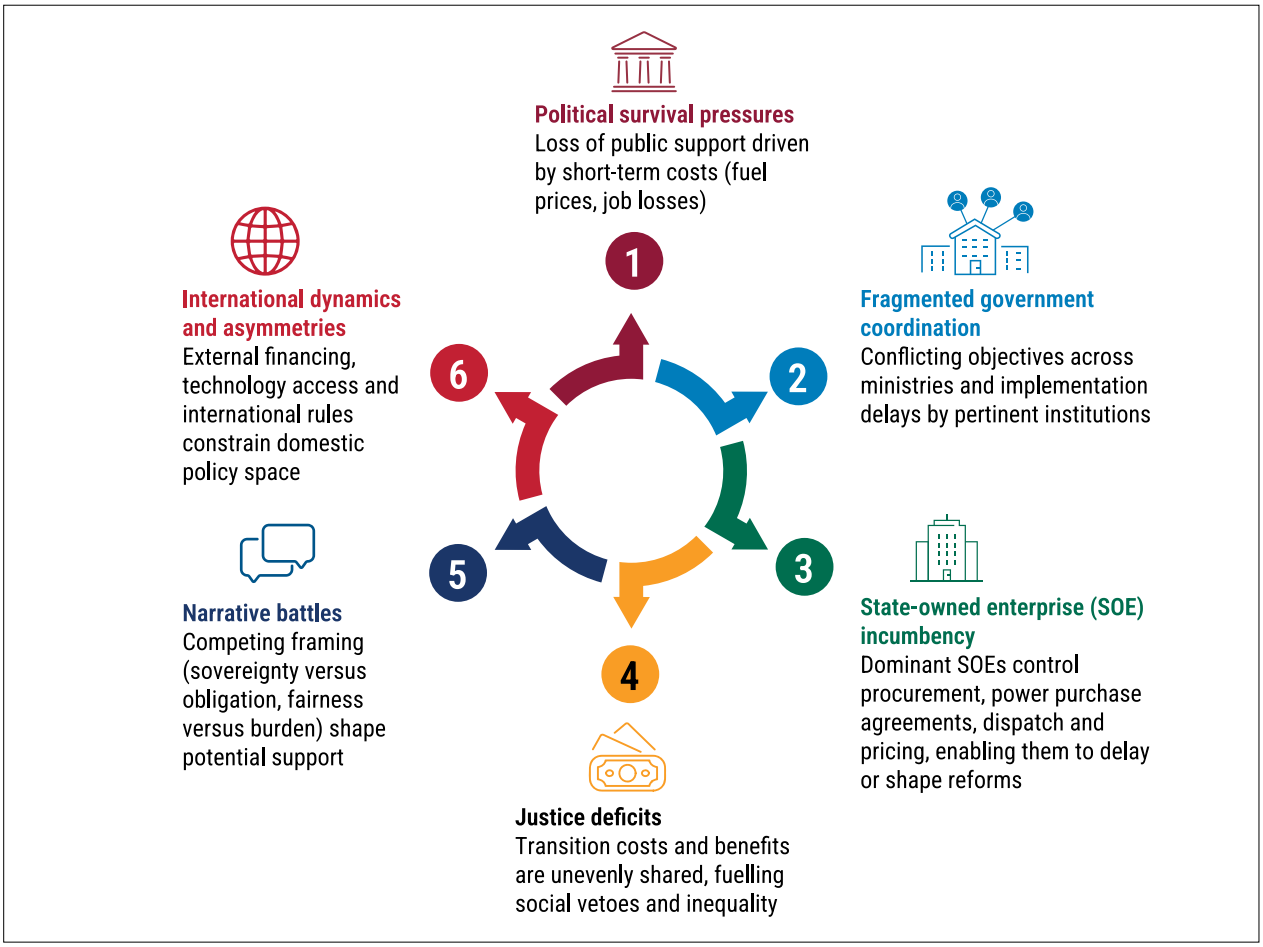
4.3.1. The case for a political economy lens

Reforms to support the transition to an environmentally sustainable economy are often delayed, diluted or reversed when they disrupt entrenched interests or fail to align with domestic political realities. This is because such transitions are fundamentally political processes rather than purely technical or economic ones (Arent and others, 2017; Bhattacharya, Kharas and McArthur, 2023). Transitions redistribute subsidies, reshape investment flows and threaten incumbent (fossil fuel) industries. As a result, transitions often face strong political resistance despite them being technically feasible and economically rational (Meadowcroft, 2011; Nedopil and others, 2025). This dynamic shapes how the policy instruments discussed in chapter 3 play out in practice, especially where reforms alter incentives, rents or revenue flows.

A political economy lens reveals the key drivers and constraints that influence whether transition policies will succeed. Electoral cycles, state-owned enterprises (SOEs) incumbency, justice deficits, public narrative battles and international finance dependencies are some of the factors that shape outcomes across the region. Ignoring these dynamics risks stalled reforms, while integrating them with technical analysis enables the creation of feasible strategies that help policymakers sequence reforms, anticipate risks and build inclusive coalitions that sustain political support.

The political economy considerations of the transition to an environmentally sustainable economy can be understood through the actors-objectives-context (AOC) framework. By mapping key actors, identifying their objectives and situating these within broader contextual conditions, the framework highlights the political and institutional realities that shape

Figure 4.3. Summary of key political economy challenges in Asia and the Pacific



Source: ESCAP.

transition outcomes. Used at the regional level, AOC enables cross-country comparison and helps identify recurring political economy constraints that are relevant for policy design in the Asia-Pacific region (see chapter 4 technical appendix, section 4.2.1).

4.3.2. Political economy challenges

Applying the actors-objectives-context (AOC) framework[7] reveals that the Asia-Pacific region faces six key political economy challenges. These challenges go beyond technology or finance and can either accelerate or hinder reform. Figure 4.3 summarizes the challenges, while table 4.2 presents illustrative country examples.

Challenge 1: Political survival pressures

Transition policies are shaped as much by political survival considerations as by economic or environmental objectives. Energy issues directly affect household welfare and industrial competitiveness through prices and employment, thus influencing government survival strategies (Aklin and Urpelainen, 2018; Arent and others, 2017). Many governments that have tried to pursue ambitious climate goals have had to slow down, redesign or abandon transition policies to avoid social unrest or electoral backlash (Mulugetta and others, 2022; Seto and others, 2016). For example, in Bangladesh, the government cancelled 31 solar projects worth over $6 billion in 2023 amid concerns over tariff increases and public backlash (Zami, 2025).

Political survival pressures affect all regime types. In democracies, voters punish governments for energy price shocks or job losses, regardless of long-term decarbonization benefits. This can lead governments to pre-emptively moderate policy ambition to avoid backlash from politically influential groups, such as in New Zealand, where agricultural emissions were partially excluded from pricing

[7] For details of the AOC framework, see chapter 4 technical appendix, section 4.2.1.2.

Table 4.2. Country examples of political economy challenges in Asia and the Pacific

	PE challenge	Examples of country cases
1.	Political survival pressures	• **Bangladesh*:** 31 solar projects cancelled to avoid tariff backlash. • **Indonesia:** Subsidy cuts reversed amid protest fears. • **Kazakhstan:** 2022 LPG liberalization triggered nationwide unrest. • **New Zealand*:** Farm methane excluded from Carbon Act to protect key voters.
2.	Fragmented government coordination	• **Indonesia*:** Fragmented mandates slow renewable energy deployment. • **Philippines*:** Split responsibilities between target-setting and enforcement delay implementation. • **Viet Nam:** Fragmented coordination across ministries and SOEs slows transition progress.
3.	Incumbency of SOEs and business-state coalitions	• **India*:** Coal India and Distribution Companies block coal-phase-out incentives. • **Indonesia*:** Perusahaan Listrik Negara (PLN) and coal Power Purchase Agreements mute Emissions Trading System signals. • **Uzbekistan:** UzbekEnergo monopoly slows renewable energy integration. • **Viet Nam*:** Vietnam Electricity (EVN) payment delays hurt investor confidence.
4.	Justice consideration deficits	• **Australia*:** Power station closure sparked backlash over poor support. • **China*:** Land disputes in some areas undermine transition. • **Fiji*:** Outer islands feel excluded from renewable energy gains. • **India:** Jharkhand unions resist coal exit without guarantees. • **Malaysia*:** Poor consultation around Bakun Dam triggered Indigenous displacement.
5.	Narrative battles and legitimacy	• **Indonesia (JETP)*:** "Energy sovereignty" narrative fuels public scepticism. • **Kazakhstan*:** Protestors reject government's fiscal framing. • **Viet Nam (JETP)*:** NGOs warn that limited consultation with affected groups undermines its "just" dimension.
6.	International dynamics and asymmetries	• **ASEAN exporters*:** EU CBAM raises compliance burdens for Indonesia and Viet Nam. • **Indonesia (JETP):** Loan-heavy structure weakens trust. • **Pacific Islands*:** Donor-driven delays undermine legitimacy.

