

ASEAN and the transition: Initial corporate perspectives

Sustainability Insights Series

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Key findings and implications

The energy transition is one of the key challenges faced by policymakers and corporates across the ASEAN region. To understand how companies across ASEAN approach the energy transition especially against the backdrop of the current geopolitical climate we started interviewing representatives of some of the key sectors in the region from late March. In this report we present some of the early readings from that work and highlight some of the associated themes and potential financing implications. As we expand our conversations with ASEAN corporates we plan to update our findings. On this page we summarise some of the findings of the survey so far and highlight what the implications of them may be.

Key Findings	Aspects	Potential Implications
Climate risk seen as business critical by all	All respondents view climate risk as a material risk to their company and show concern regarding risk from flooding, droughts and other extreme weather events	- Adaptation financing needs to be scaled more including the use of blended finance, green bonds or adaptation bonds - Risk mitigating funding structures need to be developed more - Integrate nature risk into credit and advisory frameworks
Transition momentum is real but uneven	All companies have adopted emission reduction strategies but engagement centres mostly on solar, energy efficiency and circularity solutions. Engagement appears below average for industrials and commercial real estate	- Scaling and financing of biofuels, wind, EV and CCS is needed - Carbon credit market development can assist broader adoption - Sector-based solution and financing strategies can help scale momentum
Strong belief that a low carbon economy adds value to a business	Almost 75% of respondents believe that a low carbon economy is positive for their company.	Showcasing the resilience and cost reduction potential of transition solutions can help drive the development of decarbonisation strategies for corporates yet to embrace these solutions.
Affordability is seen as the biggest hurdle for acceleration	The cost of solutions is highlighted as the key barrier to transition acceleration. Consumer willingness matters far less.	- Stronger tax and investment policies can help reduce transition costs - Affordability concerns should reduce as renewable power and storage benefit from greater economies of scale
Infrastructure is the central, binding constraint	Grid capacity, storage, EV charging, and broader system readiness are lagging demand. Data centre development is likely to further increase infrastructure needs.	- Utilities and the broader grid supply chain represent a large capital deployment opportunity for investors and the finance sector - Blended finance can be deployed for grid + storage solutions - Transition finance and SLLs can be tools for transitioning utilities
Transition pathways may be more gradual or hybrid	Respondents expect coal consumption to decline but their answers suggest that gas may become a bridging fuel until renewable and energy storage capacity can scale sufficiently.	- Transition finance and SLL can be used to assist coal and gas companies in their transition - Sustainable bonds can help accelerate scaling of renewable technologies and thereby quicken the switch away from coal and gas.
Limited impact seen from Middle East conflict	Survey held after start of the Middle East conflict, however, answers on engagement with renewable power supply, efficiency measures and fossil fuel outlook suggest minimal impact.	- A long-term conflict may enhance the outlook for renewable power, energy storage, EVs and biofuel (see Middle East conflict) - This may also benefit demand for sustainable finance solutions

ASEAN's transition: taking the pulse from corporates

ASEAN is home to some of the world's fastest-growing economies and nearly 700 million people, with the population expected to grow by roughly 80 million over the next 25 years. As incomes rise and industrialisation deepens, electricity demand will increase sharply, making power system expansion one of the region's most critical strategic priorities. Governments face the task to meet this rapidly growing demand for power while improving affordability, resilience, and energy security. Recent geopolitical shocks, trade disruption, and supply chain uncertainty have reinforced the need to reduce reliance on imported fuels and build more domestically anchored energy systems.

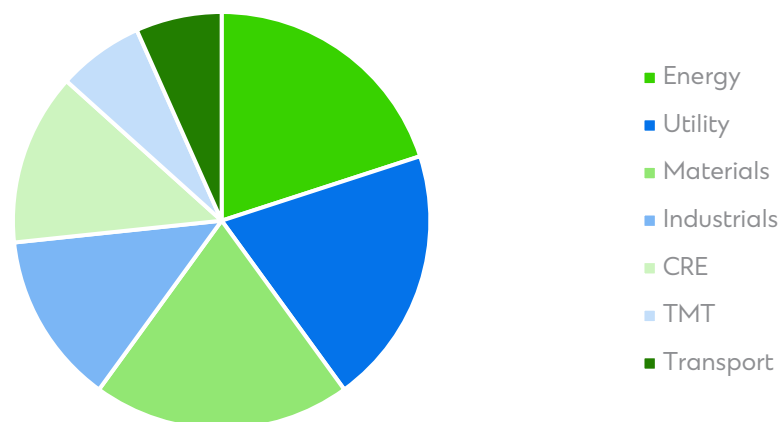
This is why transition investment now matters in practical, not just environmental, terms. Renewable power, storage, grids, and related technologies can help countries expand power supply, strengthen economic resilience, and improve long-term competitiveness. The transition is increasingly being driven not only by climate goals, but by the need for secure, scalable, and economically resilient energy systems.

Key to achieving a successful transition is that the corporate sector engages with this too. With this in mind we have begun engaging with companies across the ASEAN region about their transition strategy, where momentum is building, where investment is lagging, and what is preventing faster progress. For our initial corporate assessment we selected some of the sectors that are central to the transition discussion such as energy, utilities and materials (Figure 1). These sectors account for 60% of responses while their combined revenue represents more than 80% of total turnover generated by the companies that we've engaged with so far (Figure 2).

Drawing on focused input from 15 corporate clients across ASEAN, this report identifies key themes and early signals emerging from the survey. Given the targeted nature of our qualitative analysis, such a level of input can be sufficient to start identifying meaningful themes, particularly as the respondents are relevant to their sectors.¹ As we continue to broaden our engagement with ASEAN corporates, we expect to revisit these findings and track which solutions gain the strongest traction across different sectors.