Source: ESCAP.

Note: Asterisked (*) cases are further elaborated in the main text and were selected to ensure country representativeness.

mechanisms under the Zero Carbon Act (Crawley and Chapman, 2025). In hybrid or authoritarian regimes, leaders seek to maintain legitimacy by suppressing price hikes and signalling stability, fearing social unrest that could challenge their rule (Aklin and Urpelainen, 2018; Arent and others, 2017).

Challenge 2: Fragmented government coordination

A key barrier to successful transitions to environmentally sustainable economies in Asia and the Pacific is administrative fragmentation within governments (Arent and others, 2017; Jakob and Steckel, 2022; Shen and Xie, 2018). Ministries working on finance, energy, climate and industrial development issues often pursue conflicting objectives. Examples include fiscal stability versus subsidies or energy security versus renewable integration, or SOEs delaying or blocking reforms that could compromise their interests. Without a central coordinating mechanism, these institutional frictions multiply, holding back reform and confusing investors and the public.

Fragmented mandates translate into slow implementation of renewable energy targets. In the Philippines, the Department of Energy has set a target of 35% renewable energy generation by 2050 but lacks enforcement authority (Reyes and Calderon, 2025). Compliance is delegated to the Energy Regulatory Commission, where delays in issuing implementation rules and applying penalties slow progress. Similarly, in Indonesia, renewable energy deployment is slowed by fragmented mandates across policy and permitting functions split between the Ministry of Energy and Mineral Resources, the investment authority, subnational governments, and the state-owned utility Perusahaan Listrik Negara (OECD, 2025b).

Challenge 3: Entrenched state-owned enterprises and business-state coalitions resist structural change

The dominant role of SOEs in energy systems in Asia and the Pacific gives them considerable power to delay or advance transition reforms. As the AOC mapping shows, while executive branches, ministries and parliaments may set ambitious transition targets, SOEs ultimately determine whether and how these targets are implemented. This influence is exercised through control over procurement decisions, investment planning, fuel supply chains and grid operations (Arent and others, 2017; BloombergNEF, 2024; Richardson-Barlow and Dahlan, 2024). Together, this creates "lock-ins", where contracts, subsidies and infrastructure investments result in long-term fossil dependence. In Indonesia, the state-owned utility company is locked into long-term coal power purchase agreements that guarantee capacity payments even when demand stagnates, reinforcing fossil dependence and constraining institutional change (Lontoh, Beaton and Clarke, 2015; Mori, 2021). In Viet Nam, the dominance of the single buyer and grid operator has led to repeated payment delays to renewable energy developers and eroded investor confidence (Jakob and others, 2020).

Operating under multiple mandates to provide affordable energy while maintaining fiscal and political stability, many SOEs prioritize social and economic objectives over efficiency and decarbonization (Nedopil and others, 2024). Subsidies and soft-budget support remain common, discouraging private investment and reinforcing fossil-fuel dependence. In 2022, fossil-fuel subsidies in the region exceeded $4 trillion, accounting for more than half of the global total and underscoring the scale of support that shields incumbents from transition pressures (IMF, cited in Nedopil and others, 2024).

The political economy challenge lies less in state ownership itself than the governance and incentive structures that determine how SOEs use their market power. In India, the world's largest coal-producing company and the state electricity distribution companies have at times expressed concerns about reforms that could affect their economic performance and existing incentive structures (Arent and others, 2017; Isoaho, Goritz and Schulz, 2016). Because SOEs operate under mandates to maintain energy price stability, energy security and employment, their objectives are closely aligned with those of political elites. Energy transition therefore becomes not only a technical reform but also a redistribution of rents and power. Without reforms to SOE mandates and accountability mechanisms, allied business-state coalitions will continue to shape transition pathways in ways that protect incumbent interests and slow implementation.

Challenge 4: Justice deficits risk community vetoes that derail transitions

National transition strategies are often designed and implemented top-down with limited community engagement, creating justice deficits. This lack of inclusion undermines local buy-in and can trigger opposition, particularly among Indigenous and rural communities (Hammond, 2024; Nedopil and others, 2025; Taiwo and Tozer, 2025). These challenges reflect gaps in distributional, procedural and recognitional justice (Jenkins and others, 2016).[8] In China for example, tensions emerged in Shanxi province as displaced coal workers and rural residents contested land rights and compensation arrangements following mine closures (Becken and Mackey, 2017; Isoaho, Goritz and Schulz, 2016). In Malaysia, insufficient grassroots consultation around the Bakun Dam, which displaced over 9,000 people, led to protests by Indigenous groups (Cooke and others, 2017; Hance, 2013).

Transitions generate distributional inequalities as transition costs and benefits are unevenly shared. Job losses in coal mining, decline in fiscal support in fossil-dependent provinces and rising household energy prices often disproportionately burden vulnerable groups. In Australia, the 2017 closure of the Hazelwood coal plant left over 750 workers and the local community with limited support, fuelling resentment and shaping national debates on just transition (Andrews and Dwyer, 2023). In contrast, the benefits of clean energy, such as new jobs and improved air quality, are diffuse and slow to materialize and typically favour urban and well-connected regions. In Fiji, for instance, despite high renewable electricity shares in good hydrological years, continued reliance on diesel in outer islands reinforces perceptions of unequal, urban-centred transition

[8] Distributive justice relates to the fair allocation of the costs and benefits of energy transitions, such as access to affordable energy and compensation for job losses, across different social groups and regions. Procedural justice refers to the inclusiveness and transparency of decision-making processes. Recognitional justice highlights respect for social and cultural identities, particularly those of Indigenous and marginalized communities. Together, these dimensions define a comprehensive understanding of "just transition."

benefits and undermines public trust in national renewable strategies (IRENA, 2025; International Trade Administration, 2024).

Procedural and recognitional justice gaps further undermine transition legitimacy. Large-scale solar and wind projects in the region have sometimes mirrored the problems seen in extractive industries, such as centralized land acquisition, limited benefit-sharing and gender-blind employment practices (McCauley and Pettigrew, 2023). Without inclusive dialogue and transparency, such projects risk triggering social resistance, litigation or political backlash, which can create community-level "veto points" that stall or reverse reforms (Inchauste and Victor, 2017; Zohlnhöfer, Herweg and Huß, 2016).

Challenge 5: Public narrative battles shape the legitimacy and coalition-building capacity of reforms

Narrative framing shapes the political feasibility and durability of energy transition reforms. Framing transitions as opportunities for jobs, innovation and energy security can mobilize broad support, while narratives emphasizing external imposition, affordability risks or livelihood losses often create resistance (Arent and others, 2017; Isoaho and Karhunmaa, 2019; Jakob and Steckel, 2022). Because the transition to an environmentally sustainable economy intersects with sovereignty and development priorities, narrative framing by political leaders, media, business groups and civil society plays a critical role in shaping stakeholder buy-in and coalition-building capacity (Isoaho and Karhunmaa, 2019; Jakob and Steckel, 2022; Jazuli, Roll and Mulugetta, 2024).

Country experiences illustrate how adverse narratives can undermine otherwise viable reforms. In Indonesia and Viet Nam, the Just Energy Transition Partnerships (JETP) have encountered push-back where they were framed as foreign interference or where affected communities perceived insufficient consultation, undermining legitimacy despite potential financing benefits (Jazuli, Roll and Mulugetta, 2024; International Rivers and Vietnam Climate Defenders Coalition, 2024). In Kazakhstan, subsidy reforms framed primarily as a fiscal necessity were interpreted as elite neglect, triggering nationwide protests (Strohecker, 2022; Stronski, 2022).

Challenge 6: International dynamics and asymmetries

The transition to an environmentally sustainable economy in the Asia-Pacific region, especially the energy transition, is increasingly influenced by external financing, technology access and international trade rules that limit domestic policy choices. These international dynamics create a political economy challenge in which governments must pursue socially sensitive domestic reforms while complying with external factors they did not design.

International climate finance mechanisms provide essential capital and technical support but also expose governments to donor volatility and fiscal risk. Loan-heavy mechanisms such as Just Energy Transition Partnerships (JETP) illustrate this risk: with over 95% of financing structured as loans, they can increase debt exposure and fiscal pressure for recipient countries (Hersaputri and others, 2024; Martinus, 2024; Nedopil and others, 2025). In the Pacific, for example, heavy reliance on donor-financed renewable projects, combined with delayed disbursements and donor-driven implementation, has weakened local ownership and reinforced perceptions of externally imposed transition agendas (Narayan and Narayan, 2024; Samuwai, Hills and Michalena, 2019). More broadly, shifts in donor-country politics can disrupt national transition plans, erode public trust and weaken political legitimacy, as illustrated by the recent withdrawal of the United States from key initiatives (Jazuli, Roll and Mulugetta, 2024; Narayan and Narayan, 2024; Quitzon, 2025).

Technological dependence further entrenches these asymmetries and limits countries' ability to shape their own transition pathways. Clean-energy patents remain concentrated in developed economies, while China controls over 70% of global solar PV, battery and rare-earth supply chains, creating a persistent "low-carbon technology gap" for many Asian and Pacific economies (Weko and Goldthau, 2022). Many technology-transfer initiatives prioritize hardware deployment over knowledge transfer, intellectual property access and institutional learning, constraining domestic value-chain development and deepening reliance on external suppliers.

Global carbon pricing regimes and trade rules add another layer of political complexity. More developed economies have built emissions trading systems and carbon taxes based on decades of administrative capacity, robust monitoring systems and mature clean-technology industries (Meckling, Sterner and Wagner, 2017; Zhang and Sovacool,

2025). By contrast, many Asian and Pacific economies face fragmented markets, the dominance of state-owned enterprises, weak monitoring systems and limited social protection, which blunt price signals and make reforms politically sensitive (Steckel, Renner and Missbach, 2021). External regimes, such as the EU's Carbon Border Adjustment Mechanism (CBAM), further shift competitiveness and impose compliance burdens on exporters that are still developing their domestic transition frameworks (Gaur and Maiti, 2025; Pollard and Buckley, 2025).

Regional diversity

The region's energy landscape is heterogeneous, reflecting diverse political economy challenges across the region. While countries share the six common political economy challenges, their relative weight varies widely.

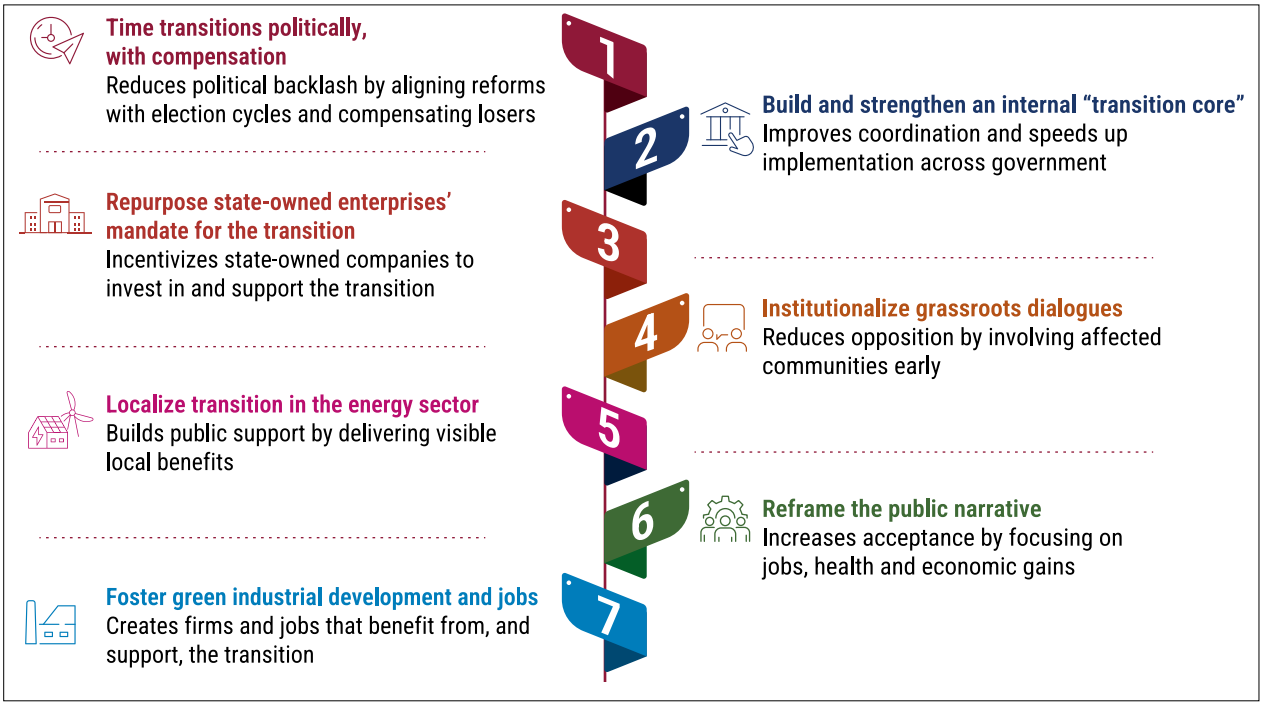
One source of variation lies in countries' positions as fossil fuel exporters or importers. In exporting economies such as Australia and Indonesia, coal and gas underpin public revenues and livelihoods, generating powerful vested interests and heightening concerns over fiscal and regional stability. By contrast, import-dependent economies such as Japan, the Philippines and Viet Nam are more exposed to energy price volatility and geopolitical shocks, with political pressures shaped by energy security, affordability and market governance. These contrasting structural positions give rise to distinct constellations of actors, incentives and reform risks.

Technological pathways further differentiate transition challenges across the region. Technology leaders are competing to become technology path-setters, pursuing divergent, technology-focused trajectories, ranging from hydrogen and carbon capture to offshore wind and smart grids. The trajectories are shaped by differences in industrial structures, energy endowments and strategic competitiveness objectives, as seen in China, Japan, the Republic of Korea and Singapore. By contrast, technology adopters, including least developed countries and small island developing states, face constrained technology choices shaped by limited fiscal space, technical capacity and dependence on external finance and suppliers, heightening the risks of path dependence and technology lock-in.

4.3.3. Policy recommendations to overcome the political economy challenges

Building on the preceding analysis, this section sets out policy recommendations to address the six political economy challenges. Figure 4.4 provides an overview of the seven policy recommendations, while table 4.3 illustrates how these recommendations have been applied in selected country contexts.

Figure 4.4. Summary of policy recommendations



Source: ESCAP.

Table 4.3. Examples of policy recommendation implementation by country

Recommendation	Challenges addressed	Examples of country cases
R1. Time transitions politically, with compensation	Political survival; justice deficits	• **Australia:** Worker transfer scheme introduced following closure of coal power station. • **Indonesia:** Fuel subsidy reforms paired with cash transfers. • **Iran (Islamic Republic of)*:** Phased subsidy reform made manageable through upfront cash transfers and communication.
R2. Build and strengthen an internal "transition core"	Intra-state fragmentation; SOE incumbency; political survival	• **Bangladesh*:** Coordination among public agencies and NGOs enabled near-universal electricity access. • **China*:** Central energy coordination aligned ministries and SOEs behind renewables.
R3. Repurpose SOEs' mandate for the transition	SOE incumbency; international dynamics; Intra-state fragmentation	• **China*:** Central mandates tie profits to renewable expansion. • **India*:** NTPC (SOE) repositioned from coal incumbent to renewables leader. • **Uzbekistan*:** Utility restructuring unlocked renewable investment.
R4. Institutionalize grassroots dialogues	Justice deficits; narrative legitimacy	• **Australia*:** Indigenous co-ownership agreements legitimize renewable projects. • **Indonesia:** East Kalimantan forum institutionalized worker and community participation.
R5. Localize transition in the energy sector	Justice deficits; political survival	• **Fiji*:** Utility-village partnerships expanded renewables to outer islands. • **Indonesia*:** Community-managed renewables built local ownership. • **Malaysia*:** State-backed off-grid systems operated by local communities.
R6. Reframe the public narrative	Narrative legitimacy; political survival; intra-state fragmentation;	• **New Zealand*:** Zero Carbon Act framed around fairness built political backing. • **Philippines*:** Coal phase-out reframed as public health issue.
R7. Foster green industrial development and jobs	Political survival; SOE incumbency; international dynamics	• **Australia*:** Clean industry strategy paired emissions caps with new jobs. • **India*:** Production-linked incentive scheme created domestic clean-energy winners.

Source: ESCAP.

Note: Asterisked (*) cases are further elaborated in the main text and were selected to ensure country representativeness.