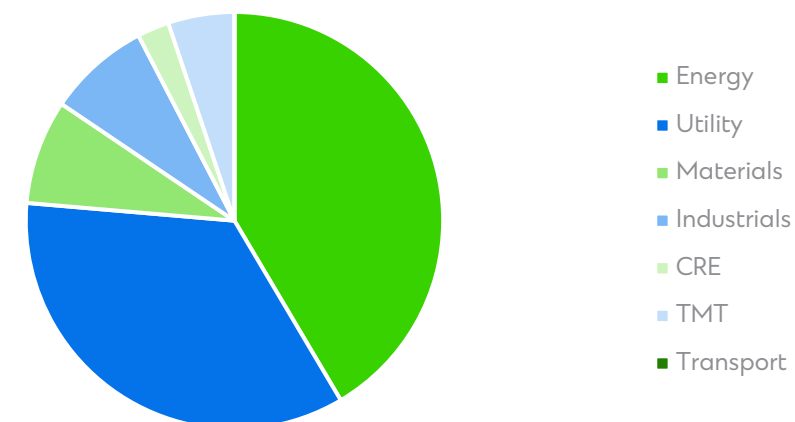
Survey responses by sector

Figure 1



Sector share in survey by 2025 revenue

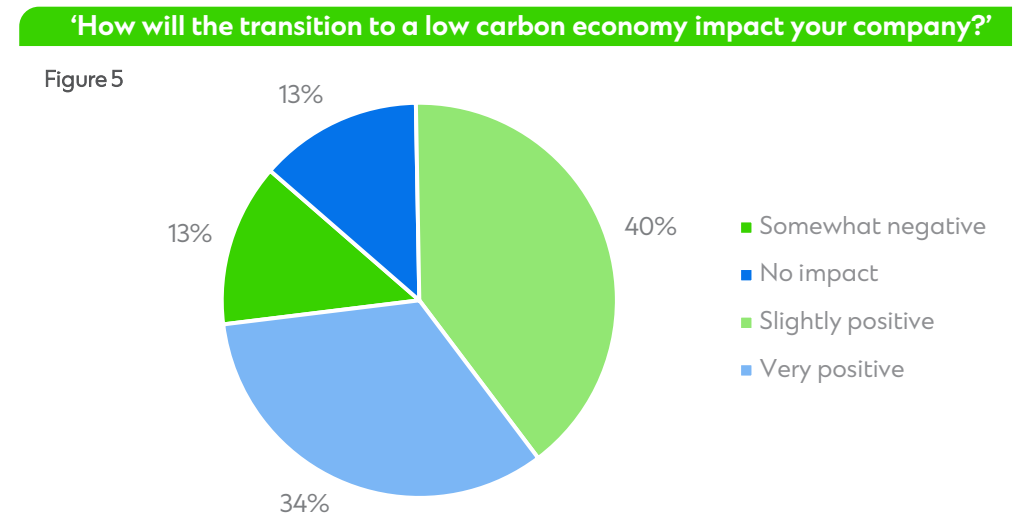
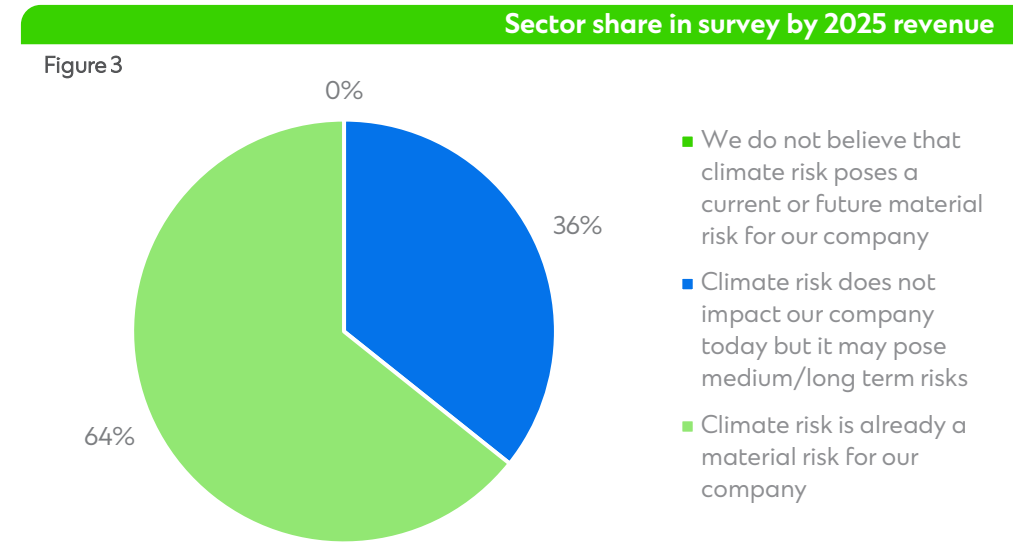
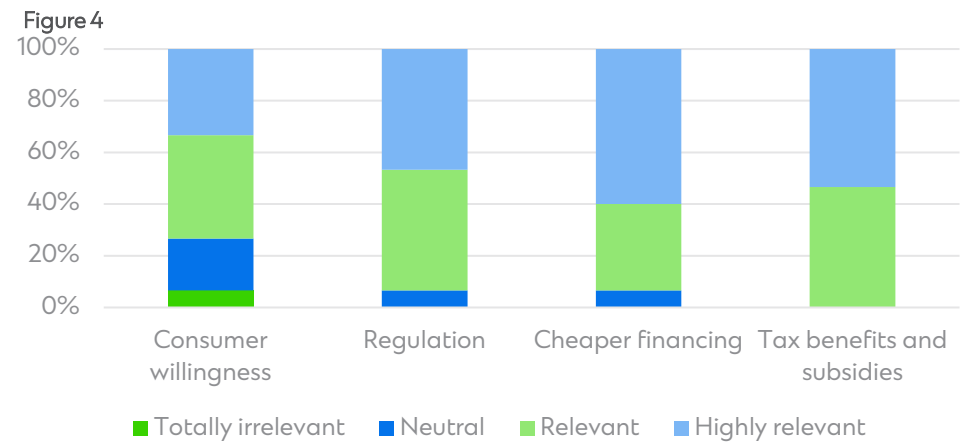
Figure 2



Climate risk is seen as a material issue by all surveyed companies

- **Climate risk is a real issue** for all companies we engaged with as 64% of them view it as a current material risk for their business while the remaining 36% believe this to be true on a medium to long-term view (Figure 3).
- **We notice optimism:** Current climate initiatives may be successful as c70% of respondents believe that long-term emission targets will ‘somewhat likely’ be achieved. However, the survey also implies that policymakers, corporates and consumers may have to intensify their efforts as only 13% of respondents believe that long-term emission targets are ‘extremely likely’ to be met.
- **Factors that drive success:** To successfully transition ASEAN economies requires engagement from all stakeholders. Our survey suggests that reducing the financial cost of the transition through cheaper financing or increased tax benefits and subsidies is especially relevant to corporates across ASEAN economies (Figure 4).
- **The transition can be profitable.** Investments needed to transition ASEAN economies are worth it as 74% of survey respondents believe that a transition towards a low carbon economy will benefit their company’s outlook (Figure 5).

Relevance to achieving national emission reduction targets



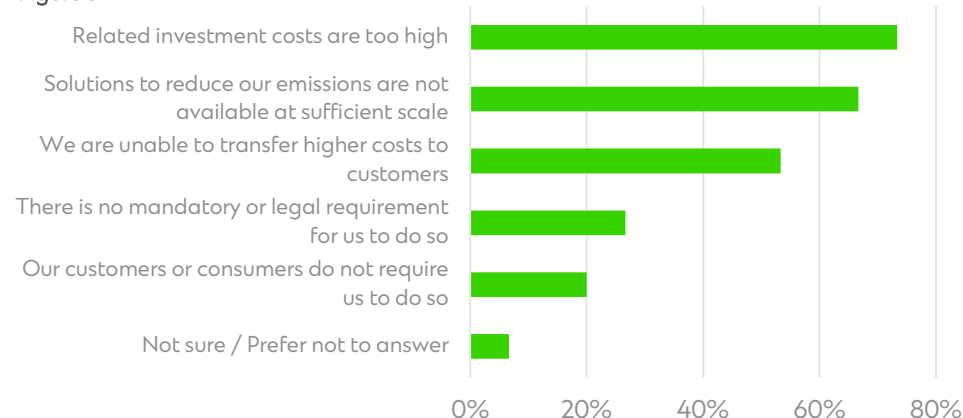
Engagement with transition solutions is strong and set to grow more

Energy transition solutions provide dual benefits to ASEAN countries as they improve economic resilience through creating energy independence and they lower the carbon intensity of their economies. Initial results from our survey indicate that ASEAN economies may well be on track to reap these benefits considering strong corporate engagement.

- **Reducing energy and material dependency appears key** as corporates improve their energy and water efficiency and have incorporated circular economy solutions (Figure 6).
- **Solar power leads the transition** as almost 9 out of 10 respondents say that their company is engaging with solar power technology (Figure 6). Solar is also the solution most likely to generate stronger than expected results according to our survey (Figure 7).
- **Engagement set to rise** as all respondents expect their company to increase investments in transition solutions during the next five years and all aim to improve the sustainability of their broader supply chain too.
- **Cost matters** as investment costs and a lack of economies of scale are cited as the main factors that delay transition investments (Figure 8). Therefore, as transition solutions become cheaper corporate engagement in ASEAN with the transition may rise further.

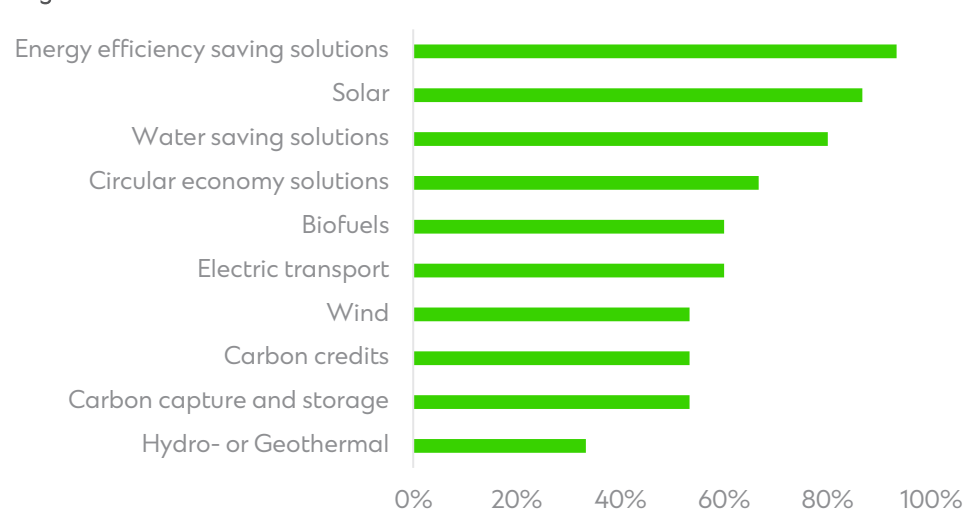
“What reasons my cause your company to delay transition investments?”

Figure 8



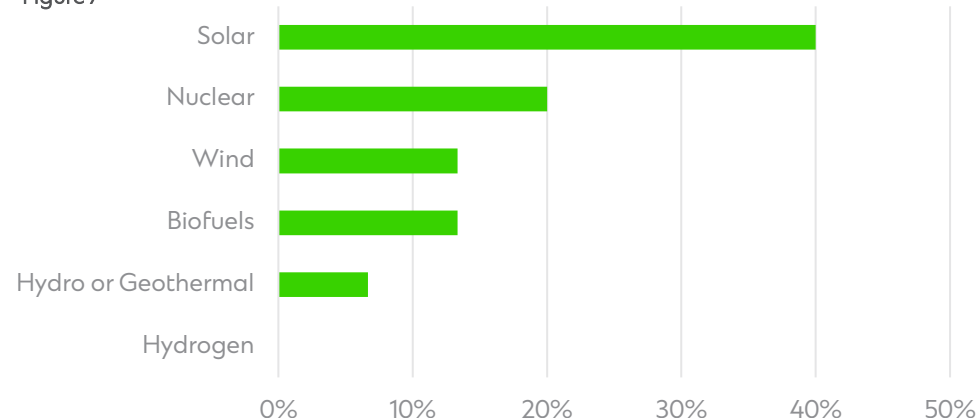
“Which solutions does your company engage with” % of respondents

Figure 6



“Growth outlook to be stronger than expected”, % of respondents

Figure 7



Grid infrastructure and batteries are central to ASEAN's drive to electrification

To electrify the economy requires grid and battery investments

On pages 13 and 14 we outline electricity's growing role as a power source for economies across the ASEAN region. The key challenge is to balance increasing demand for electricity from consumers purchasing more electric goods, the development of electric vehicles and the rise of data centres with the growing the level of renewable power generating capacity that is being established across the region. To do this requires investments in grid infrastructure and energy storage solutions such as batteries.