Recommendation 1. Time transitions politically, with compensation

Political timing determines the durability of transition-related policies. Reforms are more likely to endure when introduced during periods of strong political mandate, typically right after elections, when governments have greater political capital (Arent and others, 2017; Inchauste and Victor, 2017). Indonesia's fuel-subsidy reforms in 2005 and 2008 succeeded largely because they were launched right after elections and paired with cash transfers to 19 million poor households (Beaton, Lontoh and Wai-Poi, 2017; Jazuli, Steenmans and Mulugetta, 2021).

Sequencing compensation ahead of price increases, and making it automatic and legally binding, can help address distrust and shift the political balance in favour of reform. The 2010 fuel subsidy reforms in the Islamic Republic of Iran largely succeeded because the government clearly communicated reform objectives and provided cash transfers to households before energy prices rose (Salehi-Isfahani, Stucki and Deutschmann, 2015).

Recommendation 2. Build and strengthen an internal "transition core"

Establishing a central government coordination mechanism is essential to drive implementation of transition in the energy sector. A formal coordination unit comprising key ministries and the central bank should be mandated to steer transition implementation, mediate inter-ministerial disputes and balance

fiscal, industrial and climate goals. Empowered with clear authority, such a "transition core" can dismantle bureaucratic silos and enhance transparency and accountability (Jakob and others, 2020).

Effective coordination can drive large-scale transformation, despite fiscal and technical challenges. China's National Energy Commission integrates ministries and SOEs under unified transition targets, while the National Development and Reform Commission and the National Energy Administration translate these into concrete renewable capacity and subsidy plans (Shen and Xie, 2018). This system reduces bureaucratic conflict by aligning fiscal industrial and energy policies, allowing renewable capacity to exceed 1,450 GW in 2023 (Yang, Shi and Yang, 2025). Meanwhile, Bangladesh's near-universal electricity access by 2022 was made possible through close coordination among core public agencies working alongside NGOs. This partnership enabled the installation of over six million solar home systems despite budgetary pressures and maintenance challenges (Hasan, Kesapabutr and Möller, 2024; Zami, 2024).

Recommendation 3. Repurpose the mandates of SOEs for the transition

SOEs hold untapped potential to accelerate transitions if their mandates and incentives are aligned. Their scale, access to capital and policy alignment enable them to drive renewable expansion, modernize grids and finance early coal retirement. Evidence from developed countries suggests that state ownership can enhance renewable investment when governments deploy SOEs as vehicles for climate goals or grant them preferential financing for capital-intensive projects (Prag, Röttgers and Scherrer, 2018). Under explicit political directives tied to national climate and industrial strategies, SOEs increased the share of renewables in their generation portfolios from 9% to 23% between 2000 and 2014, particularly in China, India and Viet Nam (De Kleine Feige, 2021).

Governments should explicitly repurpose SOE mandates to make decarbonization, system efficiency and clean investment core performance objectives rather than peripheral responsibilities. Executive performance and investment approvals should be tied to transition targets, while blanket subsidies and off-budget support should be replaced with performance-based incentives such as mobilization of green finance. Importantly, repurposed mandates should also authorize SOEs to lead clean investment at scale, leveraging their balance sheets to crowd in private capital and reduce transition risks. Country examples illustrating how repurposed SOE mandates have supported the energy transition are summarized in table 4.4.

Recommendation 4. Institutionalize grassroots dialogues

Structured and institutionalized dialogue with communities can help governments manage social risks and sustain support for transition reforms. By formally engaging unions, local governments, civil society organizations and Indigenous representatives, dialogue platforms enable governments to address distributional impacts, negotiate safeguards and reduce the likelihood that social pushback escalates into policy or project vetoes.

Institutionalized dialogue can turn opposition into co-governance. In Australia, for example, First Nations Clean Energy Agreements grant Indigenous communities veto rights and co-ownership over renewable projects on customary lands, underpinned by free, prior and informed consent (O'Neill and Thorburn, 2025). This approach ensures that affected communities shape, rather than merely approve, transition reforms.

Table 4.4. Country examples of repurposed SOE mandates to support the transition

Country	Repositioning and outcomes
China	Central mandates tying profit objectives to carbon-intensity reduction repositioned the State Grid Corporation as a major renewable investor (Shen and Xie, 2018).
India	The coal-dominant SOE NTPC was repurposed with a clean-energy growth mandate, committing to 60 GW of renewable capacity by 2032 and expanding its core business into hydrogen, battery storage and electric vehicle infrastructure (Shukla, 2021).
Uzbekistan	The national utility UzbekEnergo was unbundled into separate generation, transmission and distribution companies, improving transparency and governance and helping to attract over 2 GW of solar investment under the 2030 Energy Strategy (Djalilova, 2021; Sukhankin, 2025).

Recommendation 5. Localize transition in the energy sector

Community-driven distributed renewable energy systems (DES) are proving to be increasingly effective and socially legitimate delivery models for just energy transitions in the Asia-Pacific region. Systems such as micro-hydro and solar mini-grids function not only as technical solutions for rural electrification but also as platforms for local agency, ownership and justice-building, particularly when communities are empowered as co-owners or operators rather than passive beneficiaries (Richardson-Barlow and others, 2022; Richardson-Barlow and Dahlan, 2024).

Localized energy systems can strengthen political and economic support for the transition by creating new local stakeholders with a vested interest in its success. Compared to top-down infrastructure projects, community-embedded systems foster social acceptance, build local skills and generate livelihoods, thereby transforming local and Indigenous communities into constituencies for renewable energy. Support from governments and development partners are essential to scaling community-based energy systems and integrating localized DES into national transition strategies. Table 4.5 presents country examples of how community-based energy systems support transitions.

Recommendation 6. Reframe the public narrative

Governments should frame transition-related policies around economic and social benefits. Narratives that emphasise tangible co-benefits, such as affordable energy, energy reliability, cleaner air, jobs, industrial competitiveness and energy sovereignty, are more effective than climate-only framing. Such narratives broaden support beyond climate constituencies and strengthen governments' ability to advance reforms while managing resistance from incumbent interests and populist counter-mobilization. In New Zealand, the government helped build broad political backing for the Zero Carbon Act (2019) by framing climate action around fairness and intergenerational responsibility, while allowing flexibility for sensitive sectors such as agriculture.

Trusted local messengers, including indigenous leaders, can help deliver credible storytelling. Local doctors highlighting the health impacts of coal pollution, farmer cooperatives advocating renewable irrigation, and business chambers promoting competitiveness through clean energy are some examples of how abstract goals have been translated into socially comprehensible messages. In the Philippines, health organizations working with the Powering Past Coal Alliance (PPCA, 2024) reframed coal phase-out as a public health issue by linking coal pollution to respiratory illness and healthcare costs. By shifting the debate from emissions to health outcomes, this framing helped strengthen public acceptance of phase-out policies (PPCA, 2024).

Table 4.5. Country examples of community-based energy systems

Country	Partner institution(s)	Description
Indonesia	IBEKA (NGO)	The Ulu-Danau micro-hydro project in West Java has provided electricity to hundreds of households since 2007. Village-based organizations manage operations and maintenance, with women's participation formally included in governance to strengthen procedural justice (Richardson-Barlow and others, 2022).
	Hivos (NGO)	The Sumba Iconic Island project coordinates government, civil society and communities to scale decentralized renewables through locally managed solar, micro-hydro and biogas systems, increasing energy access while building local ownership (Energia, 2016).
Malaysia	Sarawak State Government	Under the Sarawak Alternative Rural Electrification Scheme, off-grid solar and micro-hydro systems are deployed to remote Iban households, with communities managing day-to-day operations and the Sarawak government providing long-term maintenance and institutional support.
Fiji	Energy Fiji Ltd (SOE)	Community-based electrification expanded renewable access to outer islands, with Energy Fiji Ltd partnering with villages to operate micro-hydro and solar systems. These systems support a national electricity mix in which renewables supply 56% of grid generation (Long and others, 2024).