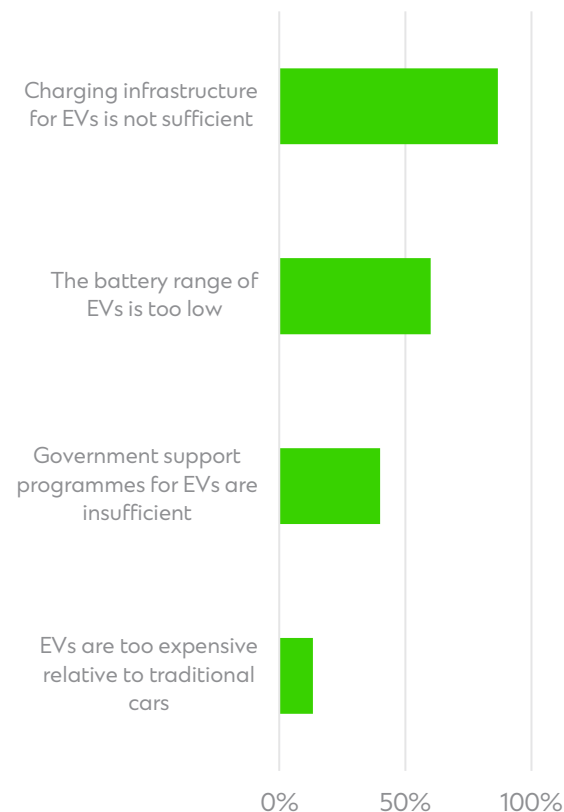
For a more detailed overview of grid-related challenges across the ASEAN region we refer to the most recent Southeast Asia's Green Economy report ([link](#)).

Our discussions with ASEAN corporates suggest that infrastructure and battery investments will be key to allow ASEAN economies to electrify.

- More than 70% of respondents expect their local transport system to electrify but a lack of EV charging infrastructure is seen as the key hurdle for this (Figure 9).
- More than 90% of respondents say that their companies want to use batteries, however, a lack of supply and high cost are seen as the key hurdles.
- Most respondents see data centre and AI as positive for their company's outlook but they believe that more renewable power generating capacity is needed for this (Figure 10). To connect more renewable power to the grid requires additional grid capacity investments.

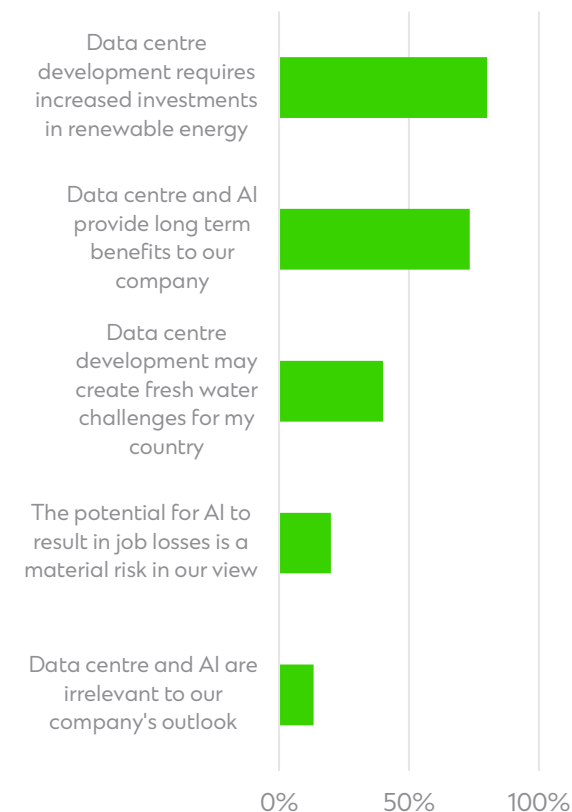
"What are the key hurdles to transport electrification?"

Figure 9



"What is your view on data centres and AI?"

Figure 10

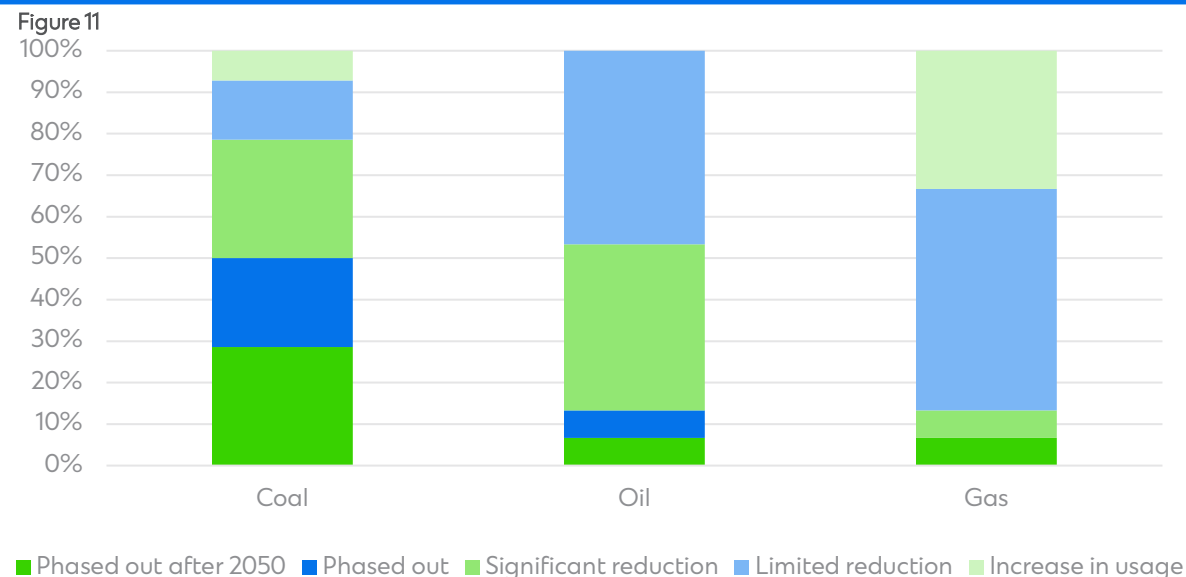


What about the outlook for traditional power sources?

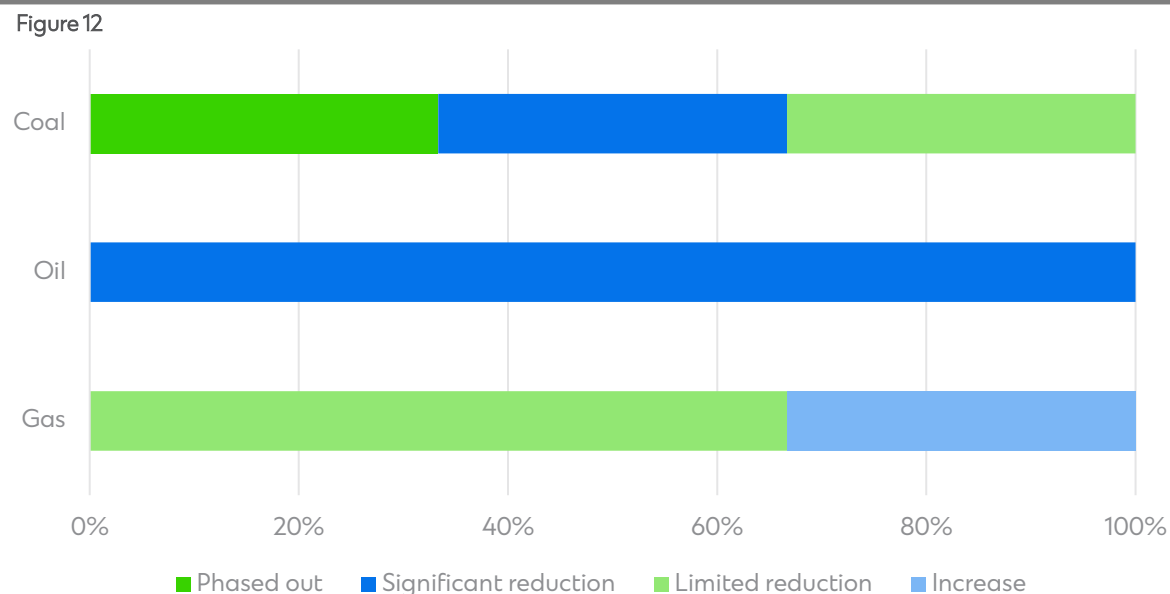
Our survey respondents not only indicate that low emission solutions are needed to achieve energy security and climate-related emission goals but also that their companies are likely to engage with these solutions more in the future. With that in mind we also wanted to understand how they see the outlook for coal, oil and gas.

- **Coal:** Figure 21 on page 14 shows that most countries across ASEAN and Australia currently rely on coal for a significant share of their electricity generation. A successful transition towards renewable power solutions would allow countries to lower their reliance on coal. Our survey shows that c50% of respondents indeed believe that coals will be phased out, either by 2050 or thereafter (Figure 11). Not all survey respondents appear convinced that renewable power will replace coal as c20% expect only a limited reduction or even an increase in coal consumption.
- **Oil:** Just over 50% of respondents expect oil consumption to decline significantly or even be phased out (Figure 11). This is not surprising given that oil is largely used in the transport sector and that 73% of respondents expect their local transport sector to be electrified.
- **Gas:** ASEAN corporates expect demand for gas to reduce more slowly than for oil or coal. One possible explanation for this may be that they believe that until sufficient renewable power generating capacity with storage capability is developed gas could be seen as a lower emission replacement for coal. Utility companies are central to power generation and distribution. Their answers for the traditional fuels support our survey's broader findings (Figure 12) which may suggest that gas plays a larger role than coal in meeting ASEAN's growing electricity demand until countries are able to rely fully on low emission, cheaper and local renewable power.

"How will your country's use of the following fuels change by 2050?"



Utility companies view on use of different fuels by 2050



Nature-related risks including water need investment too

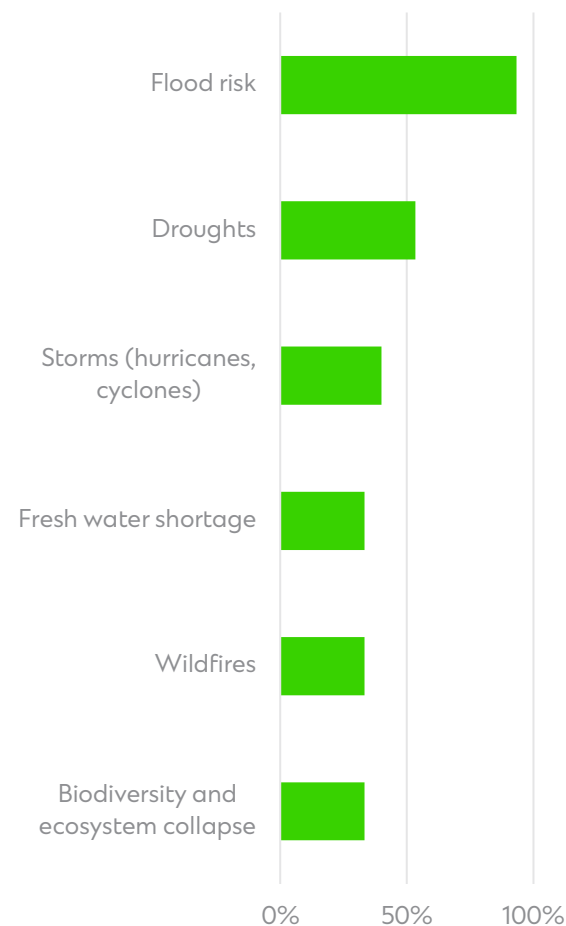
ASEAN corporates worry about nature-related risks

Our survey highlights that policymakers need to do more than just focussing on energy transition solutions to address the broader climate concerns held by ASEAN corporates.

- **Climate risk:** We asked our respondents which climate risks are material for the medium to long-term outlook of their company. More than 90% of them highlighted flood risk as a problem (Figure 13) including every surveyed energy and utility company. This is relevant for the topic of energy security given that these companies are central to the topic of renewable power generation and distribution. Other climate risks frequently noted as material to our surveyed corporates include droughts and storms.
- The climate risks highlighted in Figure 13 may not be addressed fully through the development of energy transition solutions. Our survey therefore implies that to minimise these climate risks means that energy transition, or climate mitigation, solutions need to be complemented by developing climate adaptation strategies.
- **Water is a growing issue:** We also asked ASEAN corporates whether water represents a challenge in their view. Only 7% of respondents do not see water as a problem for their company while 40% believe it to be a significant and growing challenge for their country and overall economy (Figure 14). The development of data centres is an additional source of concern for our respondents as 40% of them noted that these may create freshwater problems (Figure 10 on page 6).

“Which of the following represent material risks to your company?”

Figure 13



“In relation to water scarcity which of the following apply in your view?”

Figure 14



Sustainable finance solutions as a possible route to closing the funding gap

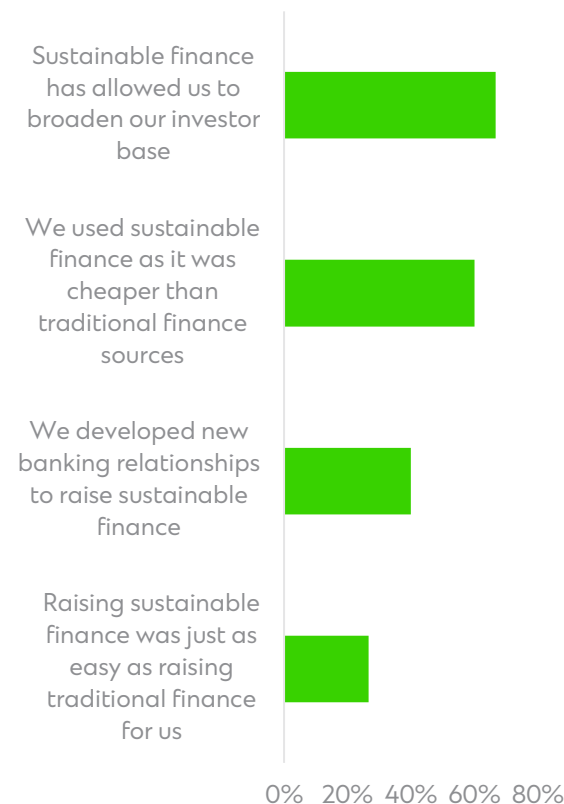
ASEAN corporates worry about nature-related risks

On page 17 we show that annual investment requirements to create a low carbon economy across ASEAN may cost USD 400 billion per year. Current investment levels, however, are significantly lower than that. Sustainable finance solutions may provide a route to help close the funding gap for energy transition solutions. Our survey provides supporting data for this.

- **Engagement with sustainable finance high:** When we asked our respondents whether their company had already raised finance using sustainable solutions all said that this was the case. Furthermore, all respondents also indicated that they expected their company to do so in the future too. Sustainable finance solutions that our respondents expect their companies to use most include green and sustainability linked bonds or loans (67%) and blended finance (53%). Social bonds may not experience similar levels of activity as only 13% of respondents expect their company to use these.
- **Sustainable finance provide ASEAN corporates with benefits:** The majority of our respondents indicate that accessing sustainable finance has allowed them to expand their investor base and that it was cheaper than traditional finance sources (Figure 15). Some 40% indicated that they have also been able to develop new banking relationships through raising sustainable finance. To help scale sustainable finance in the region the finance sector can use experiences like these when discussing opportunities with companies that have yet to access the sustainable finance market.
- **Carbon markets may provide additional upside** as all respondents that are familiar with their company's carbon market strategy expect it to be active in either selling or buying carbon credits in the future. Currently more than 40% say that their company doesn't (Figure 16).

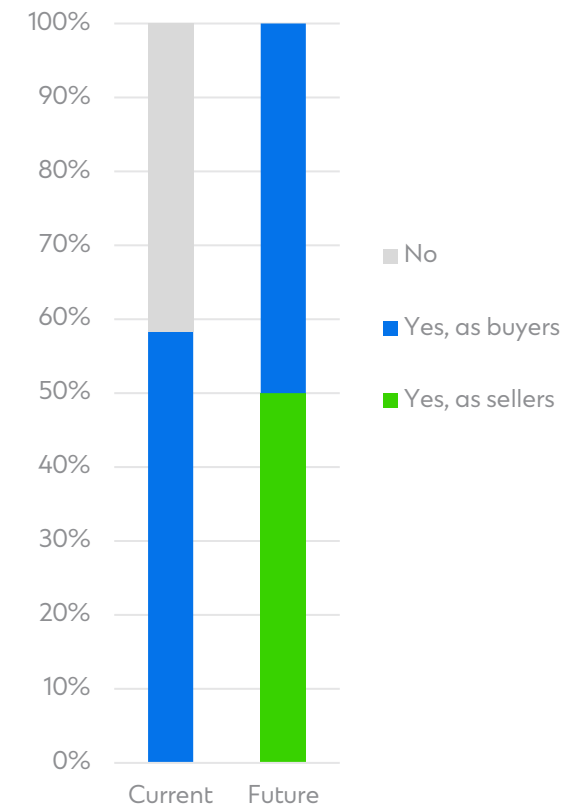
"Which of the following statements do you agree with?"

Figure 15



"What is your company's engagement with carbon markets?"