Recommendation 7. Foster green industrial development and jobs

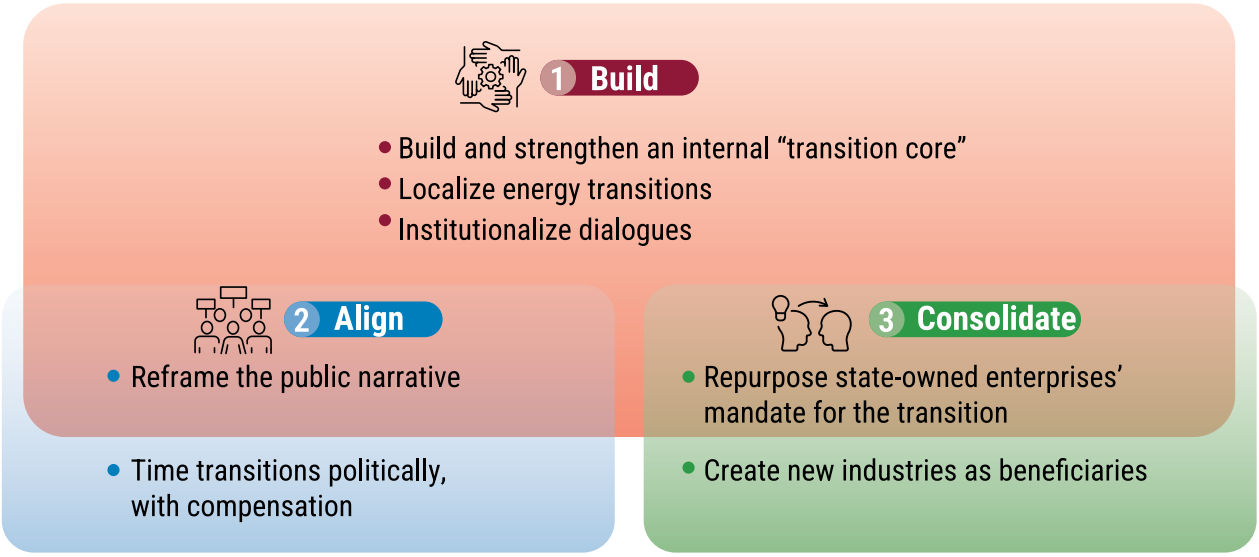
Governments can leverage the energy transition to an environmentally sustainable economy to foster new domestic industries and build supportive constituencies. Public investment and targeted industrial policies can accelerate the emergence of beneficiaries such as renewable manufacturers, grid developers, storage providers and green industrial clusters. As these actors generate jobs, rents and industrial linkages, they form pro-transition coalitions that can counterbalance the influence of fossil-fuel incumbents and increase political support for reform (Arent and others, 2017). India's production-linked incentive scheme illustrates how macroeconomic policy can foster green industrial development through incentives for domestic manufacturing of solar photovoltaic, batteries and green hydrogen, reducing import dependence while creating new industrial beneficiaries with a vested interest in sustaining the transition (Dubey, Agrawal and Sharma, 2023; Katti and others, 2025).

Strategic public sector co-investment is a powerful tool for aligning market performance with political incentives. Investment in transmission grids, storage systems and renewable manufacturing can lower capital costs, enabling private developers to scale projects, while signalling long-term government commitment that attracts international finance (Montague, Raiser and Lee, 2024). These investments also deliver visible political dividends such as employment in transition regions, new export opportunities and reduced import dependence, allowing governments to reframe the transition as a growth and competitiveness strategy rather than an economic threat (Meckling, Sterner and Wagner, 2017; Murphy and others, 2025). For example, in Australia, emissions caps under the Safeguard Mechanism are complemented by $600 million in public co-investment, which supports decarbonization investments by trade-exposed industrial facilities (Australian Government, 2023; Leandro, 2024; Wood and Reeve, 2024). This public co-investment lowers capital costs for firms and creates a constituency of regional industries with a direct stake in sustaining the transition.

Build, align and consolidate

Implementing the seven recommendations effectively requires careful sequencing to make energy transitions politically and economically feasible. For this purpose, policymakers can use the "build, align, consolidate" framework to guide implementation in a structured and complementary manner. "Build" focuses on strengthening the foundations for transition. "Align" centres on managing political and distributional risks as reforms deepen. "Consolidate" embeds the transition over the longer term. While policymaking rarely follows a linear path, this framework clarifies reform interdependencies and helps policymakers plan, time and anticipate complex energy transitions while maintaining political feasibility and social legitimacy (fig. 4.5).

Figure 4.5. Sequencing reforms using the "build, align, consolidate" framework



Source: ESCAP.

4.4. Closing the implementation gap with insights from behavioural science

Even when policies are technically robust and politically feasible, they often underperform in practice because real-world behavioural responses do not match policymakers' expectations. This "implementation gap" reflects the "last-mile challenge" in public policy: outcomes ultimately depend on how individuals interpret and respond to policy measures. By identifying behavioural constraints that shape real-world decision-making, behavioural science helps explain why uptake may remain low even when incentives, information and regulations are in place.

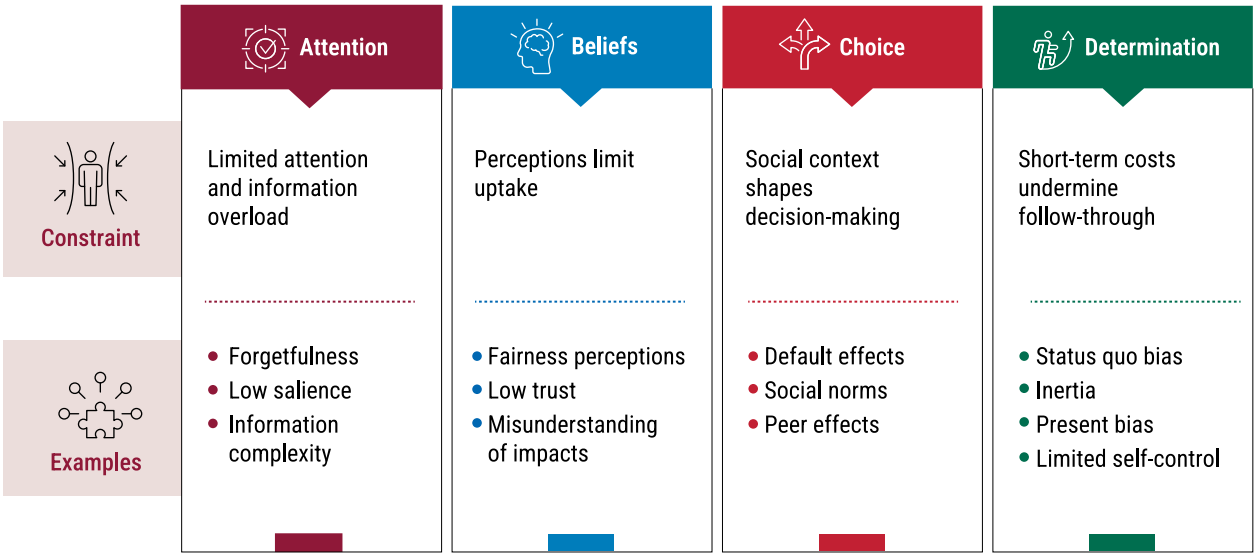
While political economy analysis highlights collective dynamics related to power, interests and institutions, behavioural insights help explain specific implementation failures. Behavioural insights shed light on why renewable-energy incentives may see low uptake when administrative steps are complex or favour fossil options; why electric-vehicle adoption may stall when consumers overemphasize upfront costs relative to lifetime savings; why clean-technology diffusion may slow when firms follow industry norms rather than cost-effective alternatives; and why green finance instruments may underperform when investors rely on familiar products or distrust new ones.

Behavioural tools such as framing, simplification, feedback and default options help translate policy intent into outcomes by improving uptake and public acceptance. They complement existing policy frameworks by making reforms not only economically rational, but also socially acceptable.

4.4.1. Why behaviour matters for policy implementation in the transition to an environmentally sustainable economy

Behaviour matters because individuals, firms and investors do not always respond to prices, incentives or regulations in the rational manner assumed by traditional economic analysis. Instead, decisions are influenced by behavioural constraints such as cognitive biases, habits, limited attention, social norms and perceptions of fairness (fig. 4.6). For instance, in the United Kingdom, many consumers remain on default or standard variable tariffs and pay more than available alternatives, despite strong financial incentives to switch in a competitive, liberalized market (Ofgem, 2017).

Figure 4.6. Examples of behavioural constraints



Source: ESCAP, based on OECD (2019).

These behavioural frictions are compounded in the case of transition-related policies, where costs are immediate, but benefits are often long-term and diffuse. Evidence from Switzerland shows that public support for carbon taxes increases when revenues are explicitly allocated to climate-related spending. However, individuals may reduce their own energy-saving efforts at the same time because they feel they have "done their part," a behavioural pattern known as moral licensing (Grieder and others, 2022). This case illustrates how behavioural responses can both enable and undermine policy objectives.