Figure 16



Tracking relative transition and sustainable finance engagement by sector

To understand relative engagement with the energy transition and sustainable finance solutions we have developed a ranking tool that uses an equal-weighted approach to six transition- and five sustainable finance-related questions from our survey (Figure 18). Based on the initial responses to date we can make the following observations:

- Despite engaging relatively strongly with energy transition solutions the surveyed ASEAN utilities do not use sustainable finance solutions as actively as some other sectors (Figure 17). This apparent mismatch may signal an opportunity for the finance sector in ASEAN to explore potential sustainable finance opportunities for utilities in the region.
- The transition and finance scores for the surveyed commercial real estate and industrial companies are lower than for the other sectors. These companies may need guidance first on how transition solutions can help strengthen their operations which can then be followed by discussions regarding how sustainable finance can help fund these solutions.

As we continue our conversations with corporates across the ASEAN region we will update this tracking tool for relative sector engagement with the transition and sustainable finance.

Transition versus finance score by sector: initial results

Figure 17

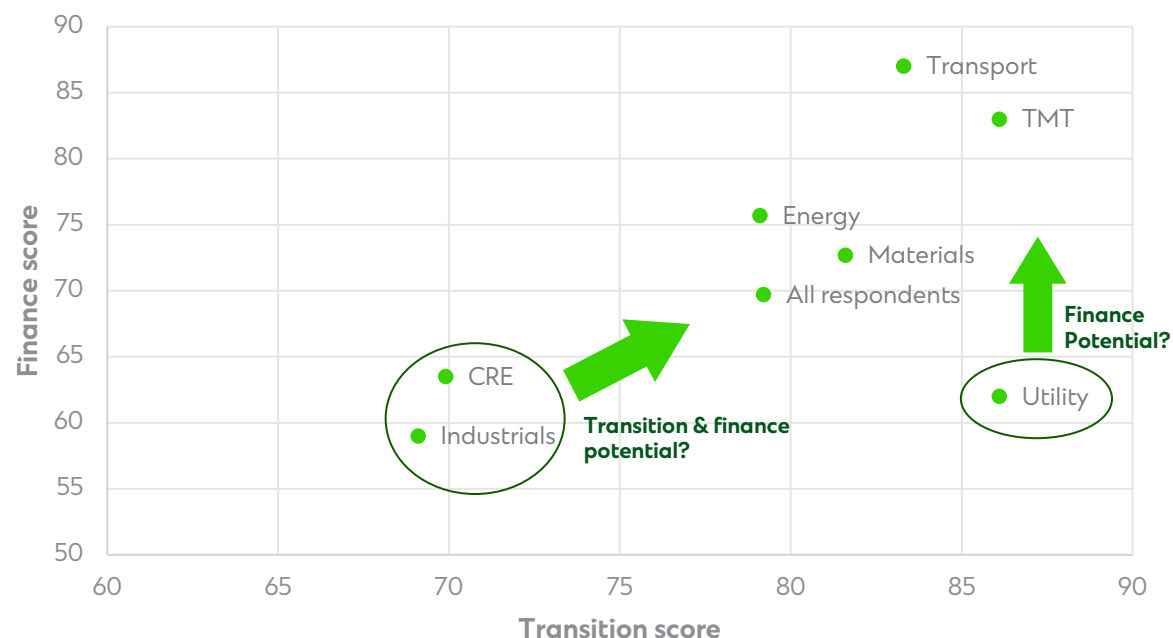


Figure 18

	Ranking component	Impact on the overall score
Transition score		
	Strength of developed strategy	Rewards whether a formal decarbonisation or net-zero strategy exists.
	Breadth of transition solution	Higher scores indicate broader current engagement with transition solutions.
	Future low-emission investment intent	Captures willingness to expand transition capex over the next five years.
	Supplier sustainability engagement	Recognises transition action extending into the supply chain.
	Operational transition readiness	Measures execution readiness in transport, storage and fuel switching.
	Transition solution outlook	Higher optimism signals stronger engagement with transition opportunities.
Finance score		
	Current sustainable finance use	Rewards actual financing activity rather than stated interest only.
	Future sustainable finance intent	Captures future financing appetite for transition-related assets.
	Sustainable finance instrument breadth	Higher scores reflect broader financing toolkits.
	Observed financing benefits	Rewards evidence that sustainable finance has produced tangible benefits.
	Carbon market engagement	Includes adjacent transition-finance activity beyond loans and bonds.

Key take aways: Areas of focus for ASEAN corporates

Our discussions with ASEAN corporates so far show that they recognise the transition as a strategic, economic, and risk management priority, but they also note that cost and infrastructure constraints are primary bottlenecks to acceleration.

- **Transition momentum is real** Corporate engagement is high, but concentrated in scalable, near-term solutions. Deep decarbonisation (storage, CCS, hydrogen) remains limited
- **Economics will determine pace of transition** Cost, financing access, and policy incentives are the primary levers for corporates. The transition is seen as profitable but not yet fully bankable.
- **Infrastructure is the main binding constraint** Grid, storage, and EV infrastructure gaps are slowing the electrification. Data centre growth will further strain power and water systems
- **The ASEAN transition will be gradual and hybrid** Coal usage may decline while gas plays a bridging role. Renewables expansion is necessary but not yet sufficient
- **Nature risks are the “next frontier”** Water stress and extreme weather risks are now material for corporates. Adaptation investment is not yet keeping pace with mitigation
- **Minimal impact from Middle East conflict detected** given answers on engagement with renewable power supply, efficiency measures and fossil fuel outlook.

Transition position and relevance	Investment needs: areas of focus	Key challenges	Financing possibilities
Utilities			
- Central to electrification - Renewable power generation - Distribution: grid expansion	- Grid infrastructure - Battery storage - Renewable capacity	- High upfront capital intensity - Project execution (permitting, delays) - Lower use of sustainable finance	- Sustainable bonds for mature renewable technologies - Blended finance for grid + storage - Transition finance and SLL for transitioning utilities
Energy			
- Core to low emission energy supply - Coal and gas exposure - Gas may play bridging role	- Renewable capacity growth - Energy efficiency and storage - CCS and hydrogen longer term	- Challenging economics - Regulatory support and incentive schemes (pricing support)	- Renewable assets: green loans and bonds - Mixed asset portfolios: transition bonds and loans - Blended finance, concessional capital and offtake-backed financing for emerging solutions (CCS, hydrogen)
Materials			
- Circularity, resource productivity - Water stress and nature risks	- Energy efficiency upgrades - Process innovation - Water and waste circularity	- Economics and bankability of projects - Exposure to volatile commodity cycles	- SLL, SLB and asset-backed financing for efficiency upgrades - Green loans or bonds for circularity projects with environmental use of proceeds
Industrials			
Energy intense manufacturing, construction and equipment	- Electrification of equipment/fleet - Onsite efficiency, fuel switching - Power and water reliability	- Credible transition plans needed to enhance investment case and funding - Stronger policy support needed	- Early stage: SLL, transition working-capital facilities, supply-chain finance with sustainability features - Mature stage: layering in of green loans and bonds

ASEAN & the transition: Framing the challenge

Electricity consumption growth across ASEAN likely to stay strong

Electricity demand likely to show continued strong growth across ASEAN

ASEAN electricity consumption has grown rapidly during the past 25 years with highest growth rates achieved by Cambodia, Laos and Vietnam (Figure 19). As a result the region's share of global electricity consumption has increased by 76% since 2000 to 4.5% in 2024 according to data from the Energy Institute.

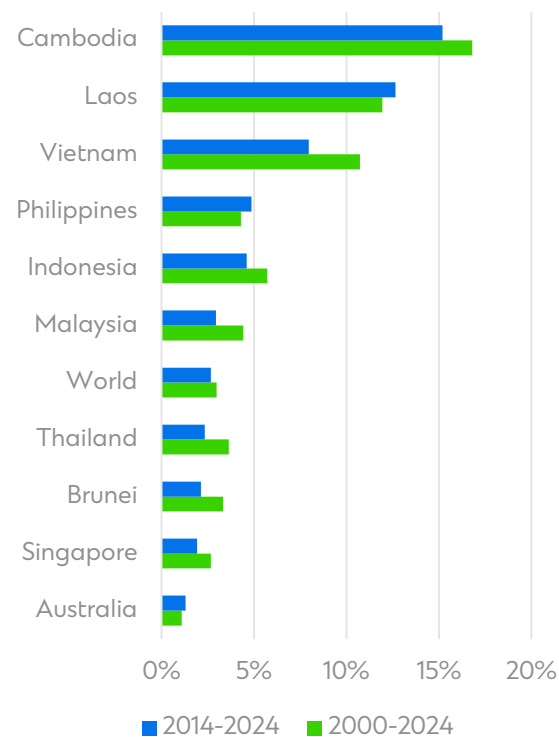
Despite strong growth in overall electricity demand, electricity consumption per capita remains low across most ASEAN countries. Data from EMBER suggest that electricity consumption per capita in the Philippines, Cambodia, Indonesia, Thailand and Vietnam averaged c1850kWh in 2023 or c80% below levels seen in high-income countries (Figure 20).

Low per capita electricity consumption across ASEAN coupled with the fact that per capita electricity consumption tends to increase as average income levels rise implies that overall electricity consumption growth may stay high across ASEAN as their economies develop.