At the micro level, behavioural insights have proven effective in translating policy goals into concrete changes in household behaviour. Even small, low-cost interventions can generate improvements in energy-use behaviours. A field experiment in India shows that the way information is framed matters: households receiving non-monetary messages highlighting the environmental and health impacts of electricity use reduced consumption by 18.4%, while households receiving messages focused on monetary savings did not significantly change their behaviour (Chen and others, 2017). Sometimes, even a simple voluntary pledge can offer unexpected benefits. In Japan, many households claimed to intend to reduce peak time electricity use but struggled to follow through. A voluntary commitment scheme helped bridge this intention-action gap by enabling participants to pledge reductions in advance, resulting in an 8% reduction in peak demand in the short run (Ito, Ida and Tanaka, 2018).

At the macroeconomic level, behavioural science plays a less direct but equally important role in influencing the effectiveness of major policy reforms. Support for carbon pricing, subsidy reform and green-investment programmes ultimately depends on whether households and firms perceive these measures as fair and manageable. An experiment in Germany found that support for higher carbon tax levels increases by 18 percentage points when revenues are recycled in ways that align with fairness preferences (Sommer, Mattauch and Pahle, 2022). Studies from Spain (Maestre-Andrés and others, 2021) and Sweden (Lindvall and others, 2024) similarly found that revenue framing increases carbon tax acceptance.

4.4.2. Behavioural science in practice: shaping household, firm and investor behaviour

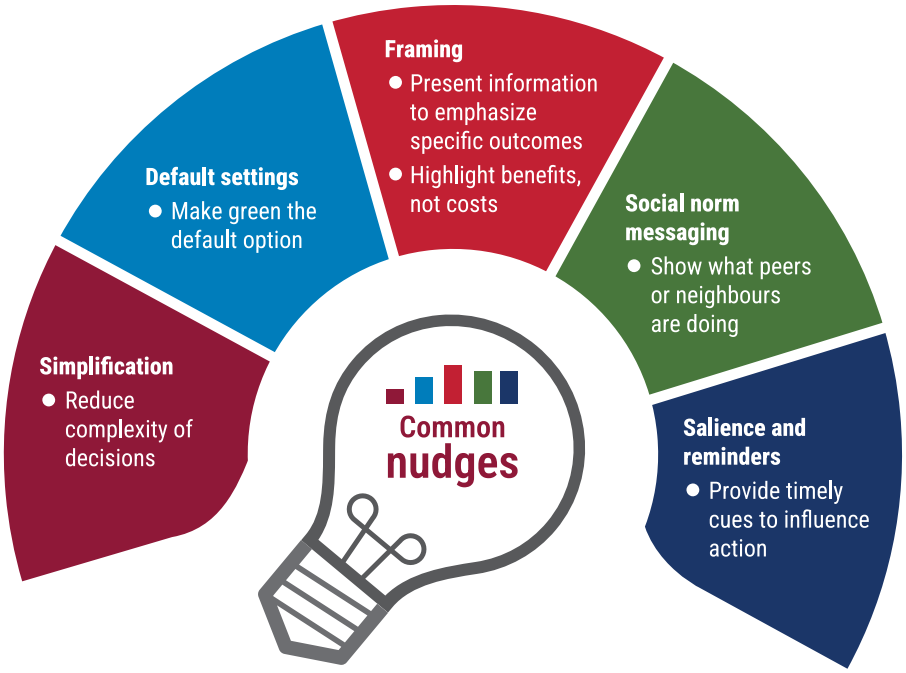
Understanding behavioural dynamics can help increase the effectiveness of implementing policy instruments discussed in chapter 3. Policy recommendations, such as carbon pricing, subsidy reform, energy-efficiency programmes and green finance, rely not only on sound design but also on how households, firms and investors respond in practice. These actors face distinct information constraints, incentives and behavioural biases, making differentiated behavioural interventions essential.

By addressing predictable behavioural tendencies, nudges offer a practical and low-cost way to improve policy uptake and compliance. Rather than altering policy ambition or economic incentives, nudges work by reducing behavioural frictions through subtle adjustments to the choice environment while preserving freedom of choice and allowing for easy opt-out. Nudges such as default options, reminders and simplified information (fig. 4.7) have been shown in large meta-analyses and government trials to increase participation across a wide range of policy domains while avoiding the financial costs of stricter enforcement (Benartzi and others, 2017; Mertens and others, 2022). Table 4.6 presents country examples demonstrating how these approaches have been operationalized to strengthen policy uptake and delivery.

Behavioural tools can help households respond to price, subsidy and clean-energy policies. For instance, framing carbon tax revenues around fairness and recycling increases public acceptance, while default options and simplification improve uptake of renewable electricity tariffs and responsiveness to price signals. Feedback and social norm messaging further strengthen demand-side efficiency by making energy use more visible, particularly where price signals are muted.

Behavioural science insights can also be used to affect the transition through firms, whose decisions determine technological upgrading, innovation and the pace of green investment. Recent evidence from the United States shows that while most SMEs express a desire to become more sustainable, only 5–18% of the surveyed SMEs have adopted all feasible measures and just 17% plan new steps soon. Around half report being unfamiliar with relevant

Figure 4.7. Examples of common behavioural nudges



Source: ESCAP.

Table 4.6. Examples of applying behavioural insights to selected policy options from chapter 3

Policy	Behavioural friction	Nudge used	Country example
Reducing fossil fuel dependence			
Fossil fuel subsidy reform	Low trust	Framing; social norm messaging	• **India:** National solidarity framing and social recognition increased voluntary surrender of LPG subsidies (box 4.5).
Carbon pricing mechanism	Low trust	Framing	• **Germany:** Framing carbon tax revenues as recycled to households increased public support (Sommer, Mattauch and Pahle, 2022). • **Switzerland:** Climate earmarking framing increased support for carbon tax increases (Grieder and others, 2022). • **Sweden:** Framing carbon tax revenues as redistributed to affected groups increased support for higher carbon taxes (Lindvall and others, 2024). • **Spain:** Climate earmarking framing increased carbon tax acceptability (Maestre-Andrés and others, 2021). • **Thailand:** Framing carbon tax information on fuel use in terms of climate impacts reduces fuel consumption (Muthitacharoen and others, 2025).
Increasing clean and renewable energy			
Public investment in grid expansion	Status quo bias, present bias	Default settings; framing	• **Germany and Switzerland:** Setting renewable electricity as the default increased household uptake (box 4.4). • **Switzerland:** Loss-framed messaging emphasizing foregone savings increased rooftop solar adoption intentions (Neumann and others, 2023).
Incentive frameworks	Complexity	Default settings; salience; simplification	• **United Kingdom:** Simplified star ratings and default enrolment increased participation in sustainable pension funds (box 4.7). • **Malaysia:** Introducing a clear, principle-based climate taxonomy reduced previous ambiguity and encouraged climate-aligned bank lending (Government of Malaysia, 2021).

Table 4.6. continued.

Increasing energy efficiency			
Bulk green procurement and demand aggregation; technology upgrade incentives	Low salience; status quo bias	Social norm messaging	• **United States:** Public disclosure requirements induced peer effects that reduced firm emissions (box 4.6).
Increasing energy access			
Blended finance for inclusive fintech	Present bias	Simplification	• **Uganda:** Simplified information through savings groups reduced present bias and increased saving toward solar purchases (World Bank, 2023b).

Box 4.4. Leveraging default options to promote renewable energy in Germany[a] and Switzerland[b]

Households often underutilize renewable electricity due to inertia and status quo bias, even when environmental awareness is widespread and green options are readily available. Germany and Switzerland provide clear evidence of how behavioural insights can address this challenge in a cost-effective way.

In Germany, a randomized controlled trial involving 41,952 households compared an opt-in design for green electricity with an opt-out default. Conditional on households purchasing a contract, only 7% chose green electricity under opt-in, compared with 69% when renewable energy was pre-selected as the default.

Similarly, evidence from Switzerland shows that changing the default electricity tariff from conventional to renewable energy can shift household behaviour. In a field study covering over 200,000 households, around 80% of customers remained on the renewable tariff once it was set as the default, even though prices were slightly higher and customers were free to opt out. Importantly, households did not increase their electricity consumption after switching.

These cases illustrate the power of default options as a behavioural tool. By leveraging human tendencies such as inertia and status quo bias, policymakers can nudge consumers towards sustainable energy choices without limiting consumers' freedom, imposing large additional costs or building new infrastructure.

[a] Ebeling and Lotz, 2015.
[b] Liebe, Gewinner and Diekmann, 2021.

Box 4.5. Using framing and social norms to support LPG subsidy reform in India[a]

India's liquefied petroleum gas (LPG) subsidy was historically delivered through a universal price support scheme, creating high fiscal costs and significant leakage to better-off households. From 2013, the government reformed the LPG subsidy system by replacing price subsidies with direct cash transfers to beneficiaries' bank accounts under the PAHAL (direct benefit transfer for LPG) programme, alongside the "Give It Up" campaign that encouraged higher-income households to voluntarily opt out of receiving the subsidy.