ASEAN's total electricity demand in 2024 reached 1,352 TWh. An increase in electricity consumption per capita across ASEAN's countries to the current average of high-income countries (8,925 TWh) would suggest a 4.5-fold increase in total electricity consumption to almost 6,200 TWh. To put this in context this would suggest that electricity demand across ASEAN would be c40% higher than what the USA experienced in 2024.

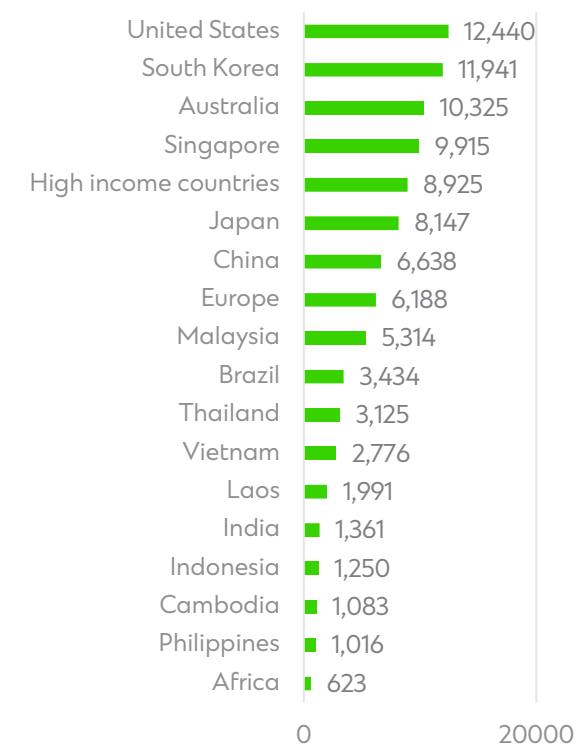
Electricity consumption growth by country (%)

Figure 19



Electricity consumption per capita (kWh/yr)

Figure 20



Meeting electricity demand and reducing emissions set to drive renewable solutions

The carbon intensity of electricity in ASEAN is high

Electricity across ASEAN is mainly produced using coal which explains the high carbon intensity of electricity in the region (Figure 21 and 22). A widespread expansion of renewable power capacity may be an effective way to help reduce electricity-related emissions across the region.

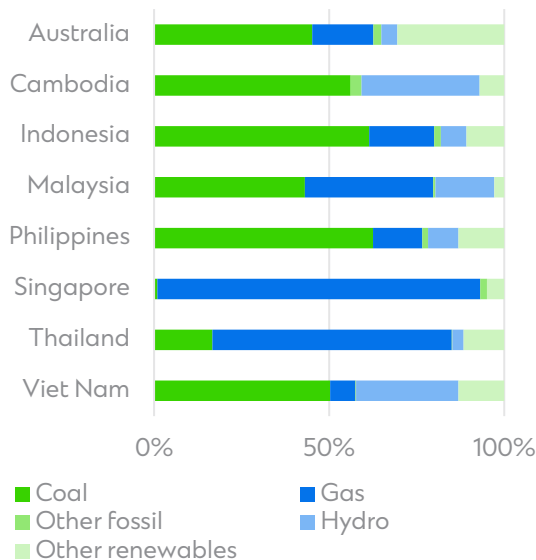
The potential for ASEAN countries to use renewable technologies to help meet the likely increase in demand for electricity is substantial. Work from the IEA suggests that the ASEAN countries have the potential to generate around 20 terawatts of wind and solar energy per year which would be more than 50 times current consumption levels of electricity ([Accelerating Renewables Growth in ASEAN](#)).

Work from other organisations including the UN and the World Bank support the notion that renewable power generation potential across ASEAN is high. Analysis from the World Bank in 2022 suggested that Indonesia, Vietnam and the Philippines had total offshore wind generating capacity of more than 1 Terawatt ([Global Offshore Wind Technical Potential](#)). A late 2025 report from the UN suggests that Vietnam’s offshore wind potential alone could be 1 Terawatt ([Offshore wind Vietnam](#)).

The World Bank also produced the Global Solar Atlas ([Global Solar Atlas](#)) which provides technical solar potential per country. Their data suggest that except for Singapore, ASEAN countries on average would be able to meet current electricity consumption with solar power farms that would occupy just 0.02% of their land size. To put it another way, meeting a ten-fold increase in electricity demand through the use of solar farms alone, would require just 0.2% of land mass per country on average.

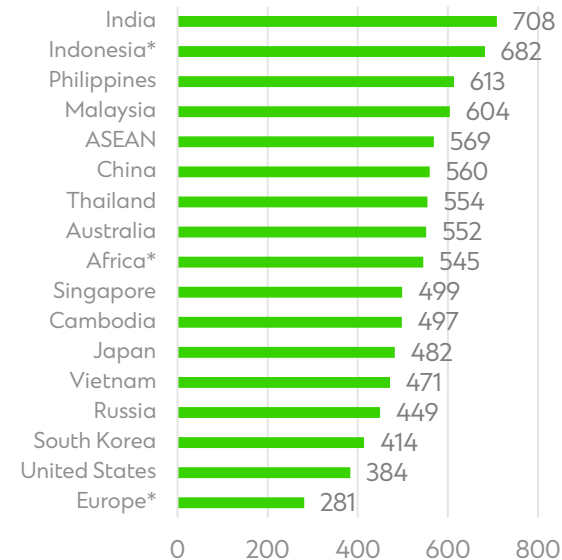
Electricity generation by source (% of total, 2024)

Figure 21



Carbon intensity of electricity (gCO2/kWh, 2024, * = 2023)

Figure 22



Energy security has become a tailwind for transition solutions across ASEAN

ASEAN countries tend to rely on foreign countries for their fossil fuel

Emission-related objectives and meeting strong growth in demand for electricity are not the only reasons for ASEAN economies to accelerate the adoption of renewable power technologies. The latest Southeast Asia's Green Economy report ([link](#)) highlights two structural shifts that now drive the transition agenda too.

- **The rise of policy fragmentation:** The focus of government policies has started to shift towards energy security and safeguarding domestic growth.
- **Growing geopolitical volatility:** The implementation of trade tariffs and geopolitical tensions is disrupting global supply chains and raises fuel price volatility

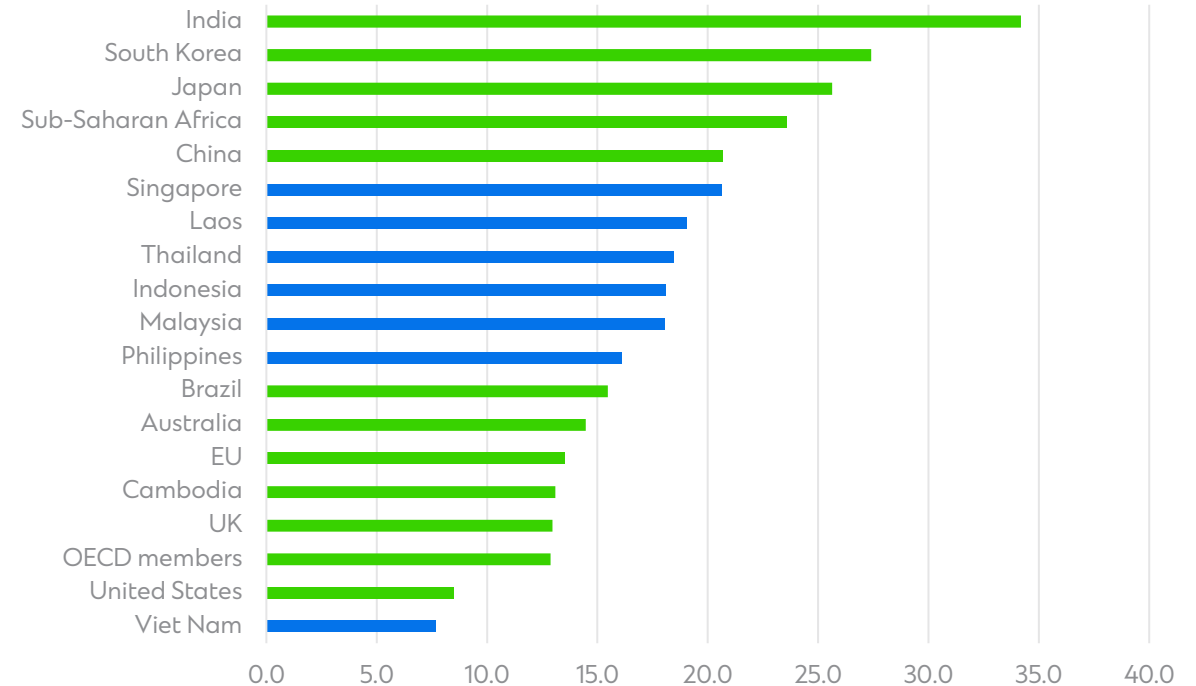
Improving the security of energy supply and reducing macro economic and fiscal risks from the impact of geopolitical volatility are relevant factors for countries across the ASEAN region.

Data from the World Bank suggests that except for Vietnam most countries across ASEAN currently have an above average reliance on fuel imports (Figure 23). This raises vulnerability to supply shocks and raises foreign exchange risks as these fuel imports are typically paid in US Dollars rather than in local currencies.

ASEAN countries with below average credit ratings would likely see a greater benefit from a reduction in fuel imports and the associated foreign exchange dependency. Ratings from Moody's and S&P Global indicate that this may be true most for Laos, Thailand, Indonesia and the Philippines.

Fuel import as % of merchandise import (% , 2022-2024 average)

Figure 23



Full scale adoption of low carbon solutions across ASEAN has not yet happened

Development of low emission power solutions is accelerating

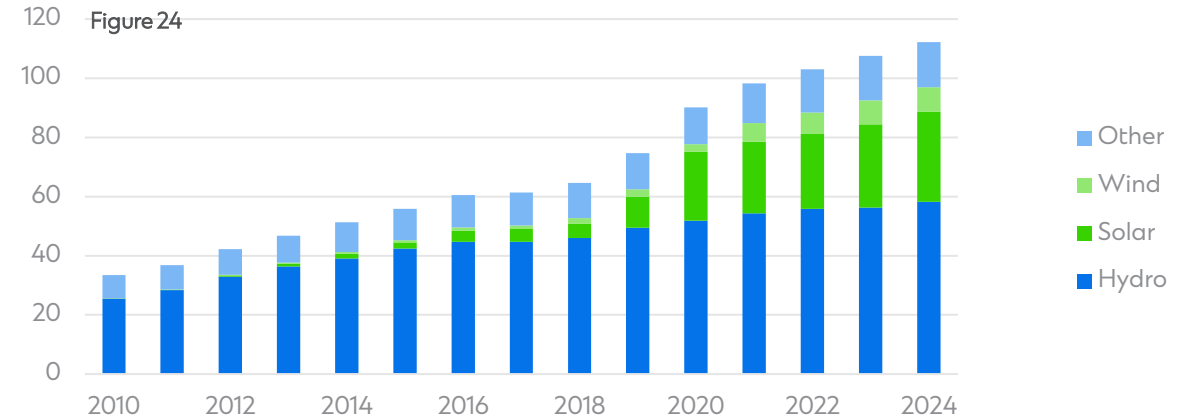
Policymakers across ASEAN have recognised the benefits that renewable power can deliver as indicated by increasing renewable power generating capacity and the adoption of national energy transition plans and targets.

- **Vietnam leads the way:** Low emission electricity generating capacity across ASEAN has increased by almost 2.5 times since 2010 to more than 112 Gigawatts in 2014 (Figure 24), however, investment activity has not been equal across all countries. Vietnam's renewable power generating capacity makes up more than 40% to the region's total or more than that of Indonesia, the Philippines and Thailand combined.
- **Solar and wind have yet to scale:** Deployment of renewable power capacity across ASEAN remains tilted towards hydropower which makes up more than 50% of the region's total (Figure 25). Solar and wind capacity contributed 34% to the region's total in 2024 suggesting significant expansion potential as these power sources contribute between 71-85% of renewable power capacity in Australia, China, the EU or India. Data from EMBER shows that across the ASEAN region solar and wind power made up 4% of total electricity generated in 2024. This compares to 11% and 18% for India and China respectively and to almost 30% for mature markets such as the EU and Australia again suggesting that ASEAN countries have yet to fully utilise solar and wind potential (Figure 26).

Expanding solar and power capacity sufficiently is a sizeable task

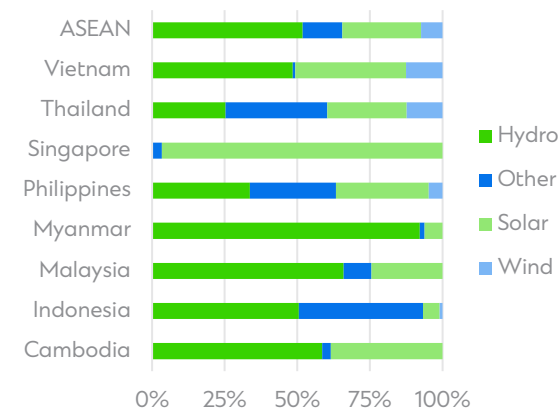
ASEAN countries face substantial investment requirements if they are to increase the share of electricity consumption that is supplied by solar and wind. Raising it to 20% of current consumption, the average seen in India, China and the EU, may require 168GW of solar and wind capacity across the region or 129GW more than the current installed base. Total investment requirements will likely be much higher given the potential for electricity consumption to increase across ASEAN countries as highlighted earlier in this note.

Renewable power capacity across ASEAN (GW)



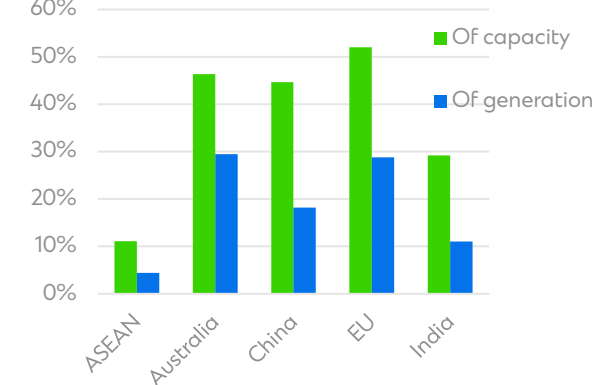
Renewable power mix (2024)

Figure 25



Electricity share of solar and wind (2024)

Figure 26



A low carbon ASEAN economy may require USD400 billion of investments per year

Creating low carbon economies requires substantial investments

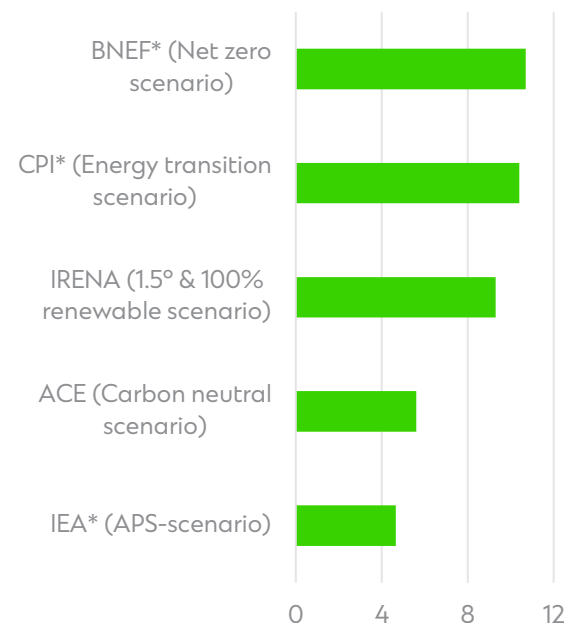
To transition economies across ASEAN towards low emission technologies requires substantial levels of investments. Data from the IEA suggest that clean energy-related investments across the ASEAN region reached USD32 billion in 2023 ([link](#)). Since then, investments have increased with the most recent Energy Investment Trends report from the Bloomberg New Energy Finance (BNEF) unit showing that clean energy investments across the Asia Pacific region (excluding China) reached cUSD66 billion in 2025. Despite the recent increase, clean energy related investments in ASEAN are not sufficient to support a full energy transition across the region.

Estimates from various organisations show that for the ASEAN or Southeast Asia region to achieve net zero emissions might require more than USD10 trillion between 2025 and 2050 or more than USD400 billion per year (Figure 27). Work from the Climate Policy Initiative suggests that transforming the energy supply system alone may require more than USD 200 billion per year while creating an electric and low emission transport system could cost an additional USD 100 billion per year (Figure 28).

These estimates seem in line with adaptation-related financing needs which relate to investment requirements associated with minimising the impact of climate change. The most recent Adaptation Gap Report from the United Nations suggests that adaptation-related cost estimates for South Asia and East Asia and the Pacific could reach close to USD 200 billion per year in 2035 ([Adaptation Gap Report](#)). Previous estimates from the Asia Development Bank showed that climate resilient infrastructure related expenses for Southeast Asia would be USD 210 billion per year until 2030 ([ADB](#)).