The voluntary surrender scheme relied heavily on behavioural strategies rather than formal mandates. Opting out was framed as an act of national solidarity that would enable poorer households to access clean cooking energy. Messages were endorsed by public figures and used identity cues that resonated with the middle class. Households that gave up their subsidy were publicly acknowledged on an online "honour list," strengthening social norms by signalling widespread participation.

Social-norm nudges were paired with efforts to reduce informational frictions. The campaign highlighted that cash transfers under PAHAL were reliable and transparent, helping overcome trust barriers that typically deter participation in subsidy reforms.

Together, identity framing, social recognition and credible information encouraged 1 million households to voluntarily give up their subsidy, improving the targeting of clean cooking benefits and reducing leakage.

[a] Khanna and Singh, 2015.

Box 4.6. Leveraging peer benchmarking to reduce emissions in the United States[a]

Firms often lack clear information about how their environmental performance compares with that of competitors, particularly in sectors where emissions data are complex and rarely disclosed. Without credible reference points, managers may underestimate performance gaps or face weak incentives to improve, reducing the effectiveness of environmental regulation.

Since 2010, large industrial facilities in the United States have been required to report detailed emissions data under the national Greenhouse Gas Reporting Program, with facility-level information publicly disclosed. Following disclosure, facility-level greenhouse gas emissions declined by an average of 7.9%.

Notably, the response operated primarily through peer benchmarking rather than compliance alone. After disclosure, within-industry dispersion in emissions fell by around 20–31%, indicating convergence towards peer norms as relative performance became visible. This pattern suggests that reputational concerns and social comparison influenced firm behaviour alongside regulatory requirements.

This case illustrates how transparent reporting systems can function as behavioural policy tools. By making environmental performance salient and comparable, policymakers can leverage peer effects to encourage emissions reductions, while preserving firms' flexibility in how improvements are achieved.

[a] Tomar, 2023.

Box 4.7. Using defaults and simplification to increase uptake of sustainable pension funds in the United Kingdom[a]

Pension savings represent one of the largest pools of long-term capital, yet individual savers often show low engagement with pension fund choices. As interest grows in aligning retirement savings with climate and sustainability objectives, behavioural approaches offer a way to test how alternative choice designs influence decision-making in complex financial settings.

To examine these effects, an online experiment was conducted in the United Kingdom in 2021 involving 1,560 pension holders. Participants were presented with a hypothetical scenario in which they received an email from their employer inviting them to review their pension fund options. They could remain in their existing default fund or switch to one of two alternatives. Participants were randomly assigned to a control group or one of three treatment groups testing different behavioural framings:

- Red flag: non-environmental pension funds were labelled with a red flag and text indicating potential environmental harm or high carbon exposure.
- Star rating: pension funds were labelled with star ratings reflecting their environmental impact, with the environmentally aligned fund receiving the highest rating.
- Green default: the environmentally aligned fund was pre-selected as the default, while participants retained full freedom to switch.

The results indicate that comparative performance signals and default settings had a stronger influence on stated pension choices than warning-based messages. Both the star rating and green default treatments led to statistically significant increases in selection of the environmentally aligned fund. The green default produced the larger effect, with 47.7% choosing the sustainable option, compared with 35.2% under the star rating treatment. The red flag treatment had no statistically significant impact.

[a] Behavioural Insights Team, 2022.

regulatory requirements, while high perceived time and cost burdens are common reasons for inaction (OECD, 2025a). Tools such as peer benchmarking (box 4.6), reputational incentives and simplified access to information on low-carbon technologies can help overcome these barriers by activating social comparison and reducing uncertainty. In the Philippines, for example, firms with high electricity consumption can switch to renewable electricity suppliers, yet uptake remains limited because many businesses are unaware of the option and face complex eligibility and application requirements (SUSTAINARUMBLE and The Climate Reality Project Philippines, 2023).

Among investors, behavioural tools can redirect capital towards sustainable assets by shifting perceptions of risks and returns. Mobilizing private capital is essential for scaling up the green finance instruments proposed in chapter 3. However, large pools of capital often remain locked into conventional assets due to status quo bias, short-termism and risk misperception. By reframing sustainable assets as stable, forward-looking investments, policymakers can steer capital toward low-carbon sectors and correct cognitive biases that hinder climate-resilient investment decisions.

4.4.3. Applying behavioural science: opportunities and risks

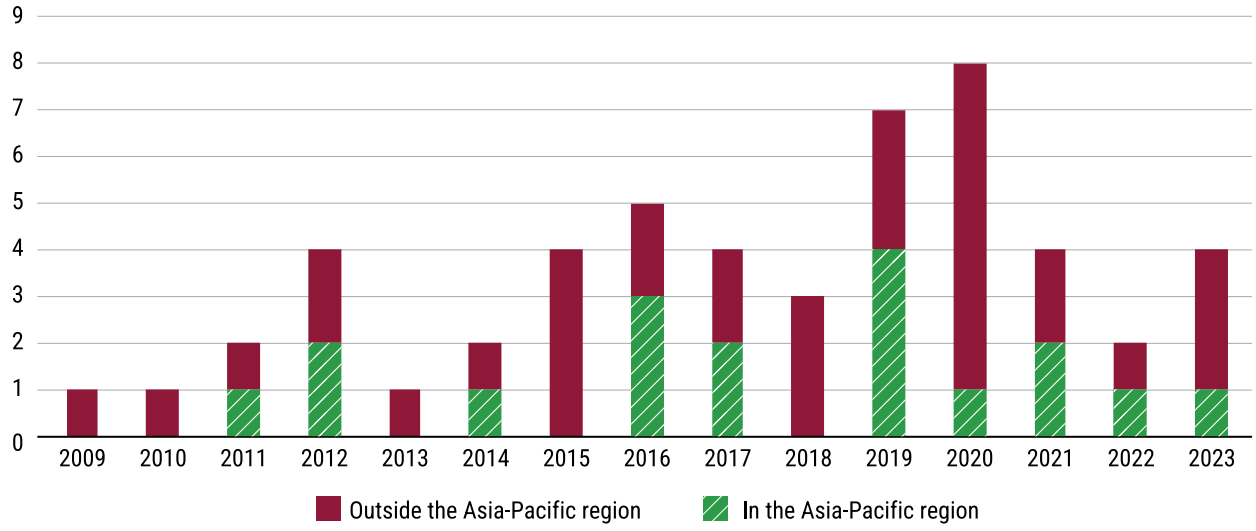
Behavioural science has increasingly been used worldwide to support evidence-based policymaking by allowing governments to test how people respond to policy measures before they are scaled. This understanding has translated into formal guidance at national and subnational levels, including in Malaysia's national behavioural insights framework (Government of Malaysia, 2026a), Australia's regulatory experimentation approach (Government of Australia, 2026) and the United Kingdom's government-wide test-and-learn agenda (Haynes and others, 2013). Together, these

developments reflect a broader shift towards evidence-based, iterative policymaking that places citizen behaviour and lived experience at the centre of policy design.

In response, many governments have begun to institutionalize behavioural capacity within public administration. By 2023, more than 50 behavioural insight units (BIUs) operate across governments worldwide, reflecting a strong appetite for tools that can improve policy uptake, strengthen implementation and address complex public challenges (fig. 4.8 and 4.9).