Cumulative investment requirements (USD trillion until 2050)

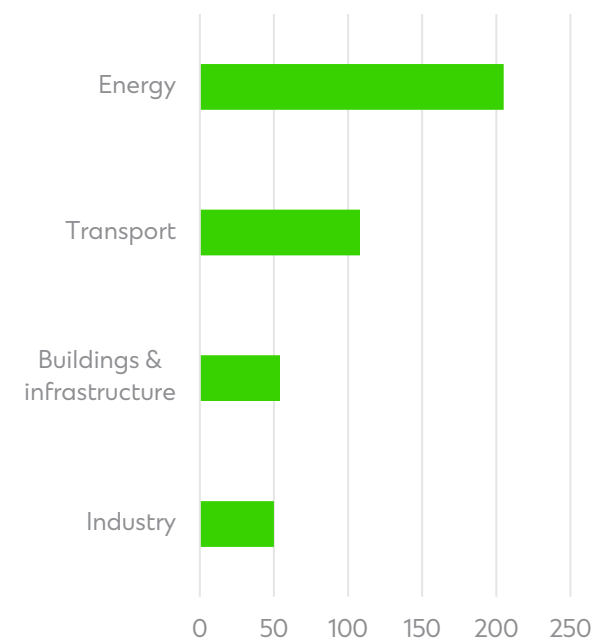
Figure 27



* Southeast Asia, others ASEAN

ASEAN transition investment needs (annual USD billion, 2024-2050)

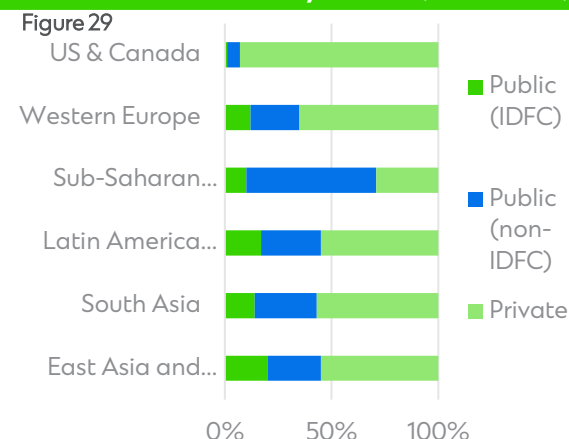
Figure 28



Sustainable finance as a potential lever to close the ASEAN funding gap

- **Supportive policy frameworks** Enabling a strong increase in investments needed to deliver the energy transition across the ASEAN region is unlikely to be easy. Appropriate regulatory and policy structures and economic policies focused on improving credit ratings can help bring about a broadening of the investor base willing and able to allocate capital towards transition solutions across the ASEAN region.
- **Greater private sector engagement** Private sector engagement with transition-related investments in ASEAN will likely be a key focus for ASEAN countries. Data from the International Development Finance Club (IDFC) shows that during the 2022/2023 period private capital accounted for 55% of climate finance flow towards projects across South and East Asia and the Pacific (Figure 29). This compares to 65% for projects across Europe and as much as 93% for projects across the US and Canada. Reducing project risk will help draw in additional private capital into the ASEAN region.
- **Bond and equity financing needs to rise** Data from ACE shows that project finance accounted for the majority of energy investment financing across the ASEAN region during 2010-2024. Bonds and equity are key private-capital related financing tools, however, these accounted for less than 25% of energy financing across ASEAN during this period. Supportive policy and regulatory frameworks may increase the attractiveness of ASEAN transition investments for bond and equity investors.
- **ASEAN seems to have strong sustainable debt potential** Data from the Institute of International Finance (IIF) shows that the ASEAN region accounted for just 3% of the world's outstanding balance of sustainable bonds and loans at the end of 2024 (Figure 30). A comparison of sustainable debt issuance by credit rating shows that ASEAN countries have issued substantially less sustainable debt than other countries with similar debt ratings (Figure 31).

Climate finance by source (2010-2024)



Energy related financing (2010-2024)

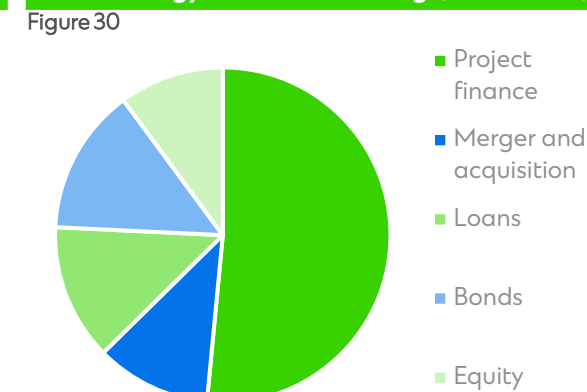


Figure 31

Outstanding sustainable debt (USD billion 2024, population in brackets)						
S&P credit rating	B	BB	BBB	A	AA	AAA
ASEAN countries						
Vietnam (102mln)		5				
Indonesia (287mln)			27			
Philippines (118mln)			14			
Thailand (72mln)			30			
Malaysia (36mln)				21		
Singapore (6mln)						109
Other countries						
Turkey (88mln)		43				
Brazil (213mln)		51				
India (1,476mln)			70			
Mexico (133mln)			66			
Chile (20mln)				70		
China (1,413mln)				394		
Saudi Arabia (35mln)				39		
UAE (12mln)					53	

Accelerating transition investments means addressing key roadblocks

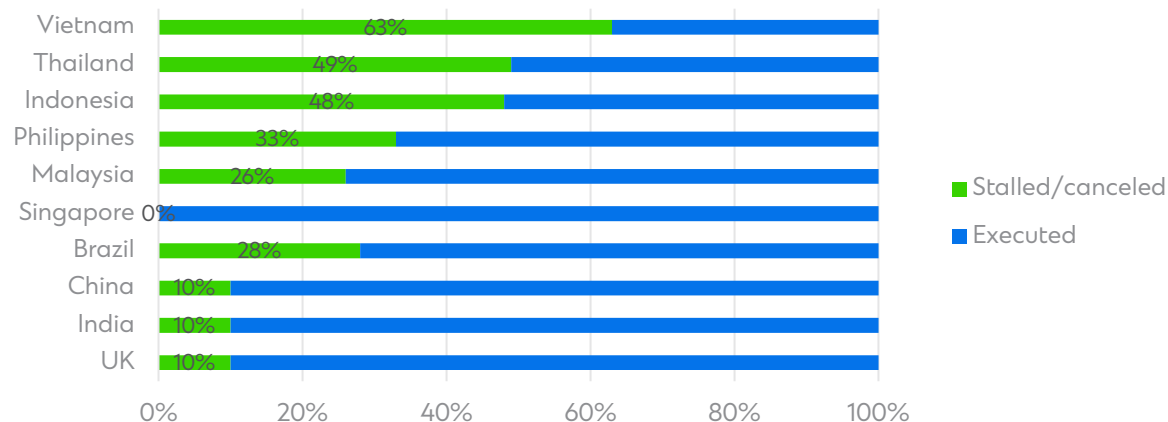
Factors that help create the conditions needed for increased investments

To help unlock public and private investments for transition solutions across the ASEAN region requires the removal of any constraints. Some of the more relevant ones in this regard are the following:

- **Policy uncertainty** Greater cash flow predictability supports investment in transition solutions that are typically long-term in nature. Clear and stable subsidies and taxation policies help as are stable government policies in relation to offtake agreements.
- **Market design** Reducing barriers to competition across low carbon energy markets enhances efficiency and help draw in greater levels of private capital participation.
- **Licensing processes** Project delays and cancellations lower the likelihood that long term low emission energy supply targets will be reached (Figure 32). Permitting and licensing processes across ASEAN countries can be optimised to increase project execution rates.
- **Grid related challenges** Investment in ASEAN's electricity grid capacity has not kept pace with demand for electricity ([link](#)) and new demand from EVs or Data centers comes online more quickly than grid upgrades (Figure 33). Removing grid constraints is a key priority to enable the transition across ASEAN which likely requires policy, strategy and investment alignment across the region's countries.
- **Cost competitiveness** Coordination among ASEAN countries can help transition-related supply chains to integrate more which should improve the economies of scale for solar, wind and battery storage solutions and make them more cost competitive.
- **Innovative finance tools** are needed to address the specific risk return profiles associated with transition solutions across ASEAN countries. Blended finance, government-backed guarantees, political risk assurance, green bonds and outcome bonds are some examples that show promise in this regard.

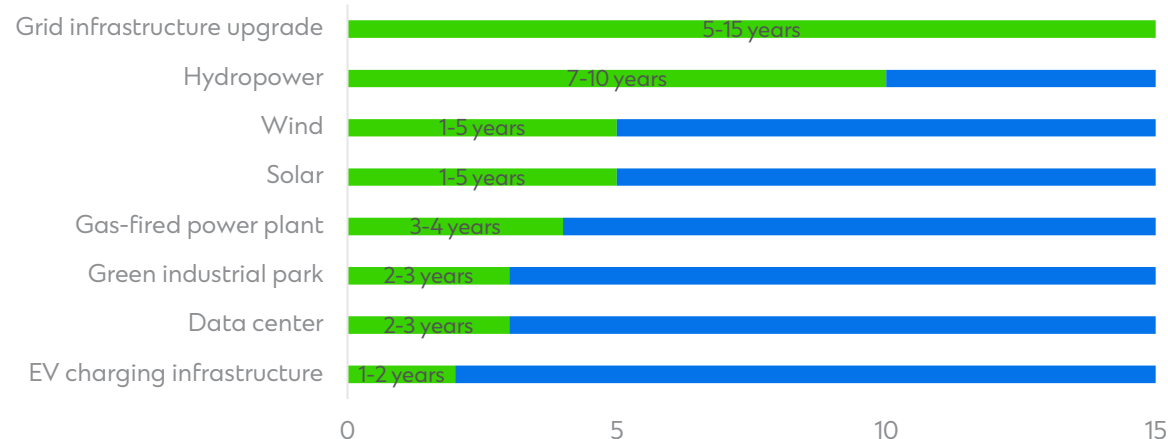
Clean generation capex: executed vs stalled/cancelled (2021-2025)

Figure 32



Time to come online (years)

Figure 33



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