International experience suggests that behavioural capacity is most effective when built gradually and embedded within existing government structures. Many governments begin with a small, centrally located behavioural team that is aligned with national priorities and can support cross-sectoral initiatives. These teams often evolve into specialized units embedded in ministries such as energy, finance, environment or health. Experiences from Australia (Government of Australia, 2026), Japan (Government of Japan, 2017), New Zealand (Government of New Zealand, 2025) and Singapore (Government of Singapore, 2026)

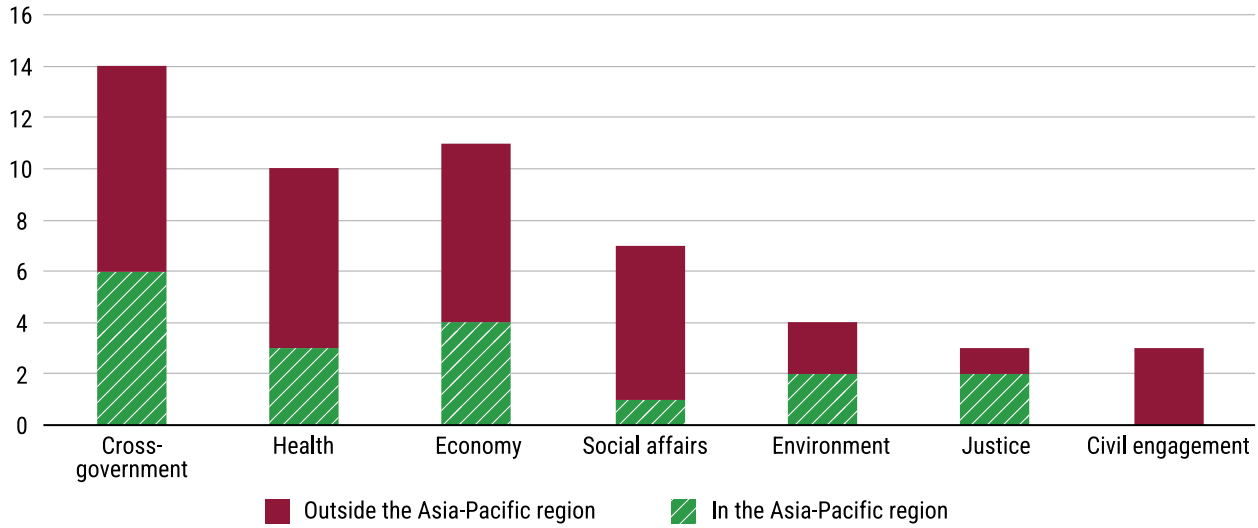
Figure 4.8. Number of new government-affiliated BIUs established each year, 2009–2023



Source: Data are derived from the OECD Observatory of Public Sector Innovation (OPSI) BIU database and include supplementary government BIUs identified through additional desk research.

Note: Coverage reflects voluntary disclosure and is not exhaustive. Results should be interpreted as indicative.

Figure 4.9. Number of government-affiliated BIUs by thematic focus, 2023



Source: Data are derived from the OECD Observatory of Public Sector Innovation (OPSI) BIU database and include supplementary government BIUs identified through additional desk research.

Note: Coverage reflects voluntary disclosure and is not exhaustive. Results should be interpreted as indicative.

show how such structures can help integrate behavioural insights into areas including energy transitions, public health, financial inclusion, environmental protection, education and public-sector efficiency.

In the Asia-Pacific region, however, the institutionalization of behavioural insights remains uneven. A small group of early adopters, including Australia, Japan, New Zealand and Singapore have established formal, centrally coordinated behavioural insights units, while others such as India (Ashoka University, 2026) and Malaysia (Government of Malaysia, 2026b) have developed behavioural capacity selectively within specific sectors or subnational governments to address concrete implementation challenges. In many countries, including China (UNDP, 2024), Indonesia (Indonesia Behavioural Economics Forum, 2026), Thailand (Clark, Koh and Kurniawan, 2024) and Viet Nam (Asian Productivity Association, 2025), behavioural approaches remain at an early or experimental stage.

Behavioural approaches are most valuable when used to strengthen implementation rather than replace core policy instruments. They can strengthen communication around reforms, increase uptake of renewable-energy programmes, improve behavioural responses to carbon pricing and facilitate smoother subsidy reforms. However, behavioural interventions cannot replace robust compensation mechanisms, strong institutions or well-designed industrial policies. Their effectiveness depends on careful integration into wider policy frameworks.

Safeguards are essential to ensure that behavioural interventions remain transparent, fair and trustworthy. Behavioural tools should support, not bypass public deliberation and informed choice. Interventions that covertly steer behaviour or advance narrow interests risk eroding trust and undermining policy durability. Policymakers should apply behavioural insights in ways that empower individuals, preserve autonomy and promote equitable outcomes.

Equity should be integral to the design, testing and evaluation of behavioural interventions. While defaults, prompts and social-norm messages can generate substantial impacts, they may benefit groups unevenly. Interventions should therefore be tested for distributional effects, especially where affordability and fairness shape political acceptance.

4.5. Conclusion

A central challenge facing the transition to an environmentally sustainable economy in Asia and the Pacific is not only policy design, but effective implementation. As shown in chapter 3, governments across the region have access to a growing set of fiscal, monetary and financial policy instruments capable of accelerating decarbonization and the transition to an environmentally sustainable economy while supporting socioeconomic prosperity. Yet progress remains uneven, showing that ambition and technical feasibility alone are not sufficient to guarantee results on the ground.

Integrated scenario planning provides a critical foundation for navigating these complexities and managing trade-offs. By combining long-term integrated assessment models with sectoral, distributional, cost–benefit and multi-criteria tools, governments can explore alternative pathways, test robustness under uncertainty and identify synergies and tensions across macroeconomic, social and environmental objectives. When embedded in policy processes, scenario-based assessment supports informed sequencing, reduces adoption risks and strengthens coherence between short-term measures and long-term development strategies.

Analytical insights alone, however, are insufficient without attention to political economy dynamics. Energy transitions are inherently political processes that redistribute rents, reshape power relations and challenge incumbent interests. Political survival pressures, fragmented government coordination, entrenched state-owned enterprises, justice deficits, contested public narratives and international asymmetries all influence whether reforms advance, stall or are reversed. Incorporating a political economy perspective enables policymakers to anticipate resistance, build coalitions and design reforms that are both technically sound and institutionally credible.

The "build, align and consolidate" framework translates these insights into a practical implementation pathway. "Building" focuses on strengthening coordination, legitimacy and early momentum; "aligning" manages political and distributional risks as reforms deepen; and "consolidating" embeds transitions through green industrial development, job creation and the emergence of

new economic beneficiaries. This sequencing reflects the reality that durable transitions depend on expanding the number of actors with a material stake in reform success.

Behavioural science further complements this framework by addressing last-mile implementation challenges. Even when policies are well designed and politically endorsed, they may underperform if households, firms and investors do not respond as expected. Cognitive biases, habits, limited attention and social norms shape how policies are perceived and acted upon, influencing uptake, compliance and public acceptance.

Behavioural tools can therefore enhance policy effectiveness at relatively low cost by reshaping choice environments. Nudges such as default options, simplified information, feedback mechanisms and social-norm messaging complement regulatory and market-based instruments by improving uptake without restricting choice. When integrated into broader policy frameworks, behavioural approaches help translate policy intent into observable behavioural change, reinforcing both effectiveness and legitimacy.

Taken together, the three strands of analysis form a coherent implementation pathway. Analytical tools underpin policy ambition by making trade-offs explicit; scenario results turn evidence into a common negotiating space for reform. Political economy analysis helps interpret these results by revealing how power relations, institutional constraints and vested interests shape what can be implemented and when. Behavioural science complements this perspective by explaining why modelled incentives may not translate into real-world responses by households, firms and investors, and by identifying behavioural constraints to improve policy uptake.

The decisive step is feedback. Political and behavioural realities can recalibrate modelling assumptions on timing, enforcement and uptake, so that transition pathways reflect what can actually be delivered, not what is theoretically optimal. When evidence, political economy and behavioural insights are integrated in this way, governments move beyond aspirational planning toward reforms that can be implemented, sustained and scaled.

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> … we witness in real time the effects of a dependence on fossil fuels, where every conflict risks sending shockwaves through the global economy. Home-grown renewable energy provides a secure exit plan for countries to escape this trap.

António Guterres
Secretary-General of the United Nations

Asian and Pacific developing economies, on average, have weathered rising global economic protectionism and uncertainty more resiliently than most analysts expected. However, headline numbers mask challenging conditions faced by some countries and population groups in this vast and diverse region. Further intensification of the recent conflict in the Middle East and re-escalation of trade tensions pose significant risks to the near-term economic prospects of the region.

Pursuing long-term socioeconomic prosperity for all has become a daunting task amid rising geo-economic fragmentation and conflicts. A transition to an increasingly demand-led economic growth model, supported by both domestic and regional sources, can be a way forward. This will require proactive and innovative national policymaking and stronger regional cooperation.

At the same time, the region needs to undertake a transition towards an environmentally sustainable economy. How this can go hand in hand with socioeconomic prosperity is an important policy consideration. To support countries in this regard, the *Economic and Social Survey of Asia and the Pacific 2026* proposes a thinking framework for how to integrate sustainability into economic policymaking, with a focus on a transition towards clean and renewable energy.

Going beyond a discussion of policy options, the analysis examines how the use of a political economy approach can help governments build coalitions and deliver long-lasting reforms. Using insights from behavioural science, the report also demonstrates how practical nudges can increase the uptake of policies that simultaneously foster macroeconomic stability, economic growth, people's well-being and the energy transition.

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